

**From Research to Practice. Communication through Environment Rating Scales.**

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### **Abstract**

The aims of this article are to discuss how pedagogues in preschools can use data from research to develop pedagogical practice and if modelling research knowledge into indicators of pedagogical quality in environment rating scales could “close/ bridge the gap” between research and practice and lead to higher quality.

In the article I will start with a brief presentation of the debate on how research knowledge can or should inform practice and traditional ways in how this could be done. Then I introduce my perspective on quality, the overall analytic frame and inclusion as criteria of quality as an example as the basis for an ongoing study. Finally I reflect on a dialogue tool on quality that could be used as a tool for evaluation of pedagogical quality and development in preschools and day care centres.

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## **The study**

Based on the concepts of the bio-ecological systems theory (Bronfenbrenner & Morris, 2006) and a culture-sensitive interactionist perspective (e.g. Sylva et al, 2010) we aim to develop contextual and cultural fitted indicators for dialogues on quality and to increase our knowledge on what quality in early childhood education and care is. How can it be seen, and how can it be developed and evaluated in a way that transforms knowledge from research into practice.

Building on the ERS mainframe (Environment Rating Scale) in constituting a baseline our object is to develop research based and measurable criteria and indicators for quality in preschool (children at the age 1-5) in a tool for dialogue (KVALid) that captures:

- Values and general child policy goals (an objectivist perspective)
- Subjective and culturally-based criteria in the curriculum (a relativist perspective)
- Knowledge of children's learning and development and a children's perspective
- Knowledge of the processes and results of educational efforts to enhance quality
- And bridge the gap between research knowledge and practice

## **Background**

The Danish Day Care Facilities Act (2015), which provides the curriculum on which day care education is based, does not stipulate very clearly what children should learn and therefore how educational processes should be organised. In fact, in Denmark pedagogical practice is based primarily on the so called social pedagogical approach (Bennett, 2006; Siraj-Blatchford & Mayo, 2012) though, especially since 2004 a focus on learning has been introduced in the Danish curriculum (Broström, 2016) leading to an enhanced debate, political as well as pedagogical, whether the so called educational approach should contribute and how this could be balanced pedagogically.

However, this means that we still today must accept that there are large local differences in the quality of day care facilities in Denmark (Nordahl, 2015), and also that we in fact have little knowledge of whether the desired politically determined targets are being met or not and what the quality is really like. There is therefore a growing and considerable interest in the quality of the learning environment and the impact of early year's education on children's well-being, learning and development. This is supported by international research that demonstrates how early childhood education and care can promote the development of children (Pianta, Barnett, Burchinal and Thornburg, 2009).

Children's development does not come by itself (Bronfenbrenner & Morris, 2006). According to the Bioecological Theory of Human Development and the Process-Person-Context-Time model proximal processes are defined as key factors in development (Bronfenbrenner, 1979; Bronfenbrenner & Morris, 2006; Siraj-Blatchford & Mayo, 2012, p. xxvii). Lack of strength in these key factors creates gaps in achievements and well-being leading to lack of competencies necessary for children to succeed in school and beyond.

High quality depends on the preschool staff's approach to children and knowledge of children's development and needs (Sheridan 2009). For this reason, the professionals should have

access to the latest scientific knowledge. Empowering proximal processes in interactions with the children leads to higher quality.

Advances in the growing field of applied research in education and prevention science have matured the field (Pianta et al., 2009) and in Denmark as well as internationally produced new knowledge that identifies and seek to close the skill gaps, but this knowledge, it seems, has not yet reached practice or policy levels. As Pianta et al puts it: “Despite the potential links between research and evaluation on the one hand and program development, practices, and public policy on the other, there are too many key areas in which public policy and practice are not well aligned with the knowledge base” (2009, p.3).

