

Does Gender Make a Difference?

First results from the German ‘tandem study’ on the pedagogical activity of female and male ECE workers

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This paper is of a preliminary nature; it reports the first and provisional results from the tandem study on the pedagogical activity of female and male ECE professionals. This research is supported by the German Federal Ministry for Family Affairs, Senior Citizens, Women and Youth.

Questions, design, and sample of the tandem study

In light of the theoretical concept of ‘doing gender’ (West & Zimmermann 1987), and research in developmental psychology, the tandem study pursues the objective of investigating and comparing the behaviour of male and female ECE workers in kindergartens (children between three and six years of age). Central research questions are:

1. Can indications be found that, according to professional criteria, male and female ECE workers differ in their specific interactive behaviour towards children (of both sexes)?
2. Can indications be found in the professional context confirming the assumption of educational theory, that women interact more on the level of attachment, and men, rather, are challenging and oriented to exploration?
3. Can indications of gender dependent tendencies be found in ECE workers undertaking different activities, and serving different content areas, with girls than with boys?
4. Can indications be found, whether, and how, ECE workers come across as gender role models and, in connection to this, how interactive processes (in the sense of a ‘doing gender’) take place?
5. Can indications be found of gender dependent arrangements and division of work responsibilities between ECE workers?

The tandem study is based on a combined methods design, and proceeds from a *quasi-experimental research methodology*², with which behaviour in everyday-like pedagogical situations is recorded. Additionally, qualitative interviews with the ECE workers, and a personality test, are included.

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² This is a *quasi-experimental* investigation, because the randomisation of actors is not possible, due to the fixed gender allocation (as independent variable), and the non-random selection of children (from already existing kindergarten groups); (cf. Bortz/Döring 1995).

Due to the complexity of the design, the study is limited to the kindergarten field, and the work with children between 3 and 6 years of age, and for the present to a sample of 21 men and 21 women, who work together as tandems in a kindergarten class at their respective kindergartens. Additionally, there are 12 tandems of two women working together. In total, 22 men and 45 women, from a number of German Federal States, were included.⁴

Analysis of the ratings of the individual situations (man/woman tandems)

In the following, the results of the descriptive evaluation of the ratings of the individual sequences, with regard to the interactional behaviour of the male and female ECE workers, is presented.⁵ The 21 man/woman tandems are the basis.

Empathy

This dimension includes items which aim at aspects of what is, from the attachment theoretical perspective, empathy as the most important factor for secure attachment.

Item (1 = does not apply at all, 5 = applies completely)	women \bar{x}	men \bar{x}
ECE worker reacts to expressions & impulses of the child appropriately & promptly	3,73	3,63
ECE worker supports the child appropriately (without unrequested interference & rules/regulations) (1.3)	3,28	3,31
ECE worker gives appropriate positive & appreciative feedback (1.4)	3,23	3,14

The comparison of the mean values for the men and women, for all items, results in only minimal and not significant differences, which, moreover, are compensated in the individual items. Based on these dimensions, *no gender effect* is revealed in our sample, and also the possible assumption, that women engaged in activity with children are more empathic, was not confirmed.

4 The difference in the number of men (22 instead of 21) came about as a result of the woman in one tandem being unavailable at the last moment. This one man is only included in calculations in which the tandem effect is not regarded as relevant (e.g. use of materials). The majority of the tandems were recruited in Saxony, individual tandems from Schleswig-Holstein, Lower Saxony, Thuringia, Hessen and Berlin. This is an ad hoc sample. The statistical analyses based on this study are not generalizable for the entire population, rather only have validity for the investigated sample.

5 The reliability of the measurements in the ratings were checked with the ICC_{MW} unjust, random; two-way-random model, type: absolute agreement; thereby, the values for all items (except 2.4, ICC = .69) were clearly within the range above ICC = .70, with which, according to Wirtz and Caspar (2002), they are reliable.

Challenge

This dimension includes items aimed at a challenging and exploration-fostering manner of interaction. Supplementary to these, and based on König (2009), the level of activity of the child as well as the question of the achievement-orientation of a situation are included, because they contain corresponding aspects.

