

Assessment in early childhood education: Micro-regimes perspective

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Abstract: The research literature on assessment policies in ECEC typically differentiates performative assessment regimes affected by neoliberal reforms, and social democratic assessment regime that highlights a holistic approach and democratic and local decision making concerning the focus of assessment. It has been suggested that this dichotomy between Anglo-Saxon and Nordic models may be a discursive tool created by authors from within the English language context to critique their own context rather than a description of actual practices. To shed more light on this scholarly discussion, this article introduces a concept 'micro-regime of assessment' to refer to a set of rules, practices, or arrangements related to assessment at a small or localised level, rather than at a broad national or international level. In particular, we ask what kinds of micro-regimes of assessment we can identify in ECEC in Finland and what kinds of interlinkages we can find between the background characteristics of ECEC teachers and micro-regimes of assessment. Assessment practices that teachers used were measured using an online questionnaire. The sample of this study consists of 1,194 participants from 834 ECEC centres. By using latent profile analysis, we identify four micro-regimes of assessment that are 1) technocratic-enthusiast, 2) fragmented, 3) enabling and 4) conflicted regimes. By using multinomial logistic regression analysis, we show how work experience and education were connected to the likelihood of micro-regime membership. In sum, the variation in assessment regimes relates to the aim of assessment, institutional arrangements for governing, and the kind of epistemic community that is involved in evaluation processes. The variation occurs at both the national and local levels. Our evaluative mindsets and the ways in which people make evaluation fit into local traditions, practices, and beliefs seem to emerge as part of local regimes.

Article History

Received: 07 May 2025

Accepted: 24 January 2026

Keywords

Evaluation regimes;
Datafication; Cultures of
assessment; Governance in early
childhood education

Introduction

In this article, we will introduce a concept *micro-regime of assessment*. By micro-regimes of assessment, we refer to a set of rules, practices, or arrangements related to assessment at a smaller or more localized level, rather than at the broader national or international level. We live surrounded by evaluation and assessment: we assess the life events of our friends by reacting their social media post with heart symbols and are asked to assess customer service experiences by filling online surveys. Professor Peter Dahler-Larsen (2012) has called this the 'Evaluation Society'. Evaluation and assessment that relates to it have, however, been part of educational institutions as long as they have existed. Likewise, in early childhood education and care (ECEC), that is at the focus of this study, measuring and weighting children, and monitoring their development are not new phenomena by any means. Yet, it seems that the focus on assessment has intensified: assessment, and evaluation based on it, has been increasingly used in steering educational systems, and teachers', students', and children's daily lives. The intensification may indicate a *kairos*, a window of time during which assessment policies are most likely to take new shapes. This is why it is important that the way in which we approach assessment policies in research is revisited.

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Earlier Research on Assessment Cultures in ECEC

Earlier research has identified wider assessment cultures that vary across the globe. The variation relates to for instance, whether there are institutional arrangements in the governing bodies for conducting and disseminating evaluations, whether evaluations focus on inputs, outputs and/or outcomes, and what kind of epistemic community is involved in evaluation processes (Jacob et al., 2015). Additionally, variance in assessment practices reflects the contextual variance in the central aims of education. Education may prioritize obedience to authority, reclaiming indigenous knowledge, emphasis on building up human capital, or there may be a focus on critical thinking and civic engagement. Consequently, the central focus of assessment varies (Jacob et al., 2015).

Assessment cultures in public institutions are at least to some extent connected to wider political systems such as welfare regimes. Based on this notion, research has argued that we could differentiate performative and social democratic assessment regimes. For example, standardized testing has had a key role in evaluating ECEC in the United States (U.S.) (Bassok et al., 2016) and England (Roberts-Holmes & Bradbury, 2016) but not to the same extent in the Nordic countries. The focus on standardized testing, performance-based evaluation and the focus on assessing children's learning has been termed as a performative assessment regime. This relates to the conception of ECEC having a significant impact on children's development and later life, and further, human capital development at the societal level. The conviction is that through standardized testing it is possible to monitor the returns of educational investments as well as provide information for parents about the quality of ECEC services to enable informed decisions in a marketized ECEC system (Roberts-Holmes & Moss, 2021).

At the same time, pedagogical documentation of individual children and child groups, teacher autonomy and the ideal of democracy have been seen as key parts of evaluation in the social democratic evaluation culture that has been prevalent in the Nordic countries (Urban et al., 2023). The central focus is said to be on evaluation of the learning environment, pedagogical activities, and the organisation of ECEC (Urban et al., 2023). According to document analyses of evaluation policies and academic literature on evaluation in the Nordic countries, evaluation is portrayed as being based on common values such as well-being, child-centredness, play, and reducing inequalities (Urban et al., 2023).

Thus far, most of the examinations of evaluation cultures (e.g., Dahler-Larsen & Boodhoo, 2019; Furubo et al., 2002; Jacob et al., 2015) and evaluation regimes (Urban et al., 2023) have been conducted on the *national level* based on national documents and national expert views on assessment practices. Yet, much responsibility in making decisions concerning assessment practices in many countries is delegated to the local-level actors. Consequently, it is worth considering whether the distinction between performative and social-democratic assessment cultures oversimplifies the complexity of assessment practices. It has been suggested that the dichotomy can be seen as a discursive tool created by authors from the English-language context, for the purpose of critiquing their own context (Urban et al., 2023). This division may be thus better understood as a conceptual construct that helps understand the variation in micro-level practices. Local level assessment practices have indeed been reported to be characterized by arbitrariness: the actual practices are not always in line with the official policy formulations. For example, by using local assessment practices in ECEC in Finland, Siippainen et al. (2023) show how the origin of the local assessment practices and their objectives are not necessarily known by the key actors, and they are not always in line with practices typically related to the wider assessment regime. However, even though they are local practices, they are not independent of international, and national policies (Siippainen & Paananen, 2025). The term 'regime' denotes this premise.

Earlier Research on Individual Assessment Styles

Earlier research on teacher-level assessment profiles will be helpful for understanding the arbitrariness of local assessment practices the earlier research has identified. The research on assessment profiles shows that the way in which teachers use assessment varies in terms of the perceived goals and focus of assessment, assessment practices, and perceived usefulness of assessment (Veldhuis & van den Heuvel-Panhuizen, 2014). For example, in a study conducted by Veldhuis and van den Heuvel-Panhuizen

(2014), the researchers identified four assessment profiles of mathematics teachers in the Netherlands: enthusiastic assessors, mainstream assessors, non-enthusiastic assessors and alternative assessors. Teaching experience and professional qualification relate to teachers' attribution to the assessment profile. The more experienced teachers were less enthusiastic assessors. Teachers who obtained their professional qualification from a teacher education college for primary school teachers were less likely to be alternative assessors, meaning that they were less likely to devise their own assessment practices, compared to ECEC teachers (Veldhuis & van den Heuvel-Panhuizen, 2014). In a similar person-centred study of teacher candidates' approaches to assessment, Coombs et al. (2020) identified eager, contemporary and hesitant assessors among teacher candidates in Ontario, Canada. Eager assessors were likely to endorse various approaches to assessment. Contemporary assessors endorsed assessment for and as learning, design and communication of assessments, and equitable and differentiated approaches to fairness. Hesitant assessors were unlikely to endorse any of the approaches to assessment. Younger teacher candidates were more likely to belong to contemporary assessors than hesitant assessors (Coombs et al., 2020). In addition, the grade level a teacher works with seems to have an influence on conceptions of assessment (Brown, 2004; Lui & Bonner, 2016). Teachers of higher grade levels are generally more accountability-orientated than teachers of lower grade levels (Bonner, 2016). We have very limited previous knowledge on assessment profiles in ECEC or how individual-level factors are connected to them.