Although professionals in educational and pedagogical practice show growing interest in how and what research based knowledge can offer their practice (Hammersley, 2007), the capacity of the profession and the professional to obtain and use this knowledge is still, according to Ben Levin (2013), rather weak. Research shows that the professionals do not apply research literature, despite their great interest in it. It is difficult to find, hard to read and understand, and difficult to implement into practice (Levin, 2013; Levin et al., 2013; Hammersley, 2007).

Even in development projects where data from research in their own practice is presented to practitioners it seems to be difficult to make an informed choice about how to use this information and how to move on and perform a development initiative (Andresen, 2013; Næsby, 2014). This makes the work of applying information from research central and perhaps crucial for the pedagogues’ competence development.

### **The role of research knowledge**

Over the past many years, and even more today, the role of research knowledge in relation to practice is debated (Hammersley, 2007; Levin, 2013; Mitchell, 2014). Whether research should in some way inform practice and how might this be done seem to be some of the central questions. British educational researcher David H. Hargreaves argues that the role of educational research in facilitating evidence-informed practice should be reconsidered. According to Hargreaves (1996) research is not cumulative and has little practical relevance. Using the teaching profession as an example, Hargreaves points out that the gap between research and educational practice is due to the lack of capability in the research community to disseminate research results in a way that makes it useful for practice (D.H. Hargreaves, 1996; Hammersley, 2007). In the debate between Hargreaves and fellow researcher Martyn Hammersley, Hargreaves states, “research should provide decisive and conclusive evidence that if teachers do X rather than Y in their professional practice, there will be a significant and enduring improvement in outcome” (D.H. Hargreaves, cited in Hammersley 2007, p. 53). If such evidence is absent, practice would be a matter of “shifting fashion, current ideology or personal preference” (ibid.).

From a researcher’s point of view, this is a challenge because “research evidence is only one influence on what professionals do, which means it must compete for attention and interest with all kinds of other information sources” (Levin, 2013, p. 13). Research on the effect of education and intervention programs shows that “practitioners in every field give greater weight to the views of their colleagues and their interpretations of their own experience than they do to research evidence” (p. 12). However, as Hammersley argues, this should not lead to the misinterpretation that

practitioners themselves should be researchers. The purpose of research and educational practice is different from each other: “They are designed to serve different purposes, so that, while there will be some overlap in techniques and relevant considerations, the orientation should be different” (Hammersley, 2007, p. 35).

According to Andy Hargreaves and Michael Fullan (2012), being a professional educator requires professional capital. This means being professional not only through status and autonomy but through having the capability to make informed judgments and decisions. In their opinion, the profession collectively should reflect research in the educational area and judge what is evidence-based knowledge, what is best practice and next practice and what are mere quick fixes without research evidence or documented effects. In the same way, D.H. Hargreaves earlier pointed out that nowadays no one believes that helping people is merely a matter of a simple technical application. Rather, it is “a highly skilled process in which a sophisticated judgment matches a professional decision to the unique needs of each client” (D.H. Hargreaves, 1996, p. 4).

Sophisticated and informed judgment is based on human, social and decisional capital. To be able to make discretionary judgments, in A. Hargreaves and M. Fullan’s view, is the essence of professionalism (2012). This relies on “the ability to make decisions in situations of unavoidable uncertainty when evidence or the rules aren’t categorically clear” (Hargreaves & Fullan, 2012, p. 93). This ability describes what it takes to create high quality. From the professional practitioner’s perspective, evidence and research knowledge can inform practice, but this knowledge does not have all the answers in professional practice. The professional pedagogue must reflect on this knowledge and, in the end, determine what is best for practice.

Still, research knowledge need to be communicated. According to D.H. Hargreaves (1996), scientific knowledge can be of value to practitioners but rarely in an unmediated form. Danish researchers Jens Rasmussen and Claus Holm (2012) identify four strategies that show how this traditionally is done.

### **Ways to facilitate evidence-informed practice**

The first strategy is based on the assumption “that research results can be transferred directly from the system of research to practitioners, similar to the traditional sender/receiver communication model” (Rasmussen & Holm, 2012, p.65). This seems to be a kind of classic input-output model, where research knowledge has to be translated and put forward in a linear transfer, and the use of it depends on the receiver’s ability to understand it and make it work.