Item (1 = does not apply at all, 5 = applies completely)	women \bar{x}	men \bar{x}
ECE worker encourages the child to experiment & deal with unknown problems (1.2)	2,52	2,67
ECE worker asks questions which stimulate thinking (2.3)	2,40	2,67
ECE worker uses terms unfamiliar to the child (2.4)	1,76	1,87
The child loses interest during the activity, & shows signs of boredom (3.5)	1,55	1,66
ECE worker arranges the activity as an achievement-oriented situation (3.6)	1,79	1,70

The *conjecture* suggested by attachment research, *that men challenge children more, is not confirmed in our sample*. Although minor differences favouring the male ECE workers were revealed, these are not significant and, furthermore, the spread amongst the men is high. It is noticeable that the slightly higher average level of challenge by male ECE workers was *not* accompanied by a greater emphasis on achievement-orientation, nor did less challenge lead to more boredom on the part of the child.

Dialogical interaction

This dimension includes items which are oriented to the items developed by König (2009), for the surveying of dialogical-interactive quality.

Item (1 = does not apply at all, 5 = applies completely)	women \bar{x}	men \bar{x}
ECE worker takes up suggestions &/or initiatives of the child (2.1)	3,65	3,62
ECE worker waits patiently for decisions of the child (2.2)	3,27	3,64
ECE worker is facing the child and seeks eye contact (2.8)	3,64	3,70

The comparison of the mean values for the men and women results in only minimal and not significant differences. Based on these dimensions, *no gender effect* is revealed in our sample.

Type of cooperation

The items in this dimension have been developed to a considerable extent from the available material. In the preparation of the ratings instrument, and its matching to exemplary sequences, individual differences are clearly revealed in connection with the verbal or doing activities of the ECE workers, and with respect to division of work responsibilities and cooperation between ECE workers and child.

Dimension (1 = does not apply at all, 5 = applies completely)	women ⁷	men ⁷
ECE worker observes the child & involves him/herself only verbally (3.1)	2,13	2,34
ECE worker acts him/herself & lets the child watch (3.2)	2,16	1,95
ECE worker & child pursue different sub-projects in parallel activity, & only partial cooperation (3.3)	1,98	1,72
Both work together on an object with continual coordination (3.4)	3,46	3,57

In our sample a tendency appears that male ECE workers put themselves somewhat more in the position of observer than do female ECE workers, and women are, to a minimal degree, more active than men, and let the child watch. This is consistent with male ECE workers more often organizing a common project, and female ECE workers more often a situation of parallel working on different sub-projects. These differences are still minimal, and not significant. However, when one considers the gender of the children in the evaluation, significant differences appear, which are all the more remarkable given that such effects do not occur in the first two dimensions.⁶ Work with girls is clearly done more in parallel sub-projects, with only partial coordination, than work with boys (Item 3.3: $x = 2.28 > x = 1.43$). The significant effect appears in the direct comparison with the tandem partner⁷, as well as in the general comparison of all ECE workers⁸. At the same time, in the direct comparison of male and female ECE workers, what is striking is that especially the male ECE workers appear to treat boys and girls differently. They work less with boys in the parallel form, whereas, with respect to this aspect, female ECE workers treat boys and girls in a more similar way.

The content of communication

The fourth dimension is about the content of communication, whereby, on the one hand, the extent of primarily objective-concrete and functional expressions is judged, and, on

6 To check differences in the behaviour of the male ECE workers with regard to the gender of the child, male & female ECE workers who performed the experiment situation with a boy are compared with the ECE workers who worked together with a girl. In the statistical analysis, on the one hand the Kolmogorov-Smirnov Z test for independent samples is applied, which makes a general comparison of the specified groups possible, and, on the other hand, the Wilcoxon test for pair differences, which relates dependent samples – the direct tandem partner – to each other.

7 significant $p = 0.03$ in the Wilcoxon test (non-directional)

8 significant $p = 0.02$ in the Kolmogorov-Smirnov Z test (non-directional)

the other, the thematization of personal content, or the relationship of the actors, as well as associated phantasies or narrations during the play phase, are registered. This dimension arises deductively from the assumption of different communication styles for men and women (cf. Aries 1996).

Dimension (1= does not apply at all, 5 = applies completely)	women \bar{x}	men \bar{x}
ECE worker thematizes the relationship or the personal (attributes, experiences, feelings) or takes these up when this comes from the child (2.7)	2,32	1,98
ECE worker expresses him/herself primarily objectively-concretely & functionally about the activity, or takes this up when this comes from the child (2.5)	3,48	3,69
ECE worker accompanies the activity with associative phantasies & narrations, or takes these up when this comes from the child (2.6)	2,38	2,23

The expectation that men and women have different styles of communication, that male ECE workers more often take up objective-functional content in communication, whereas female ECE workers engage in more narrative and associative communication, and go into personal aspects or the relationship, was only confirmed tendentially in our sample. The differences do not achieve a significant level.