In sum, examining assessment cultures or assessment regimes as national-level phenomenon hides the local level variation that has been identified in assessment profile studies (e.g., Veldhuis & van den Heuvel-Panhuizen, 2014). We therefore focus on micro-regimes of assessment rather than wider national evaluation cultures or merely individual assessment styles.

Bridging the Assessment Culture and Individual Style Approaches

What contemporary research has been thus far missing, is bridging examinations of wider assessment regimes and varying teacher-level assessment profiles. This is needed, however, as in education, assessment is closely linked to governing as there is a triple bind between assessment, education and governing: 1) assessment is used for governing children's future positions in the society: it is needed to fulfil the education's function as a mean for social placement (Biesta, 2015), 2) assessment is often used as a basis for monitoring the returns of educational investments (Biesta, 2009) and 3) assessment practices in education are typically governed nationally and/or locally (e.g. Dahler-Larsen, 2012). Given the strong linkage between assessment and governing, and the contextual variation of the most central aims of education, it will be fruitful to examine, besides evaluation cultures, the assessment and evaluation regimes. Bridging these research discussions allows for the development of a more robust and context-sensitive understanding of assessment. We suggest that this will aid us to better explain the dynamics of assessment practices.

The micro-regime approach diverges from earlier studies examining assessment cultures that have conceptualized and operationalized the phenomena as a singular variable (even though it consisted of several categorical indicators). The conceptualization 'micro-regimes' directs the focus on multidimensional nature of assessment practices including the functions, objects, subjects and tools of assessment. This leads to approaching them as separate variables. Thus, we assume that the micro-regimes of assessment vary in terms of the objectives of assessment – whether the key focus of assessment is related to enhancing equity between children, their wellbeing, their learning, or showing compliance with regulations. We also assume that the micro-regimes of assessment might vary in terms of the intensity of external governance, and in terms of the epistemic community, meaning the network of participants involved in the assessment process (see e.g. Dahler-Larsen, 2021; Jacob et al., 2015).

Our overall aim is to examine whether ECEC teachers' assessment practices can be described by means of micro-regimes of assessment. In particular, we ask, 1) what kinds of micro-regimes of assessment we can identify and 2) what kinds of interlinkages we can find between the background characteristics of ECEC teachers and micro-regimes of assessment.

Method

Research Context

The research was carried out in Finland. In Finland, children start school at the age of seven. Every child under school age is entitled to ECEC, which is organized mostly as a public service by municipalities. Approximately 17% of children attending ECEC are enrolled in private ECEC services (Statistics Finland, 2025). Both private and public ECEC follow the National Core Curriculum of Early Childhood Education (Finnish National Agency for Education, 2022). National-level evaluations are carried out by the Finnish Education Evaluation Centre (FINEEC) (Act 582/2015), which are formative, enhancement-led, and sampling-based.

However, the Finnish ECEC system is decentralized and the ways of organizing ECEC services are in many respects decided locally. This means, for example, that even though municipalities have legal obligation to evaluate the ECEC services in their area, and publish the results, they have autonomy over how they carry out the evaluation. There are no national standards for assessment. Thus, assessment takes many forms. The only form of assessment that is mentioned in the national curriculum guidelines is pedagogical documentation, and it is indeed a prevalent practice (Lindh & Mansikka, 2023). Despite its prevalence, earlier research shows variation in the local assessment practices (Siippainen & Paananen, 2025).

Ethics

According to ethical guidelines set by the Finnish National Board on Research Integrity (2019), no formal ethical approval was required for this study as it was based on voluntary participation, and posed no harm to participants. Before participating in the study, teachers were provided with information on the researchers, on the purpose, and on the content of the research. Teachers were given the choice to participate by agreeing to this information, or to decline participation. Additionally, they could quit the questionnaire at any moment and skip individual questions if they felt uncomfortable answering them. All participants voluntarily took part in the study and gave their informed consent. All survey data were stored on secure servers with access restricted to authorized research personnel. Prior to analysis, responses were anonymized by removing all personally identifiable information to ensure confidentiality and prevent re-identification.

The Sample

The participants of this study were recruited by sending an e-mail invitation to each preschool in Finland, based on the contact details given in the national VARDA database that is maintained by the National Agency of Education. By preschool we mean an ECEC centre that typically caters to children from 10 months of age to the start of primary school at the age of seven. An online version of the questionnaire was sent to a contact person of each centre (usually the preschool director), altogether to 4,104 centres or centres' directors' e-mail addresses with the request to distribute the questionnaire to the preschool teachers in their centre. The sample consists of 1,194 participants in 834 ECEC centres. Most (96%) of the participants worked as ECEC teachers and the remaining four percent worked as special ECEC teachers. They mostly worked in urban municipalities (68%) and less frequently in densely populated municipalities (17%) or rural areas (14%). The age of participants ranged from 22 years to 66 years, with a mean of 45 years ($SD = 11.00$). The teachers' work experience ranged from less than half a year to 42 years ($M = 16.10$, $SD = 11.20$).

Instrument and Design

Micro-regimes of assessment were measured using an online questionnaire that consisted of 164 items pertaining to the teachers' background characteristics and assessment practices. In the study reported in this article, we used 78 items that measured teachers' conceptions of assessment practices concerning the ECEC environment, pedagogical practices and children's skills (Appendix 1). The questionnaire was loosely inspired by the Conceptions of Assessment Abridged (CoA-III-A) questionnaire (Brown, 2006),

which measures teachers' conceptions about four purposes of assessment: assessment holds schools accountable, assessment holds students accountable, assessment informs the improvement of education, and assessment is irrelevant. Also, the items used to capture assessment cultures developed by Furubo and colleagues (Furubo et al., 2002; Jacob et al., 2015) and assessment profiles (Veldhuis & van den Heuvel-Panhuizen, 2014) were used as inspiration. However, they were expanded and modified extensively to fit the context of the Nordic ECEC regime. For example, we did not include any items that would measure student accountability as it did not resonate with the Nordic assessment context. The questionnaire included questions with response options and open-ended items. A list of all original items can be found in the Appendix 1. Participants were instructed to answer the questionnaire keeping in mind the practices of the preschool they currently worked in.

To represent this large set of assessment practice variables more parsimoniously with fewer meaningful dimensions of assessment practices, we employed exploratory factor analysis (EFA) and exploratory structural equation modelling (ESEM). A detailed description of the analysis process can be found in Appendix 1. We found altogether nine teachers' assessment practice factors that could be categorised thematically under three themes. The first set of factors was grouped under the theme "The Purpose of the Assessment" and it covered three factors, which described the extent to which the teachers considered a) children's wellbeing and equality (13 items), b) children's learning and development (6 items), and c) accountability (8 items). The theme of the second set of factors was "Participants of the Assessment". We found two factors which described the extent to which d) parents and children were involved in assessments (6 items) and e) external partners involvement (3 items). Finally, under the third theme, "The Assessment Policies" we included four factors related to the f) level of systematization in assessment practices, meaning how frequent and planned assessment practices were (7 items), g) autonomy of the assessment practices (7 items), h) the amount of external governance (7 items), and i) conflict orientation, meaning the situations in which there are local policies related to assessment but the respondent reports that they do not follow them (5 items). For the main analyses, we computed a factor score variable for each of the nine factors of teachers' assessment practices. Their descriptive statistics and correlations are presented in the supplementary material (Supplementary Table 3).