The second strategy is in line with D.H. Hargreaves’s proposition of a kind of action research: “The idea is that research and scientific knowledge has to be applicable to practice and practitioners by producing solutions rather than new knowledge. The criterion of success is changed from reliable true knowledge to socially robust knowledge” (Rasmussen & Holm, 2012, p. 65). Hammersley, among others, rejects this strategy, as it is likely to compromise research as well as practice when the border between the two systems is erased (Hammersley, 2007). The true/false criteria for research knowledge will, as in the first strategy, turn into a code based on what works in practice. However, as Rasmussen and Holm argue, this seems to be a better approach because it actually meets problems in practice and try to find solutions to them.

According to Rasmussen and Holm, a third strategy focuses on the border between research and practice. What they describe as boundary work “signifies strategies that defend the demarcation criteria separating one knowledge domain from another, and are said to be in a better position to foster informed practice” (Rasmussen & Holm, 2012, p. 66). The border could be seen as a trading line and the boundary worker as the person who transports and translates knowledge from one field to the other.

The fourth strategy is described, in sociological system’s theoretical terms, as structural coupling: “Structural coupling is a concept denoting the relation or relations between society’s individual systems of function. In other words, it is a concept for system-to-system relations” (Rasmussen & Holm, 2012, p. 67). The concept describes how a system relates to its environment and at the same time maintains independence from other systems. Any system maintains itself (autopoiesis), and structural coupling makes it possible to relate to other systems through communication (Luhmann, 2002). This allows expectations to be communicated. If research shows a way to improve practice, this new concept could be communicated, and the practitioner could choose to relate to it. One way of doing so is negotiating collaborative settings built on common goals, allowing expectations of common moral purposes to set the direction of an eventual development initiative.

In the following I pursue the notion of the fourth strategy, that the so-called gap between research and practice is not a border to be crossed or a gap to be filled, but a distinction to be communicated and mediated. I do so in taking on an abductive and interactionist perspective.

## **Methodology and Methods**

### **An Abductive and Interactionist Perspective on Quality**

An abductive research approach relies on a firm theory that outlines the patterns and features to be investigated empirically. These patterns consist of sustainable qualities that emerge in different dimensions, such as those qualities stated in the United Nations Convention (1989) of Children’s Rights, the Index of Inclusion in the UK (Booth & Ainscow, 2002) and the research based environmental factors stated in the Early Childhood Environment Rating Scale (Harms, Clifford & Cryer, 1998):

High quality care environments for children must provide for three basic needs that all children have: protection of their health and safety, the facilitation of building positive relationships, and opportunities for stimulation and learning from experience (Clifford, Reszka & Rossbach, 2010, p. 2).

However, an objective (or global) perspective, represented here by Harms, Clifford and Cryer and Clifford, Reszka and Rossbach, has its limitations, as it tends to claim universal standards or quality criteria that are static. In my view, along with that of Swedish researcher Sonja Sheridan, a pedagogical perspective of quality has to originate from research and documented evidence but must also inherit the children’s perspectives. On the other hand, a subjective perspective (or narrow), although it respects subjective values and tries to let the children’s voices be heard, cannot stand alone, as it tends to be relative (Sheridan, 2009; Baustad, 2012). It has to be viewed

interactively so neither the objective nor the subjective (or relative) perspective, with their limitations, becomes dominant.