But, when one considers the gender of the child in the evaluation, there are then also significant results: both male and female ECE workers speak with boys about activities in an objective-functional manner more than with girls.⁹ However, the relationship or the personal (attributes, experiences, feelings) is thematized sooner with girls than with boys.¹⁰ Also, in working with girls, the activity is to a greater degree accompanied by associative phantasies or narrations than with boys, though this effect is not significant.¹¹

Gender differences in the use of materials and with regard to products made

The research design, due to the variety of prescribed materials, and the resulting scope for making decisions, also permits statements about the different tendencies of men and women, or boys and girls, to fall back upon definite materials, and, according to interest, to carry out different projects.

Gender and products made

The products made in the individual situations can be distinguished with respect to whether they symbolise ‘subjects’, in the sense of living creatures, such as humans or animals (operationalized as ‘having eyes’), or ‘objects’ such as cars, buildings or

⁹ ECE workers - boys \bar{x} = 3.83 > ECE workers - girls \bar{x} = 3.34; significant p = **0.04** in the Wilcoxon test (one-sided)

¹⁰ ECE workers - boys \bar{x} = 1.89 < ECE workers - girls \bar{x} = 2.41; significant p = **0.025** in the Wilcoxon test (one-sided)

¹¹ ECE workers - boys \bar{x} = 2,11 < ECE workers - girls \bar{x} = 2,50; not significant p = 0,12 in the Wilcoxon test (one-sided)

aeroplanes ('not having eyes'). When one sets these two basic types of products in relation to the gender of the ECE workers and the children, the influence of the gender factor appears: while it is more likely that ECE workers of both genders produce *subjects* with *girls*, in the situations with *boys* it is more likely to be *objects*. This effect is significant.¹² Also, in connection to the gender of the ECE workers, it appears that *women* are more often involved in the construction of *subjects*, *men* in that of *objects*. However, this finding is not so clearly present as with the children, and is not significant.

When one observes the constellation ECE worker/child in a differentiated way, with regard to the *gender of the professionals as well as that of the children*, the following pattern emerges (fig. 3): while men clearly more often build objects with boys, and with girls are more likely to make subjects, women produce objects or subjects in equal frequency with boys, and with girls favour subjects.

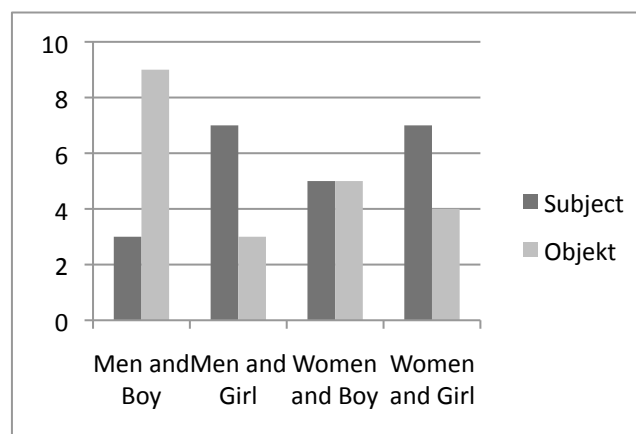


Figure 3: Products made in relation to the gender of the professional and of the child

This finding corresponds with gender dependent differences in behaviour, with respect to the dimension of communicational content, and the type of activity. Whereas talk with boys is more likely to be functional object-oriented than with girls, with girls communication is more frequently personal relationship-oriented than with boys. This is confirmed in the *object-oriented* products of the boys, and the *subject-oriented* products of the *girls*. These differences between boys and girls more clearly emerge with male ECE workers.