Analysis

To identify distinct micro-regimes of assessment among teachers based on combinations of the teachers' values in the nine factor score variables of the assessment practices (RQ1), we conducted latent profile analysis (LPA) (for a review, see Spurk et al., 2020; Wang & Hanges, 2011). As a model-based statistical technique, LPA aims to identify groups of teachers that have different configural profiles of the nine assessment practice factors. Here, these groups are called 'micro-regimes'. LPA treats micro-regime membership as an unobserved categorical variable, where its value indicates which micro-regime a teacher belongs to with a certain degree of probability. The LPAs were conducted with the Mplus 8.7 software using the robust maximum likelihood estimation (Muthén & Muthén, 1998–2017).

We estimated various LPA solutions (i.e., number of micro-regimes) for up to six micro-regimes. The appropriate number of micro-regimes was identified and compared with other micro-regime solutions based on the goodness-of-fit of the estimated LPA models, the classification quality of the solution based on entropy (Celeux & Soromenho, 1996), and the interpretability of the solution. We used the Bayesian Information Criterion (BIC), the sample size adjusted Bayesian Information Criterion (aBIC), entropy, the Lo-Mendell Rubin test of the likelihood ratio (LMR) and the Vuong-Lo-Mendell-Rubin test of the likelihood ratio (VLMR) for the statistical evaluation of the best solution (Nylund et al., 2007; Spurk et al., 2020). Moreover, as our sample size is large ($N = 1,194$), very small data-specific micro-regimes without practical significance that were unlikely to be replicated in future studies could have emerged. Therefore, the micro-regime solutions that resulted in the extraction of any micro-regime that included < 5% percent of all teachers were not considered (Marsh et al., 2009). In addition, we qualitatively assessed that the micro-regimes identified are meaningful, interpretable, and theoretically sound.

The relationship of teachers' background characteristics with the teachers' membership in micro-regimes of assessment was investigated by using multinomial logistic regression analysis with Stata 17 software (RQ2). This method was chosen as our outcome variable, the variable indicating the most likely micro-regime membership for each teacher, is a categorical variable. Teachers' induction phase (coded as 0 = six years or more, 1 = 5 years or less) and level of education (coded as 1 = university (the reference category), 2 = university of applied sciences, 3 = older ECEC teacher qualification, 4 = no qualification) served as our independent variables whereas urbanicity of municipality (1 = semi-urban (the reference category), 2 = urban, 3 = rural) was adjusted to account for differences in the geographical location of the ECEC centres.

We present the results as average marginal effects (*AMEs*). What follows is that we predict each micro-regime of assessment one at a time, with the others serving as the reference micro-regimes, one at a time (e.g., Conflicted versus Technocratic-Enthusiasts, Enabling, and Fragmented). *AMEs* measure the average change in predicted probability of belonging to a micro-regime for a certain change in the independent variable of interest when all other variables in the model are held constant at their respective values (Breen et al., 2018; Mize, 2019). *AMEs* are obtained by calculating a predicted probability for every teacher in the sample, after which these effects are averaged (Mize, 2019). The advantage of displaying *AMEs* is that they offer easily interpretable effect size estimates: multiplying the value of an *AME* by a hundred indicates how many percentage points, on average, the probability of belonging to a specific micro-regime increases or decreases by a certain increase in the independent variable (Breen et al., 2018). For statistical inference, we estimate 95 percent confidence intervals (*CI*) for the *AMEs*. A *CI* not including zero is considered as an indication of the statistical significance of the associations.

Some of the teachers in our sample worked in the same ECEC centres. Therefore, the assessment practices of the teachers working within the same centre are likely to be more similar due to the local governing of these practices. This clustering of the data was considered in the analyses by estimating cluster-robust standard errors.

Results

Micro-regimes of Assessment

Micro-regimes of assessment were examined based on the nine teachers' assessment practice factor scores, which were categorised into the themes of the Purposes of the Assessment, the Participants of the Assessment, and the Assessment Policies. The goodness-of-fit indices of the LPA models with up to six micro-regime solutions are shown in Table 1. The BIC and aBIC values guided us to choose either 3-micro-regimes solution or 5-micro-regimes solution, which had lower BIC and aBIC values than alternative solutions. Simultaneously, LMR and VLMR tests advocated the 3-micro-regimes solution, as the *p*-values were under .05 while 2-micro-regimes solution (*p* values > .05) indicated that the addition of one more micro-regime to the current solution improves the model fit. Over .70 entropy, on the other hand, indicated that micro-regimes sufficiently differ from each other in all six micro-regime solutions (Celeux & Soromenho, 1996). Respectively, we evaluated that the solutions of more than four micro-regimes did not add substantial value. The 5-micro-regimes solution only divided one of the four micro-regimes into two rather similar groups, thus only showing differences in their overall mean levels. Additionally, in 5-micro-regimes solution, three of the groups included under 5% of all teachers (see Marsh et al., 2009). The groups in a 3-micro-regimes solution differed only in terms of the level of responses (high, medium, low) but not in the qualitative pattern of responses across the variables. This suggested that the micro-regimes in this solution represented variations in intensity rather than different types of micro-regimes. In addition, one of the micro-regimes included under 5% of all teachers (see Marsh et al., 2009). We chose the 4-micro-regimes solution as the final solution based on the overall qualitative assessment of the content of the suggested regimes. In this solution, the average probabilities of assigning respondents to a profile were relatively high, with a range of .83–.92. Based on the factors that constitute these groups, we named the micro-regimes of assessment as follows: 1 = Technocratic-enthusiast regime, 2 = Fragmented regime, 3 = Enabling regime and 4 = Conflicted regime (Figure 1, Table 2). When naming the regimes, we aimed at

describing the regime the teacher belonged to rather than individual respondents.

Technocratic-enthusiast regime ($n = 769, 64\%$): Teachers belonging to this micro-regime exhibited above-average scores on external governance of assessment and systemization of assessment. This regime was thus the most heavily governed. They generally scored close, but slightly above average, in all measures with the exception of a low score on conflict orientation. This we interpreted as meaning a strong level of compliance. They reported using assessment for a wide variety of goals, including for assessing children’s learning and development, which was not as common among the teachers in the other micro-regimes. This micro-regime constituted the majority of our sample. The technocratic-enthusiast regime describes a regime that is focused on technocratic values such as evidence-based decision making, innovation and progress, and a focus on human capital development, but that is governed by creating enthusiasm rather than by coercion.

Fragmented regime ($n = 233, 21\%$): Teachers in this micro-regime scored around the average on most of the assessment variables, except for a high score on conflict orientation. Moreover, in this micro-regime the assessment teachers scored lower than average on systematization of assessment and external governance. Items related to conflict orientation were related to either uncertainty about the assessment policies or being non-compliant. As the external governance measured low, we interpreted conflict in this micro-regime most likely relating to uncertainty about the policies and the feeling of not being able to comply with even the sparse existing policies rather than resisting the policies. The fragmented regime describes a regime that does not provide systematic support, for example in the form of assessment policies, but rather provides more abstract goals for assessment that teachers are not always sure how to reach.