As Sheridan shows, pedagogical quality is defined “as a multidimensional phenomenon with interdependent qualities” (2009, p. 255). According to Bronfenbrenner (1979) and Ball (2006), in an interactionist perspective, dimensions of the society, the pedagogues, the children’s development and the learning environment continuously and dialectically influence and are influenced by each other (Sheridan, 2009; Baustad, 2012; Sylva et al., 2006). Even if pedagogical quality is an individual experience, as it depends on the perspective, it is possible to identify common features built on local variations and contexts and communicated within and between social systems and organizations (Harms, Clifford & Cryer 1998; Sheridan, 2009; Sylva, Melhuish, Sammons, Siraj-Blatchford & Taggart, 2010; Baustad, 2012). The Early Childhood Environment Rating Scales referred to above have been used in research studies and program improvement efforts in many countries as it measures global quality (structure and process). However, even if the scales have been proven to be reliable and valid in different countries when revised and carried out with some adaptations (Sylva et al, 2006), the scale items do not fit together to measure single development dimensions such as to promote emotion regulation or school readiness (Gordon et al., 2015). For this purpose the scales should be refined, reorganized or new measures be developed.

In the UK, in Norway, in Sweden and in Denmark as well, current educational debates build on research that indicates that the effects of children’s well-being and learning throughout life rely on high-quality preschools with well-trained educated staff (Sylva et al., 2010; Nordenbo, 2011; Jensen, Rasmussen & Jensen, 2013; Neylon, 2014). In addition, they build on shared values as stated in the Salamanca Statement, signed by Denmark at the UNESCO World Conference in 1994. As a consequence of the political and economic development and debates, inclusion has also become a criterion of quality in the pedagogic discussions (Booth & Ainscow, 2002; Engsig & Johnstone, 2014; Mitchell, 2014; Næsby 2014). Inclusion is seen as a development dimension or quality criterion aside from learning, participation and relations (Næsby, 2012b).

In an interactionist perspective, the interplay between the learning environment and the children is what drives their well-being, learning and development in a positive direction. Inclusion, participation, relations and learning are covariant criteria of quality. However, when we want to assess and evaluate pedagogical practice, we have to make an analytic distinction in order to operationalize the criteria. For instance, participation is closely connected to inclusion and could be introduced as a coding and an operationalized distinction between inclusion and exclusion.

### **Inclusion**

The individual element of inclusion, the experience of being included, is stimulated by being involved in decisions about activities. To be recognized and experience that one’s perspective is taken seriously, is given meaning and is valued, affects even social inclusion.

Participation in an inclusive pedagogical perspective means organizing the practice so that all children are seen and heard and their utterances recognized as meaningful. Thus, it is a question about pedagogues’ attitude towards the children, their perspective on learning and development and the way they carry out this perspective (Sylva et al, 2010) taking on a child’s perspective in which “...children themselves take a more active role as participants...” (Broström, 2016, p.7).

Participate/not participate is, in an interactionist and distinctions theoretic perspective, the code by which communication operates and the process and goal we can observe empirically. To be included, children must participate in decisions about everyday activities, not left alone (low quality) and not always instructed by the staff (minimal quality) (Sheridan, Samuelsson & Johansson, 2009). In both cases social inclusion would be either on the children's own terms or totally on the staff's terms.

Participation through dialogue and cooperation between children and staff increases potential inclusion (good quality), but engaging children on the basis of didactic competencies and research knowledge oriented towards learning in light of the curriculum enhances both social and mental inclusion (high quality). To be specific, the demands of the professional pedagogue are that she be aware of her own and the children's perspective (Broström, 2016); that both parties involve themselves; that didactic goal direction and sensitivity towards the children work simultaneously; and that the quality of the communication and interaction between pedagogues and children be crucial, as well as the relations between the children themselves (Samuelsson & Carlsson, 2008).

### **Form Analysis as Research Design**

The form analysis, developed by G. Spencer-Brown (1972; 1979), is a tool that, in a pragmatic way, makes it possible "to observe how central distinctions work or operate in practice" (Jönhill, 2012, p. 54). Spencer-Brown develops a calculus of indications based upon a fundamental operation of distinction, "a universe comes into being when a space is severed or taken apart" (Spencer-Brown, 1972, p. v).