Use of materials

The gender dependence of the products, which appears in the differentiation of subject and object orientation in the individual situations, is also confirmed in the analysis of the

¹² χ^2 (Pearson); p value two-sided = 0.047 in relation to man/woman tandems; total sample χ^2 (Pearson); p value two-sided = 0.015

use of materials in relation to the gender of the ECE workers, and the children, as well as different gender constellations in the experimental individual situations.¹³

material	ECE worker(m)	ECE worker (f)	boys	girls
felt wool	36.4 %	57.1 %	29.4 %	12.3 %
pipe cleaners	45.5%⁺	76.2 %⁺	52.9 %⁺⁺	81.8 %⁺⁺
beads	4.5 %⁺⁺	52.4 %⁺⁺	26.5 %	30.3 %
craft eyes	4.5 %⁺⁺	33.3 %⁺⁺	17.6 %	27.3 %
wooden panels	59.1 %	42.9 %	61.8 %	39.4 %
nails	45.5 %	28.6 %	41.2 %⁺	18.2 %⁺
wine bottle corks	54.5%	42.9 %	50.0 %	30.3 %
cardboard rolls	36.4 %	28.6 %	50.0 %⁺⁺	21.2 %⁺⁺
coloured paper	22.7 %	47.6 %	14.7 %⁺⁺	54.5 %⁺⁺
washers	18.2 %⁺	0.0 %⁺	35.3 %⁺⁺	9.1 %⁺⁺

* = significant χ^2 value (p value two-sided ≤ 0.05) ** = significant χ^2 value (p value two-sided ≤ 0.01)

With a range of materials, with regard to the gender of the ECE workers and the children, a clear and to an extent significant difference in the use of materials can be seen. These are mostly materials with gender connotations. The differences for pipe cleaners and washers, for professionals as well as children, are significant. For beads and craft eyes there are only differences between male and female ECE workers, for nails, cardboard rolls, and coloured paper, only between boys and girls. All differences correspond to gender stereotypical patterns. The gender differences in total are less in the use of tools; only the boys more frequent use of the hammer is significant.

Summary of the rating results

On the basis of the results of the *ratings of the quasi-experimental individual situations*, no influence of the gender of the ECE workers can be recognized, with regard to *formal professional qualities* and the *manner of interaction with the children*. With regard to *content* aspects of communicational behaviour, and relative to the manner of the division of work responsibilities between ECE worker and child, a *gender effect of the ECE workers* became apparent, but significant values were only reached when starting from

¹³ The table shows the distribution in relation to selected and often used materials. The percentages refer to how many situations the material is used in, independent of how often in any one individual situation. The values for male and female ECE workers are based on the man/woman tandems, those for boys and girls are based on the total sample (n = 67). In the case of bold printed percentages the differences are statistically significant.

the gender of the child. This finding in connection with content aspects of the interaction was confirmed in the analysis of the use of materials in the individual situations, and the products resulting from them.

In summary, one can say that the gender of the ECE workers has no influence on how they behave towards children. An influence of gender only became apparent when the issue is what the professionals do with the children, to which themes and materials they incline, and which interests and inclinations of girls and boys they take up. On the whole, the gender of the children appears to have greater effect than that of the ECE workers, whereby, however, the men more clearly tend to orientate their behaviour to the gender of the child.

Evidence of ‘doing gender’ by ECE workers

To support this finding and, with respect to content, to be able to relate more substantially to the theoretical concept of ‘doing gender’, the behaviour of the ECE workers in the tandem study, in the individual sequences and group situations, are additionally interactionally-analytically, and, with regard to context, qualitatively evaluated; and, in this connection, the qualitative interviews with the ECE workers are also included.¹⁴ This part of the study is not yet completed, nevertheless preliminary results can be described.

The results of the qualitative analysis based on the *individual sequences* are that, for most of the time, no manifest evidence of explicit thematizations of gender are identifiable. To interpret this in the sense of ‘undoing gender’ appears, however, misguided, as presumably the fact alone, that it is a man or a woman who acts, lends the particular occurrence an *additional level of meaning*. There is some indication that this level of meaning mostly does not become independently apparent, rather ‘accompanies’ the occurrence like an *implicit subtext*, and the actors (adults the same as children) are also often not conscious of it. This assumption follows perceptions in the theoretical gender discourse, that ‘doing gender’ is not limited alone to explicit connections to gender, rather relates to habitualizations, which are more or less running concurrently in the background of the occurrence (cf. Kotthoff 2002).

It speaks for this theoretical assumption that *key scenes* can be identified in which the gender aspect steps into the foreground, and is then also directly or indirectly thematized by the actors. One can understand such key scenes in the sense of the proverbial ‘tip of the iceberg’: the gender theme, that for most of the time of the interaction process is only subliminally and implicitly operating in the background, under definite conditions becomes manifest and thereby also apparent to observers.