Enabling regime ($n = 107, 10\%$): Teachers belonging to this micro-regime were subjected to less external governance than average. They did not use assessment for accountability purposes, nor did the assessment in this micro-regime focus on children’s individual learning and development but rather on wellbeing and equity. Participation orientation (children and parents) was higher than average while participation of external partners was lower. Conflict orientation scored low. The enabling regime seems to be the closest to the ‘Nordic’ assessment regime identified by earlier assessment culture studies, that does not focus on assessing children and that is particularly participatory.

Conflicted regime ($n = 65, 5\%$): Teachers in this micro-regime held an ambiguous orientation to assessment. They tended to view assessment more negatively and utilized it less frequently. In addition, they scored low on autonomy of assessment and reported least often that the purpose of the assessment was to support children’s equity and wellbeing. Conflicted regime thus describes a regime that seems somewhat coercive in a way that teachers own beliefs and values do not align with municipal-level policies.

Figure 1

Micro-Regimes of Assessment Considering the Purposes, Participants, and Policies of Assessment

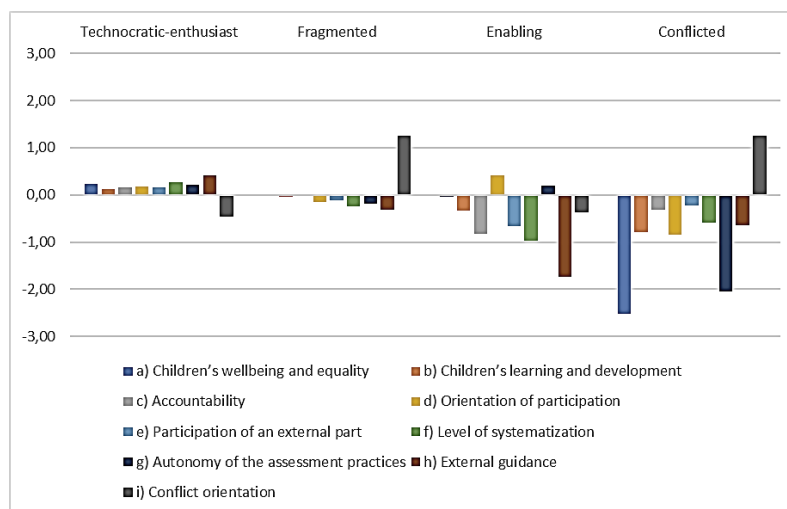


Table 1
Model Fit Indices for the Estimated Micro-Regimes

Number of Micro-Regimes	BIC	aBIC	Entropy	LMR <i>p</i> -value	VLMR <i>p</i> -value
1	23978.23	23806.71	-	-	-
2	23826.82	23623.54	.91	.25	.24
3	23712.37	23477.32	.88	.03	.03
4	23663.61	23396.80	.81	.37	.36
5	23625.18	23326.60	.80	.30	.30
6	23612.94	23282.60	.81	.54	.53

Individual Level Predictors of the Micro-Regime Membership

Our second research question focused on investigating teachers’ background characteristics as predictors of the membership in micro-regimes. Results of the multinomial logistic regression analyses are displayed in Table 3. Our results showed that being in the induction phase of one’s career was associated with belonging to the conflicted micro-regime. Teachers having worked five years or less in the field of ECEC were five percent more likely to be members of the conflicted regime compared to teachers having more work experience in the ECEC field. Work experience did not predict the membership in the other three assessment regimes.

The results further revealed that the level of education of the teachers was associated with being in the enabling regime in that teachers having a qualification from a kindergarten teacher college were five percent less likely to belong to the enabling regime compared to teachers having a university-level qualification. The level of education did not differentiate teachers in terms of the other three micro-regimes. Thus, these individual level characteristics seemed to play very little role in how teachers responded.

Table 2
Assessment Practice Factors’ Standardized Conditional Means (M) and Standard Errors (S.E.) Within Assessment Regimes Based on the Final Estimated Latent Profile Analysis Solution

Factors of assessment practices	Technocratic-enthusiast		Fragmented		Enabling		Conflicted	
	<i>M</i>	<i>S.E.</i>	<i>M</i>	<i>S.E.</i>	<i>M</i>	<i>S.E.</i>	<i>M</i>	<i>S.E.</i>
Purposes of the Assessment								
a) Children’s wellbeing and equality	0.23***	0.05	-0.02	0.15	-0.04	0.10	-2.52***	0.52
b) Children’s learning and development	0.13**	0.04	-0.04	0.11	-0.33**	0.13	-0.78***	0.24
c) Accountability	0.16***	0.04	-0.01	0.08	-0.83***	0.17	-0.31	0.17
Attendants of the Assessment								
d) Orientation of participation	0.17***	0.05	-0.16	0.09	0.42*	0.17	-0.85**	0.32
e) Participation of an external part	0.16***	0.05	-0.12	0.08	-0.66***	0.10	-0.23	0.18
Assessment policies								
f) Level of systematization	0.27***	0.05	-0.24***	0.07	-0.98**	0.31	-0.58*	0.24
g) Autonomy of the assessment practices	0.21***	0.04	-0.18	0.11	0.19	0.10	-2.05***	0.60
h) External guidance	0.42***	0.05	-0.31***	0.07	-1.74***	0.14	-0.64*	0.28
i) Conflict orientation	-0.47***	0.05	1.26***	0.09	-0.37***	0.10	1.26***	0.23

****p* ≤ .001, ***p* < .01, **p* < .05

Table 3
Associations of ECEC Teachers’ Background Characteristics on the Probability of Assessment Regime Membership. Predicted Probabilities, Average Marginal Effects (AME), and their 95% Confidence Intervals (CI) are Displayed

Background characteristics	Technocratic-enthusiast (<i>n</i> = 769)		Fragmented (<i>n</i> = 233)		Enabling (<i>n</i> = 107)		Conflicted (<i>n</i> = 65)	
	Predicted probability	AME (95% CI)	Predicted probability	AME (95% CI)	Predicted probability	AME (95% CI)	Predicted probability	AME (95% CI)
Urbanicity of municipalities								

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Semi-urban	62.95	–	18.71	–	10.39	–	7.94	–
Urban	66.81	-3.86 (-11.38; 3.66)	20.55	1.84 (-4.10; 7.78)	7.39	-3.00 (-7.58; 1.57)	5.25	-2.70 (-6.82; 1.43)
Rural	60.42	-6.39 (-14.80; 2.02)	17.61	-1.10 (-8.86; 6.65)	17.03	6.64 (-0.33; 13.62)	4.93	-3.01 (-8.12; 2.10)
Work experience in ECEC								
6 years or more	66.18	–	19.46	–	9.74	–	4.62	–
5 years or less	61.76	-4.43 (-11.22; 2.37)	20.86	1.40 (-4.17; 6.96)	7.88	-1.63 (-5.62; 1.92)	9.50	4.88 (0.63; 9.14)
Educational qualification								
University	65.04	–	18.82	–	11.44	–	4.70	–
University of Applied Sciences	62.13	-2.91 (-9.76; 3.94)	23.18	4.37 (-1.28; 10.01)	9.81	-1.62 (-5.89; 2.64)	4.87	0.17 (-2.74; 3.07)
Older qualification	72.34	7.30 (-0.52; 15.11)	14.51	-4.30 (-10.36; 1.76)	6.52	-4.91 (-9.46; -0.36)	6.62	1.92 (-2.38; 6.22)
No qualification	61.61	-3.43 (-15.03; 8.17)	19.87	1.05 (-8.27; 10.36)	7.14	-4.30 (-10.86; 2.27)	11.38	6.68 (-0.76; 14.11)

Note. – = reference category in the analyses

Discussion

In this article, we introduced the concept of micro-regimes of assessment. We defined micro-regimes of assessment as a set of rules, practices, or arrangements related to assessment at a localized level. We suggest that by examining these micro-regimes by focusing on both local level assessment policies that vary within a national context and group level practices we can have a more nuanced understanding of assessment in ECEC. This is especially important as we seem to live in an era of assessment where assessment has an intensified role in the everyday lives of people. Earlier studies examining assessment cultures have operationalized the phenomena as a singular variable, leading to normative interpretations of assessment cultures being more or less ‘matured’ (Furubo et al., 2002). While this has been a necessary step in understanding the development of the governing contexts of assessment, conceptualizing assessment as embedded in assessment regimes directs the focus on multidimensional nature of assessment practices that vary locally in terms of purposes, participants, and how they are governed.