Methodologically, form analysis is a way to explain complex conditions in a simple format. It is a mathematical figure or expression dividing the studied into something inside and something outside. It also describes the system and its environment, as in the theory of social systems by Niklas Luhmann (2002). It is connected with the pragmatic form analysis of C. S. Peirce (the model of truth) (1955) and T. Parson's AGIL model (the cross model) (Becker, 1998). Form analysis clarifies the differences and emerging co-variant patterns, that can be observed, not the objects themselves (Jönhill, 2012). I therefore use an abductive approach with an epistemological orientation.

By choosing this design, I also incorporate a method triangulation. In order to understand the complexity of pedagogical practice and to learn more about the benefits and limitations of early childhood education in different environmental settings all methods and mixed methods, under ethical considerations obviously, should be used (Siraj-Blatchford & Mayo, 2012). Environmental Rating Scales (ECERS/E/3) can be used to measure international quality standards in Danish preschools and establish a baseline. As they do not relate closely to the Danish curricula, we need to develop new tables and subscales suited to be discussed in a national context (note: we might be proven wrong, as the themes of the ECERS/E/3 in some way interconnect to some of the national themes (personal and social development, literacy, science and environment) as shown in a North Carolina study (La Paro, 2014) and a Norwegian study (Baustad, 2012)).

The development of quality indicators for dialogue will be validated through development dialogues between researchers and practitioners (Johansson, 1993).



### **Dialogues on quality**

When pedagogues themselves analyse their information on practices, collected through surveys or a kind of mapping or self-evaluation, they appear in the system's theoretical concepts as observers. It is the pedagogues that, as observers, describe events and phenomena in practice. Something falls within the system (context) they work with and in, or something falls outside. In addition, there is always the case of a boundary in space and time and thus certain situations (Jönhill, 2012, p. 11). Using the ERS methods introduces the first methodological distinction. One can say that the creation of a structure in terms of items, scales and subscales, sets the framework for communication. Repeated analyses, self-evaluation and further information obtained, create the possibility of generalization (a unit of difference) by creating reliability, both through further observations and through changing the perspective or analysis level (Jönhill, 2012, p. 13). Obtaining research-knowledge in this way could cause a change in the perspective and point out the need for further knowledge, as well as establish new knowledge and practice. One should recognize that using the scales could course a bias, as they tend to direct the user to the defined "best practice" inherited in the scales (La Paro et al., 2014).

The structure determines which options are set up in the communication about quality when the pedagogues try to operationalize the research presented to them. This raises at least 4 implications:

1) Compared to the standards that describe a high-quality preschool, development is a matter of organization; how the resources are distributed, justified and used didactically (Hansen, 2012). High quality is where the children are participating in formal, professionally managed learning and development communities; where children and pedagogues pay attention to each other and seek to understand each other's intentions; where children and pedagogues involve each other; and where activities are aligned with children's intentions and children have a say in the choice of activity and form. The organization of practice in this way would diminish barriers in terms of time, conditions of rooms and materials etc.

2) As it turns out in the data from several research projects, the pedagogues themselves are sustaining factors in the learning environment (Nordahl et al 2012; Hansen, 2012; Andresen, 2013; Jensen et al, 2012; Næsby, 2014). As Hargreaves and Fullan (2012) would argue, this is a matter of human, social and decisional capital. And as Rasmussen and Holm (2012) states, the concept of the boundary worker in this case seems to fail.

3) This makes the challenge of mediating and obtaining scientific research information central and, in my view, even more crucial for the pedagogues' competence development. When research is mediated, in order for the different coding to persist in the communication, I find it necessary to build structures that can communicate across the demarcation between researcher and pedagogue.

4) Research knowledge has to be transformed. The pedagogues themselves cannot act as boundary workers. Building on common goals, communicating expectations of common moral purposes that are operationalized in quality indicators could set the direction of the eventual development initiative. One strategy to do so could be to model research data in to information about pedagogical quality. This information should then be validated and adjusted through dialogue between researcher and practitioner. As I will show in Table 1 below, following the ERS-line matrix as a form analytical tool, researchers could point out research based quality indicators and

thus perform a structure of communication that makes it possible for the practitioner to communicate their experiences and their assumptions on practical pedagogical problems and allow this to be contrasted and reflected in the mapping made by researchers.