In the individual sequences such key scenes can be observed more often in gender-homogeneous than in gender-heterogeneous constellations, and they stand in connection to specific materials or activities (wood, nails, hammer for boys/male ECE workers, beads or felt wool for girls/female ECE workers) or phantasies/associations (guns,

¹⁴ This qualitative part of the study was carried out by the research team.

knight's castle for boys; hair, dresses for girls), which exhibit a matching gender connotation. In such scenes professionals respond to their own preferences or, on the part of the children, it leads to associations with father or mother. This finding of the qualitative analysis corresponds with results from the ratings, as well as the product and material analysis.

These kinds of key scenes occur more frequently, and become even clearer in the group situations, in which male and female ECE workers of tandems are, together, confronted with a group of children. This could be an effect of the specific dynamic of group processes (Brandes 2008).

An example case should clarify this:

In the first third of the group process the gender theme is not noticeably present. It is about the rules of the game Twister, and the distribution of roles. The only thing worth remarking is that the male ECE worker dominates the leadership of the group, and his female colleague takes on a supporting function on the sidelines. In a play situation with a clearly competitive character, as a boy loses against a girl, because he falls over, the male ECE worker says to him, loudly across the playing surface: 'That's not important – men are not as agile as girls. That's nothing to worry about.' In response, standing in front of him, a girl protests: 'Girls are more tender – but you are a boy!'. To this he responds: 'But you are more agile, my treasure'.

We don't know how the girl interpreted the first statement of the male ECE worker, nor exactly what caused her protest (perhaps that here, through the reference to 'men', he connected himself with the boy). Fact is, that from now on the gender theme is clearly in the room as tension, and the key word 'agile' can be heard from the children repeatedly. As the male ECE worker finally challenges his colleague to play against him, and he loses, then the girls are jubilant and the boys are silent. After a number of children have played the game, the two professionals repeat their competition, and this time the male ECE worker wins, because this time he is clearly more engaged. Again the girls are jubilant, but they are lectured by a boy: 'But Rosi [female ECE worker] didn't even win'.

These kinds of key scenes clarify in an exemplary way how the gender dimension comes into effect in pedagogical everyday-like interactions, in the sense of 'doing gender'. The exemplary gender function of the ECE workers also becomes evident, and the potential of such situations with regard to the gender identification of the children. Not least, one sees in the key scenes that the ECE workers have little conscious control over precisely this aspect of their actions; rather, it is as if it happens to them 'on the quiet', even when in the reflection (the subsequent interview) they have a credibly critical attitude to clichéd gender patterns.

Preliminary conclusion of the tandem study

With regard to the *formal professional qualities of communication and activity*, the rating of the behaviour of the female and male professionals in the individual situations yields *no relevant gender effects*. Thereby, also, the attachment theoretical assumption, that women interact in a more empathic attachment-oriented way, and men interact rather in a challenging exploration-oriented way, related to the ECE workers in our sample, cannot be confirmed. With this finding one could conclude that, *with regard to central professional standards in dealing with children, male and female professionals do not differ*.

That does not mean that, in dealing with children, the gender of the ECE workers does not play a role. At least, indications can be found that, *dependent on gender, different activities are carried out with the children, and different content areas served*. This is confirmed by gender specific differences concerning the selection of material, and the resulting products. Over all, the influence of the gender of the children proves to be greater than that of the gender of the ECE workers. Amongst the professionals, it was notable that the women tend to treat girls and boys more equally, whereas the men tend to adjust their behaviour more to the gender of the child.

The qualitative analysis of the videoed individual and group sequences extends this finding, in that *key scenes* could be identified in which, in different contexts, an *explicit 'doing gender'* becomes evident. In the individual situations such key scenes occur more in same-sex constellations, and correspond with the use of material with gender connotations. Over all, in group situations such key scenes are more frequent, and lead to greater intensification of the process than in the individual situations, associated with the intensification of closeness to same-sex actors or demarcation from opposite-sex actors. It is notable that in scenes with a manifest gender connotation the male or female ECE workers often give the impression of acting in an especially authentic manner, tending to be rather more intuitive and less reflective. Consequently, references to gender often emerge obliquely to professional standards of behaviour, or even contrary to them. They are connected rather with *authentic* than with *professional* behaviour.

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