In this study, we bridged the discussions related on wider ECEC assessment cultures and teacher assessment profiles with the help of the concept micro-regimes of assessment. This allowed us to identify four micro-regimes of assessment that were: 1) Technocratic-enthusiast, 2) Fragmented, 3) Enabling, and 4) Conflicted. The four distinct micro-regimes had clearly different scores on the nine underlying factors that were related to the purposes of the assessment, the participants of the assessment, and the policies of assessment. The technocratic-enthusiast regime was most heavily and systematically governed still maintaining a sense of teacher autonomy. The other micro-regimes included more sparse external guidance related to assessment. By painting a more nuanced picture of how different assessment cultures manifest in varying ways, micro-regimes approach helped us challenging the narrative of a unanimous ‘Nordic’ assessment regime that does not focus on assessing children or that is particularly participatory. This further justifies the increasing interest in local (yet nationally and internationally embedded) practices (e.g., Siippainen et al., 2023). Based on our findings, not focusing on assessing children and participatory nature of assessment that are characteristics typically connected to the ‘Nordic’ assessment regime, were not shared attributes of actual assessment practices. This raises questions about whose voices are included in assessment processes, and how well these well-intended principles become materialised in actual practices.

Even though we did not find particularly strong elements of performative assessment regimes such as research has identified in the U.S. (Bassok et al., 2016); and England (Roberts-Holmes & Bradbury, 2016) different forms of assessment for monitoring young children’s development and learning were used. Some forms of accountability practices were identified in technocratic-enthusiastic regimes. Instead of juxtaposing performative, liberal assessment regimes with social democratic assessment regimes, it might be more fruitful to focus on manifestations of hybrid forms of local assessment regimes. The concept of

micro-regimes of assessment challenges the assumption of homogeneity by showing how hybrid and context-sensitive arrangements emerge at the local level. We assume that similar types of regimes found in Finland could be identified in other decentralized European contexts, such as Denmark or Sweden but perhaps also in more fragmented ECEC systems with a low level of central governance. Applying this lens beyond the Nordic context invites comparative research into how micro-level governance and practices shape assessment cultures in both decentralized and centralized systems.

Work experience and education were connected to the likelihood of micro-regime membership – the orientation towards assessment practices. When having less work experience, the low level of external governance might produce ambivalence and inability to set up functioning group-level practices. By contrast, when having more experience, the low level of external governance might enable setting up democratic and situationally emerging assessment practices as the enabling micro-regime shows. In addition, in our study, contrary to earlier examinations in comprehensive education (Bonner, 2016; Brown, 2006), the age of the children with whom the educators worked, was not connected to micro-regimes. Considering the results of earlier studies, the role of work experience and education in assessment practices is not surprising. Yet, as our results show, they explain rather small amount of the variation between the assessment regimes. This indicates that contextual aspects might influence the orientation more than individual characteristics of educators. Local identification of micro-regimes would provide insights for policymakers in designing professional development programs that align with local assessment needs. By identifying local micro-regimes of assessment, local actors might be able to take more conscious stance in relation to assessment policies and practices.

There are limitations in our study. First, it should be noted that the study is based on a local sample: all the teachers worked in Finland. It would be interesting to explore whether the same measurement instrument works in other contexts and to what extent the number and the characteristics of micro-regimes vary depending on the country context. Second, although the teachers in our sample were quite representative of the population of ECEC teachers in Finland, it is possible that participating teachers could have had stronger views, either positive or negative, on assessment. Third, the study was retrospective and based on self-reported practices. Individuals may struggle to accurately remember their assessment practices. Given that this study introduced the concept of micro-regimes of assessment and employed Latent Profile Analysis (LPA) to empirically identify distinct assessment patterns, future research could build on this conceptual and methodological groundwork more explicitly. For example, the conceptualisation of micro-regimes can inform mixed-method designs that combine quantitative approaches (such as LPA) with ethnographic or interview-based inquiry. This would enable researchers to link statistically derived profiles with the lived practices, institutional conditions and constitutive effects of micro-regimes. Similarly, longitudinal designs could trace how micro-regimes evolve over time, and how policy developments or organisational changes shape these trajectories. In addition to that, in future studies it will be important to extend this study to other countries as they might lead to getting a more robust view of micro-regimes of assessment. Understanding the constitutive effects of micro-regimes on educators work and experiences of children would require further analysis.

In sum, our study provides a new way to examine the variation in assessment practices at a local level within ECEC. This framework allows moving beyond national or cultural assessment regimes, emphasizing the unique and context-sensitive dynamics of assessment practices. The variation in assessment regimes relates to the aims of assessment, institutional arrangements in the governing, and what kind of epistemic community is involved in evaluation processes. The variation happens, in addition to the national level, at the local level as well as Urban and colleagues (2023) have tentatively suggested, and Siippainen and colleagues (2023) have shown in a qualitative case study. On one hand, the differences between the micro-regimes affect educators' ability to enact democratic and participatory practices, which are central to social justice in ECEC. On the other hand, local variation can allow assessment approaches to be adapted to local needs. Maintaining diversity and pluralism are essential for fairness and inclusion. Grasping these aspects of evaluation regimes requires new instruments, and perhaps a paradigm, for researching the phenomena.

Declarations

Authors' Declarations

Acknowledgements: We'd like to thank the members of Assessment and Evaluation in the Era of Datafication research project, Anna Siippainen, Antti Paakkari and Hanna Toivonen in their contribution in the data collection and interpretation of the results.

Authors' contributions: M.P. was responsible for designing the study, leading the conceptual development, and defining the contribution. E.L. contributed to designing the instrument, carried out the data collection, and conducted the analysis. E.R. participated in planning the study design and supported the analysis. All authors contributed to interpreting the results and to writing and editing the manuscript.

Competing interests: The authors declare that they have no competing interests.

Funding: The project was funded by Emil Aaltonen foundation (Grant number 200257P). The funding body did not contribute to the design, execution, or reporting of the study.

Ethics approval and consent to participate: According to ethical guidelines provided by Finnish National Board on Research Integrity, no formal ethical approval was required for this study as it was based on voluntary participation, and posed no harm to participants. Participants were informed about the purpose of the study, their right to withdraw at any time, and the principles governing the storage and use of personal data, and they provided their consent for the use of their data.