### **Perspectives: Communicating and Measuring Quality**

In a Swedish study conducted by Sheridan, Samuelsson and Johansson (2009), it is shown how different learning environments can be characterized and what consequence each has for children's opportunities. In their research, three types of learning environments are identified (p. 240). In order to be more precise using the form analytic tool, and thus make it possible to relate to and combine it with the ERS-line<sup>1</sup>, I construct my measuring instrument with four types of characteristics and a focus on quality as follows:

- Divided environments = low quality
- Constraining environments = minimal quality
- Child-centred and dialogue-based environments = good quality
- Innovative and learning-oriented environments = high quality

In some preschools, inclusion quality is low, despite their good structural and economic conditions. The learning environment is child centred, as in a traditional social pedagogic approach (Bennett, 2006), but the staffs seem not to have formulated specific goals for activities and have withdrawn from the children's activity. Everyday practice takes place in what the researchers call "separate worlds" (Sheridan, Samuelsson & Johansson, 2009, p. 241). The children are not involved and the staffs are unengaged.

Better but still low quality is observed in preschools where activities are structured and mostly instructed by staff, as in a traditional educational approach, without reflections on the children's perspectives. The pedagogy is routinized and takes place in large groups, and the environment contains minimal possibilities for children's play. Conflicts and eventual frustrations are explained as due to children's problematic behaviour, bad conduct or factors outside the preschool.

In preschools with good quality, children's perspectives are taken into consideration. There are rich possibilities for children to play in various groups, and the staff show engagement and interest for children's initiatives. The children participate through dialogues, they are recognized as resourceful and the staff plans and works from didactic perspectives and theories that build on children's play, as in a traditional social pedagogical approach. But even in preschools with good quality, as in preschools with low or minimal quality, there seems to be some reluctance, if not resistance, to organize and thoroughly plan learning processes and environmental circumstances. The staffs do not challenge children's understanding and development from a didactic or research-based perspective. These findings are supported by Sheridan et al. (2009) and Hansen (2012) in observations that show that the pedagogy is not planned according to the curriculum (The Ministry of Children, Gender Equality, Integration and Social Affairs (2015). Act on Daycare. Plans for Learning, § 8).

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<sup>1</sup> Measures in the ERS-line are inadequate, minimal, good and excellent

In preschools with high quality, the environment is rich in materials, stimuli and challenges. The staffs have insight into children's development; they show curiosity about children's intentions and interests and engage in didactic reflection. They have a learning-oriented approach and reflect which experiences, which content and which processes are crucial for the children's well-being, learning and development. At the same time, the staffs seem able to "seize the day" and spontaneously connect to the children's initiatives.

In combining the empirical findings with the pedagogic theory, we can formulate indicators to measure for inclusion by the quality criteria (Engsig, Næsby & Qvortrup, 2015). Inclusion is defined as quality criteria and operationalized allowing the indicators to be assessed, rated and to be scored 1–7. This is exemplified in Table 1. I propose inclusion as a new pedagogical quality item in the ERS and I chose participation as the theme to be measured in a subscale.

Table 1. Indication matrix for quality rating of inclusion (example)

As I have shown, referring to Sheridan, there are different perspectives on quality, and various stakeholders focus on different sections/aspects of quality (Sheridan, 2009). Therefore, the understanding that is communicated by the researcher can be seen as only one aspect of several. These quality prospects and their justifications can be communicated as dependent on the given context, defined with respect to the substantive and technical aspects in pedagogical practice and ethically grounded in real effective values in practice.

Thus, it is necessary that pedagogues observe practice and observe how they themselves observe practice that is, being aware of how their own view of children affects what they see, say and think about practice. It is expected that pedagogues as professionals develop mental working models that enable communication, in a common elaborated language, about aspects to be understood so that new routines and a new culture can be created (Hargreaves & Fullan, 2012; Andresen, 2013).