Publisher's Declarations

Editorial Acknowledgement: The editorial process of this article was completed under the editorship of Dr. Mesut Saçkes through a double-blind peer review with external reviewers.

Publisher's Note: Journal of Childhood, Education & Society remains neutral with regard to jurisdictional claims in published maps and institutional affiliation.

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Appendix 1: Supplementary Material for Assessment in Early Childhood Education: Micro-regimes Perspective

Factorial Validity of 'Assessment in Early Childhood Education and Care Questionnaire' [AECEQ]

Factors of Teachers' Assessment Practices

In what follows, we will introduce the exploratory factor analysis carried out for our data collected as part of the project [anonymized] that aimed to examine Micro-regimes of assessment in early childhood education.

At the time of data collection, there were no ready-made measures available to study assessment in institutional early childhood education and care (ECEC). Our intention was to develop a set of instruments to study variation in assessment practices in the everyday life of ECEC. Developed statements considered five different categories of assessment: assessment of the preschool environment, assessment of the pedagogical practices, assessment of the child's skills, assessment of the parents' satisfaction and assessment of the economy. The statements of the first three categories are analysed in this article and represented in the supplement table 1. The statements T1e–T8e and P1e–P12e consider the teachers' conceptions about the assessment of the preschool environment. The statements T9p–T16p and P13p–P24p reflect on the assessment of the pedagogical practices. Finally, the statements T17c–T25c, A8c–A14c and P25c–P39c take into account the assessment of the child's skills. In addition to those statements A1c–A7c consider attendants to both assessment of the preschool environment and assessment of the pedagogical practices.

For each statement, the teacher was asked to evaluate how well the statement describes assessment in his or her workplace. Response scale ranged from 1 = strongly disagree to 5 = strongly agree. The questionnaire was piloted with 27 ECEC teacher before the actual data collection. Based on the piloting the statements were modified for the actual data collection.

Exploratory factor analysis (EFA) and exploratory structural equation modelling (ESEM) (Asparouhov & Muthén, 2009; for a review, see Marsh et al., 2014) were utilized to identify latent structure of the teachers' conceptions of assessment practices and to form the factor score variables for further analysis. We complemented our EFAs by using ESEM instead of traditional structural equation modelling as ESEM allows to explore various EFA-based factor solutions in more detail by utilizing goodness-of-fit indices and including correlated residual variances. Both tools have previously been possible only within traditional structural equation modelling framework that can include only latent variables based on confirmatory factor analysis (CFA).

The EFA and ESEM were conducted with Mplus 8.7 software using the robust maximum likelihood estimation and GEOMIN-rotation (Muthén & Muthén, 1998-2017). The robust maximum likelihood estimation was applied because of the nonnormality of the data (Asparouhov & Muthén, 2009). GEOMIN as an oblique rotation was chosen as it allows the factors to correlate with one another and thereby accounts for the interlinkages between the with the assessment practice factors. As our data was hierarchical (teachers, preschools, municipalities), we used the COMPLEX option in all analyses, using the preschools as the cluster. In this survey, 1–8 teachers participated from individual preschool. Slightly less than half of the teachers ($n = 568$, 47.6%) worked in preschool with more than one participant.

The EFA analysis of teachers' assessment practice factors was carried out separately for tasks of the assessment T1e–T25c, attendants of the assessment A1pe–A14c and policies of assessment P1e–P39c (Supplement Table 1). We used multiple criteria to identify the final factor solution: solution should be 1) substantively meaningful and 2) sufficient regarding the parallel analysis (Horn, 1965) and statistical fit indices (see later). Additionally, 3) every statement should have stronger than .32 factor loading at least in one of the teachers' assessment practice factors. If any of the statements did not achieve a factor loading above this threshold for any of the factors, the analysis was repeated without that statement. Abovementioned exclusions were made only one item at the time. Conversely, if the statement cross-

loaded and received a factor loading over .32 on two or more factors, the statement was only included in the analysis if the cross-loading was substantially justified.

The X^2 -test, the comparative fit index (CFI), the Tucker-Lewis index (TLI), the root mean square error of approximation (RMSEA), and the standardized root mean square residual (SRMR) to examine the fit of the statistical models to the data. None of the factor solutions fully met the model fit thresholds of non-significant p value for the X^2 -test ($p \geq .05$), $CFI \geq .90$, $TLI \geq .90$, $RMSEA < .08$ and $SRMR < .10$. ESEM analyses were used to refine the factor solutions by utilising the information provided by the modification indices (MI) on the unexplained covariation between the residuals of the statements (later the residual correlations). Large residual correlations between statements were released for factor solution estimation if they were substantively justified and improved sufficiently the fit of the model.

In the first set of EFA analyses, which focused on the purposes of assessment, from the 25 items emerged three factors: a) children's wellbeing and equality (13 items), b) children's learning and development (6 items), and c) accountability being an important aim of the assessment they had used in their child group (8 items). Supplement table 2 shows that two items (T24p, T25c) were included in the solution even though they cross-loaded both the children's wellbeing and equality factor and the children's learning and development factor. The items were conceptually relevant to both factors. In addition, based on MI, a residual correlation between items, T8e and T16p were excluded for the final factor solution, because it was assessed that the wording of those items influenced the results unintended way. Unlike the other items, T8e and T16p concerned adults' wellbeing but shared the term '*toiminta*' or '*toimintaympäristö*' with other items. After these modifications, the model fit indices for the final three factors' solution of teachers' conceptions of assessment purposes were $X^2/df = 7.74$, $p < .001$, $RMSEA = .08$, $CFI = .80$, $TLI = .73$, $SRMR = .05$.

Second set of EFA analyses considered attendants of the assessment. Five items were excluded from the analysis one-by-one in the following order: A8c, A9c, A14c, A13c and A1pe. Most of the items were excluded because those items did not load any of the factors with at least a factor loading of .32. Item A9c was excluded because of the high factor loading. Item A9c exhibited exceptionally high loading of 1.33 on what was initially identified as the third factor. This loading is substantially higher compared to the loadings of other items on the same factor, which were all below 0.15. The disproportionate loading of item A9c effectively caused it to dominate the third factor, overshadowing the contributions of other items. As a result, the factor primarily reflected the variance of Item A9c rather than a coherent underlying construct represented by multiple items. Thus, it suggests that the third factor did not represent a meaningful dimension of the attendants of assessment. Finally, from nine items considering attendants of the assessment we identified two factors, which described to the extent d) parents and children were involved based on different forms of assessments (6 items) and e) external partners were involved (3 items). Model fit indices were as follows: $X^2/df = 11.84$, $p < .001$, $RMSEA = .11$, $CFI = .92$, $TLI = .84$, $SRMR = .04$.

At the beginning of third set of EFA analyses, 39 items regarding policies of the assessment, were examined. Of these items, 15 were excluded from the analysis one-by-one in the following order: P39c, P24p, P32c, P34c, P35c, P37c, P25c, P26c, P21p, P12e, P19p, P20p, P33c, P10e and P22p because those (except item P10) did not load to any of the factors. Item P10 was excluded because of the cross-loading to first (.45) and second (.45) factors. The cross-loading was not conceptually justifiable. The remaining 24 items formed four factors, which related to the f) level of systematization in assessment practices (7 items), meaning how frequent and planned assessment practices were (7 items), g) autonomy of the assessment practices (7 items), h) the amount of external governance (7 items), and i) conflict orientation, meaning the situations in which there are local policies related to assessment but the respondent reports that they do not follow them (5 items). In the final factor solution two items (P16p, P17p) cross-loaded and were included both into the level of systemization factor and the external guidance factor (Supplement Table 2) as they were conceptually meaningful for both factors. In addition, a residual correlation between similarly designed items P15p and P28c were released, leading to the following model fit indices: $X^2/df = 5.77$, $p < .001$, $RMSEA = .06$, $CFI = .84$, $TLI = .76$, $SRMR = .04$. Eventually, the nine factors representing assessment practices in

ECEC were computed as factor score variables and used as the indicator variables of the latent profile analysis in the article. Their descriptive statistics and correlations are presented in Supplement Table 3.

Supplement Table 1

Assessment Practices Items Concerning Preschool Environment, Pedagogical Practices and Children's Skills

Purposes of the Assessment	
T1e	demonstrate to the manager, administration, or parents that our environment is of high quality
T2e	have influence within the organization (i.e., the municipality/private ECEC center)
T3e	ensure meeting the objectives defined somewhere else than in the National Core Curriculum for ECEC
T4e	ensure that the environment cater children's individual needs
T5e	ensure that the environment responds to the interests of children
T6e	ensure that the environment promotes equity between children
T7e	ensure that the environment supports children's health, wellbeing, and safety
T8e	ensure that the environment supports educators' health, wellbeing, and safety
T9p	demonstrate to the manager, administration, or parents that our pedagogical practices are of high quality
T10p	have influence within the organization (municipality/private ECEC centre)
T11p	ensure meeting the objectives defined somewhere else than in the National Core Curriculum of ECEC
T12p	ensure that the assessment of pedagogical practices cater children's individual needs
T13p	ensure that the assessment of pedagogical practices responds to the interests of children
T14p	ensure that the pedagogical practices promote equity between children
T15p	ensure that the pedagogical practices support children's health, wellbeing, and safety
T16p	ensure that the pedagogical practices support educators' health, wellbeing, and safety
T17c	demonstrate to the manager, administration, or parents that our pedagogical practices are of high quality
T18c	have influence within the organization (i.e., the municipal/private ECEC centre)
T19c	demonstrate or recognize individual child's needs of support
T20c	ensure that children's learning and development meet the objectives defined elsewhere (e.g. by child welfare clinic)
T21c	ensure that children's learning and development meet the objectives defined by municipality/ECEC centre
T22c	ensure that children's learning and development meet the objectives defined by educators of the group
T23c	ensure that individual children's learning and development meet the objectives set together with parents
T24c	ensure equity between children
T25c	ensure the realization of children's health, wellbeing, and security
Attendants of the Assessment	
A1pe	...parents participate in producing the information for assessment
A2pe	...parents participate in interpreting the information for assessment
A3pe	...children participate in producing the information for assessment
A4pe	...children participate in interpreting the information for assessment
A5pe	...leader of the ECEC centre participates to the assessment
A6pe	...the assessment information of the pedagogical practices produced by our group, is used by external parties
A7pe	...the assessment information of the environment produced by our group, is used by external part of the group
A8c	We assess children only as part of making the child's individual ECEC plan
A9c	...parents participate in producing the information for assessment
A10c	...parents participate in interpreting the information for assessment
A11c	...children participate in producing the information about themselves
A12c	...children participate in interpreting the information about themselves
A13c	...leader of the ECEC centre participates in the assessment
A14c	...other party participates regularly to the assessment of children
Policies of the Assessment	
P1e	Assessment of the physical environment is regular part of the everyday life of our group
P2e	In our group, we independently decide on the assessment practices
P3e	I do not know where the decisions related to assessing the environment have been made
P4e	The assessment practices related to assessing the environment has been decided jointly in the ECEC centre
P5e	The assessment practices related to assessing the environment has been decided by the administration
P6e	Our organization has policies for the assessment of the environment, but they are not enacted.
P7e	Our group has an annual plan for the assessment of the environment
P8e	In our group, we do short-term planning for the assessment of the environment
P9e	Mainly, we evaluate the environment in informal discussions between educators
P10e	I'm satisfied with the practices related to assessment of the environment in our group
P11e	Develop the environment among our own group

P12e	Develop the environment based on external views
P13p	Assessment of pedagogy is a regular part of the everyday life of our group
P14p	In our group, we independently decide on the practices related to the assessment of pedagogy
P15p	I do not know where the decisions related to assessing the pedagogy have been made
P16p	The assessment practices related to assessing pedagogy has been decided jointly in the ECEC centre
P17p	The assessment practices related to assessing the environment has been decided by the administration
P18p	Our organization has policies for the assessment of pedagogy, but we do not follow them.
P19p	Our group has an annual plan for the assessment of pedagogy
P20p	In our group, we do short-term planning for the assessment of pedagogy
P21p	Mainly, we assess pedagogy in informal discussions between educators
P22p	I'm satisfied with the assessment practices related to pedagogy in our group
P23p	Develop the pedagogical practices among our own group
P24p	Develop the pedagogical practices based on external views
P25c	In our group, we avoid assessing children's skills
P26c	Assessing children's skills is a regular part of the everyday life of our group
P27c	In our group, we independently decide on the child assessment practices
P28c	I do not know where the decisions on child assessment practices used in our group have been made
P29c	The assessment practices related to child assessment have been decided jointly in the ECEC centre
P30c	The assessment practices related to assessing the environment has been decided by the administration
P31c	Our organization has policies for child assessment, but we do not follow them.
P32c	Our group has an annual plan for child assessment
P33c	In our group, we do short-term planning related to child assessment
P34c	We assess children only part of making child's individual ECEC plan
P35c	Mainly, we assess children in informal discussions between educators
P36c	In our group, we use assessment methods developed elsewhere (e.g. standardized tests) for assessing children's skills
P37c	I'm satisfied with the assessment practices related to child assessment in our group
P38c	Develop the pedagogical practices among our own group
P39c	Develop the pedagogical practices based on external views

e = statement consider assessment information of the preschool environment, p = statement consider assessment information of the pedagogical practices, c = statement consider assessment information of the children and pe = statement consider assessment information of both the pedagogical practices and the preschool environment

Supplement Table 2

Factors Of Assessment Practices

Purposes of the Assessment		Factor 1	Factor 2	Factor 3
Factor 1: Children's wellbeing and equality (a)				
T5e	ensure that the environment responds to the interests of children	0.72	0.02	-0.09
T14p	ensure that the pedagogical practices promote equity between children	0.72	0.05	0.14
T7e	ensure that the environment supports children's health, wellbeing, and safety	0.70	-0.01	-0.09
T15p	ensure that the pedagogical practices support children's health, wellbeing, and safety	0.70	0.00	0.10
T6e	ensure that the environment promotes equity between children	0.69	0.13	-0.01
T13p	ensure that the assessment of pedagogical practices responds to the interests of children	0.67	0.01	0.05
T12p	ensure that the assessment of pedagogical practices cater children's individual needs	0.55	-0.05	0.09
T24c	ensure equity between children	0.51	0.00	0.39
T25c	ensure the realization of children's health, wellbeing, and security	0.51	-0.02	0.34
T4e	ensure that the environment cater children's individual needs	0.50	-0.06	-0.07
T8e	ensure that the environment supports educators' health, wellbeing, and safety	0.50	0.23	-0.04
T16p	ensure that the pedagogical practices support educators' health, wellbeing, and safety	0.44	0.28	0.07
T19c	demonstrate or recognize individual child's needs of support	0.38	-0.14	0.31
Factor 2: Children's learning and development (b)				
T22c	ensure that children's learning and development meet the objectives defined by educators of the group	0.01	0.14	0.71
T21c	ensure that children's learning and development meet the objectives defined by municipality/ECEC centre	0.00	0.21	0.68
T23c	ensure that individual children's learning and development meet the objectives set together with parents	0.27	0.00	0.60
T20c	ensure that children's learning and development meet the objectives defined elsewhere (e.g. by child welfare clinic)	0.01	0.26	0.53
T24c	ensure equity between children	0.51	0.00	0.39
T25c	ensure the realization of children's health, wellbeing, and security	0.51	-0.02	0.34
Factor 3: Accountability (c)				