The preschool as a professional community and social system relates to other social systems and organizational and functional systems. The pedagogues can be motivated to act reflective at a high level towards demands of quality from society and communicate their own contributions, for example an understanding of quality to society. They will be enabled to communicate, based on informed choices and decisions, because of their own systematized experience and research-informed practice.

Furthermore, it is expected that pedagogues as professional can reflect critically on (judge) the total set of expectations and motivate individual and joint decisions and their bases (exercise judgment) Hargreaves & Fullan, 2012; Hammersley, 2007). This creates a foundation for the knowledge created by and the communicative flow to the social system to be recycled in a continuous improvement of quality in preschool (Rasmussen & Holm, 2011).

As I argue, in the models, knowledge from research is operationalized in a format that makes it possible to be used in practice. The model with indicators can be used as an instrument for dialogues on evaluation and in development of practice as well, in search for what the pedagogues find in their own practice. However, this has to be further investigated.

## **Conclusion**

Research has shown how the model for dialogues on quality could be used as a tool for evaluation of pedagogical quality. Using research data in this way could sustain the ongoing communication in every preschool on how to develop pedagogical practice and how this effort could lead to higher quality. When the communication is modelled and enlightened in the context from both a pedagogues' and children's perspective (subjective) and a researcher's perspective (objective), research knowledge can inform practice and practice can inform research.

Current international and national educational research points out the problem in understanding skills development projects as simple transfer of knowledge and suggest, in different ways, new approaches to and understandings of the relationship between theory and practice (research and profession) (Hargreaves & Fullan, 2012; Hammersley, 2007; Qvortrup, 2012; Glaze, 2013; Holm & Rasmussen, 2012). Recent concepts, such as capacity building, knowledge mobilization and the concept of professional capital may be involved and provide a possible foundation for understanding how the profession could benefit from research and become an active and informed participant in practice and professional development.

Further research on the use of the rating scales could show whether this could be a way to improve practice and whether modelling likewise could distinguish and communicate across the demarcation between research and practice. Methods should be mixed as the ERS-line do not capture the depth needed to understand all we need to know to positively affect child outcomes

There are still concerns about developing a separate measurement tool without having a common framework in which to site this. One problem is that we seem mostly concerned with measuring the conditions for learning without a similar concern regarding what is being taught. Even when our research is building on the bio-ecological mainframe and an interactionist perspective as mentioned above we acknowledge that the Danish curriculum is limited. We need to look further into this and how it is applied across contexts.

Another challenge is that the rating scales have not yet been thoroughly tested in a Danish context. A research project using ERS instruments to produce a baseline is about to be conducted at the UCN. This could capture quality from a global quality standard's perspective, building the basis for a further investigation of practice in Danish early childhood provisions and centers in a more narrow approach.

Do Danish high quality day care centers sustain children's learning outcome? Well, we know from international and national research that they do (Næsby, 2014), but still there are large local differences in the quality of preschools (Nordahl et al, 2012; Nordahl, 2015) and we still need to refine existing quality measures in order to solve this problem. But we also know that high quality depends on the staff's approach to and knowledge of children. Therefore, the professionals need to have better access to the newest knowledge and research data on best practice; and to methods to communicate and to measure pedagogical quality.

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Table 1: Indication matrix for quality rating and inclusion

Theme:	Low Quality	Minimal Quality	Good Quality	High Quality
Participation				
Mental inclusion	The children are left alone in managing conflicts	The pedagogues regulate conflicts	The pedagogues support conflict management through dialogues	Children and pedagogues pay great attention to each other and they seek to understand each other's intentions
Social inclusion	The children are playing by themselves	The pedagogues seek actively to involve passive children	The children actively seek to involve each other	Children and pedagogues involves each other
Physical inclusion	In the learning environment there are few different activities and no organization of activities in smaller groups	There are various activities but always led by the pedagogues and they use few different group sizes	There are several different activities and forms, group size aligned with the children's development	Activities are aligned with the children's development and intentions and the children are participating and have a say in the choice of activity and form (group size and participants)