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T10p	have influence within the organization (i.e., the municipality/private ECEC center)	0.09	0.72	-0.01	
T17c	demonstrate to the manager, administration, or parents that our pedagogical practices are of high quality	-0.03	0.68	0.21	
T9p	demonstrate to the manager, administration, or parents that our pedagogical practices are of high quality	0.08	0.67	0.04	
T18c	have influence within the organization (i.e., the municipality/private ECEC center)	-0.02	0.66	0.15	
T2e	have influence within the organization (i.e., the municipality/private ECEC center)	0.05	0.65	-0.05	
T1e	demonstrate to the manager, administration, or parents that our environment is of high quality	0.17	0.60	-0.04	
T3e	ensure meeting the objectives defined somewhere else than in the National Core Curriculum for ECEC	0.13	0.36	0.03	
T11p	ensure meeting the objectives defined somewhere else than in the National Core Curriculum for ECEC	0.16	0.33	0.06	
Attendants of the Assessment		Factor 1	Factor 2		
Factor 1: Orientation to participation (d)					
A12c	...children participate in interpreting the information about themselves	0.84	0.00		
A11c	...children participate in producing the information about themselves	0.73	-0.02		
A4pe	...children participate in interpreting the information for assessment	0.69	0.05		
A3pe	...children participate in producing the information for assessment	0.60	0.03		
A10c	...parents participate in interpreting the information for assessment	0.50	-0.02		
A2pe	...parents participate in interpreting the information for assessment	0.37	0.26		
Factor 2: Participation of an external partners (e)					
A7pe	...the assessment information of the environment produced by our group, is used by external part of the group	-0.02	0.95		
A6pe	...the assessment information of the pedagogical practices produced by our group, is used by external parties	0.02	0.87		
A5pe	...leader of the ECEC centre participates to the assessment	0.18	0.33		
Policies of the Assessment		Factor 1	Factor 2	Factor 3	Factor 4
Factor 1: Level of systematization (f)					
P6e	Our organization has policies for the assessment of the environment, but they are not enacted	0.80	-0.04	-0.06	0.16
P5e	The assessment practices related to assessing the environment has been decided by the administration	0.69	-0.04	0.10	0.16
P7e	Our group has an annual plan for the assessment of the environment	0.62	-0.12	0.01	0.01
P8e	In our group, we do short-term planning for the assessment of the environment	0.50	0.18	-0.01	0.00
P16p	The assessment practices related to assessing pedagogy has been decided jointly in the ECEC centre	0.43	0.04	0.33	-0.08
P3e	I do not know where the decisions related to assessing the environment have been made	-0.37	-0.19	0.03	0.26
P17p	The assessment practices related to assessing the environment has been decided by the administration	0.36	0.04	0.50	0.05
Factor 2: Autonomy of the assessment practices (g)					
P11e	Develop the environment among our own group	0.07	0.57	0.01	0.00
P1e	Assessment of the physical environment is regular part of the everyday life of our group	0.25	0.53	-0.04	0.01
P2e	In our group, we independently decide on the assessment practices	-0.10	0.52	-0.12	0.05
P23p	Develop the pedagogical practices among our own group	-0.01	0.49	0.06	-0.21
P38c	Develop the pedagogical practices among our own group	-0.06	0.40	0.14	-0.17
P13p	Assessment of pedagogy is a regular part of the everyday life of our group	0.07	0.39	0.06	-0.25
P9e	Mainly, we evaluate the environment in informal discussions between educators	-0.15	0.37	0.02	0.02
Factor 3: External guidance (h)					
P30c	The assessment practices related to assessing the environment has been decided by the administration	-0.01	-0.03	0.73	0.01
P17p	The assessment practices related to assessing the environment has been decided by the administration	0.36	0.04	0.50	0.05
P27c	In our group, we independently decide on the child assessment practices	0.07	0.23	-0.44	0.01
P29c	The assessment practices related to child assessment have been decided jointly in the ECEC centre	0.24	-0.01	0.38	-0.15
P14p	In our group, we independently decide on the practices related to the assessment of pedagogy	-0.05	0.30	-0.37	-0.04
P36c	In our group, we use assessment methods developed elsewhere (e.g. standardized tests) for assessing children's skills	-0.09	0.03	0.36	-0.05
P16p	The assessment practices related to assessing pedagogy has been decided jointly in the ECEC centre	0.43	0.04	0.33	-0.08
Factor 4: Conflict orientation (i)					
P31c	Our organization has policies for child assessment, but we do not follow them	0.05	0.07	0.00	0.78
P18p	Our organization has policies for the assessment of pedagogy, but we do not follow them	-0.01	0.05	0.05	0.73
P6e	Our organization has policies for the assessment of the environment, but they are not enacted	0.02	-0.05	0.04	0.53
P28c	I do not know where the decisions on child assessment practices used in our group have been made	-0.15	-0.09	-0.20	0.43

P15p	I do not know where the decisions related to assessing the pedagogy have been made	-0.23	-0.16	-0.12	0.36
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e = statement consider assessment information of the preschool environment, p = statement consider assessment information of the pedagogical practices, c = statement consider assessment information of the children and pe = statement consider assessment information of both the pedagogical practices and the preschool environment

Supplement Table 3

Descriptives, McDonald's ω , and Pearson's Correlation Matrix of the Assessment Practice Variables (min = 1, max = 5)

Factors of teachers' assessment practices	<i>n</i>	<i>M</i>	<i>SD</i>	ω	a)	b)	c)	d)	e)	f)	g)	h)
Purposes of the Assessment												
a) Children's wellbeing and equality	1190	4.42	0.53	.88								
b) Children's learning and development	846	4.22	0.61	.81	.33***							
c) Accountability	1190	3.15	0.75	.83	.22***	.22***						
Attendants of the Assessment												
d) Orientation to participation	975	3.26	0.79	.81	.31***	.29***	.18***					
e) Participation of an external partners	972	2.90	0.97	.86	.19***	.44***	.12***	.45***				
Policies of the Assessment												
f) Level of systematization	1193	3.33	0.81	.79	.30***	.43***	.17***	.36***	.43***			
g) Autonomy of the assessment practices	1193	4.26	0.52	.71	.50***	.11***	.26***	.23***	.06	.17***		
h) External guidance	1087	3.23	0.69	.69	.27***	.26***	.23***	.29***	.29***	.44***	.18***	
i) Conflict orientation	1192	1.77	0.70	.74	-.42***	-.13***	-.26***	-.29***	-.13***	-.33***	-.48***	-.34***

*** $p \leq .001$

Descriptive statistics are calculated from the mean sum variables, but the analysis uses factor score variables