

A Dyadic Analysis of Interprofessional Collaboration in ECEC

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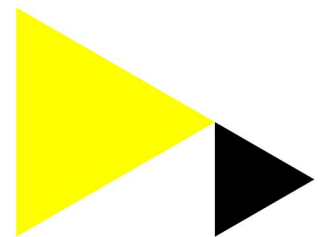
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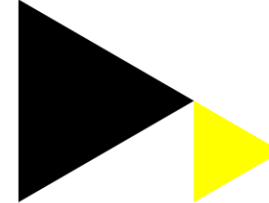
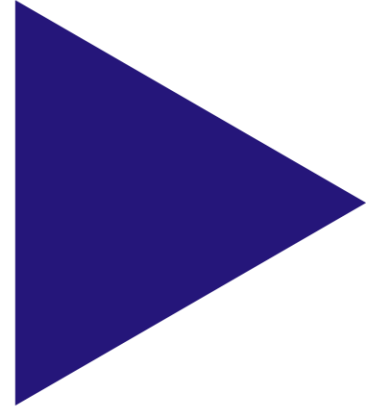
A dyadic Analysis of Interprofessional Collaboration in ECEC

EARLI 2025 Graz 28 August 2025

Team: M. Ooms, B. Zijlstra, E. Nitert, A. Kassenberg, R. Fukkink

A dyadic Analysis of Interprofessional Collaboration in ECEC

Creating Tomorrow



Introduction

- The Netherlands is known for its split system (Eurydice, 2025)
- Childcare and Education are increasingly collaborating (Van Grinten et al., 2019)
- Lack of research (many policy report on innovative initiatives) (Ooms et al., 2025)
- Research relies on measuring tools borrowed from healthcare (Verheijen-Tiemstra et al., 2020)

Research questions

1. Do child centers with a higher level of integration between childcare, school and/or family support services have more dense and more edgewise reciprocal networks between professionals than child centers with a lower level of integration?
2. Are interprofessional contacts at dyadic level observed more often and more symmetric in child centers with a higher level of integration?

Sample

- Locations: 46
- Professionals: 788 (64,9%)

Discipline	N	%
Childcare	366	39.7
Education	461	51.9
Care	13	1.6

Index for Child Center Integration

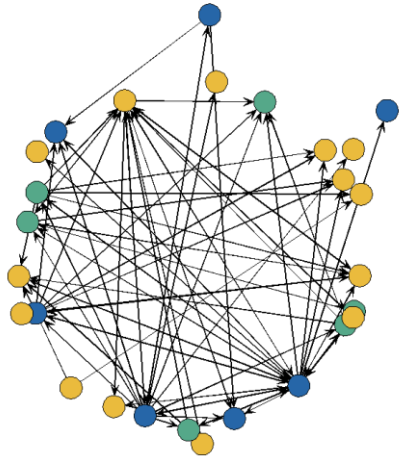


- Based on national and international literature
- 22 items with differentiation for collaboration between daycare and primary education and out-of-school care and primary education, and both childcare and primary education with care (e.g., pedagogical vision, organizational ambition, collaboration with paramedical professionals)
- Three-point scale: 1 separated; 2 aligned; 3 integrated
- Interviews with managerial team of location (school principal and manager childcare)
- High internal consistency (Cronbach's $\alpha = .92$)

Social network analysis

- Professionals received a personalized questionnaire with the question:
With whom did you have contact in the past six months about:
 1. Transition childcare to school
 2. Transition school to out-of-school care
 3. Collaboration for children with special needs and care
 4. Collaboration in context of policy

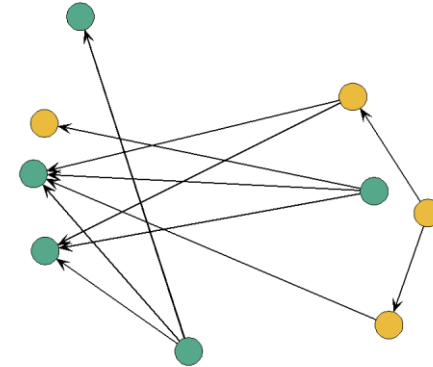
Differences in social networks of Dutch child centers



Yellow= Childcare

Green= Education

Blue = Childcare and education



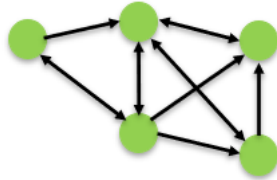
Collaboration on network level

- Calculated Density and Edgewise reciprocity scores in R
- In the second step we correlated the ICCI-score with these Density and Edgewise reciprocity scores

Collaborations on network level

Theme 1: the transition between childcare and school

No differences in



BUT

More



More

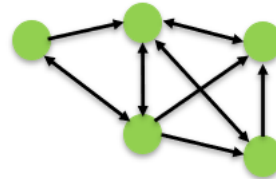


$(r(44) = .50, p < .001)$

Collaborations on network level

Theme 2: the transition between school and out-of-school care
&
Theme 4 : collaboration in context of policy

No differences in



AND

No differences in



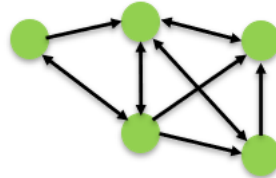
Collaborations on network level

Theme 3: collaboration for children with special needs and care

More



More



$(r(44)= .33 , p= .027)$

AND

More



$(r(44)= .32 , p= .029)$

Collaboration on dyadic level

- Network level: Correlations between ICCI-score and Density and Edgewise reciprocity
- Dyadic level: multilevel j_2 model (Zijlstra, 2017)

Collaboration on dyadic level

Theme 1: the transition between childcare and school

Professionals collaborate more  →  than  → 

J₂ML Models for Transition from Childcare to School

Effect	Covariate	Six Months			
		Est.	SE	Q0.5	Q99.5
Density		-4.26**	0.29	-5.01	-3.52
	Interprofessional dyad	-0.13**	0.11	-0.39	0.17
	ICCI score	-0.35	1.34	-4.68	4.33
	Interprofessional dyad*ICCI score	0.51	0.27	-0.24	1.20
Reciprocity		1.92**	0.50	0.92	2.68
	Interprofessional dyad	-0.46	0.52	-1.80	0.62
	ICCI score	-0.40	1.78	-4.24	6.69
	Interprofessional dyad*ICCI score	0.16	1.20	-3.16	2.70
Random effects					
Sender variance		5.82	0.98	3.93	9.76
Receiver variance		2.50	0.69	1.41	5.47
Sender-receiver covariance		2.70	0.60	1.74	5.20
Density variance		2.34	0.72	0.94	4.70
Reciprocity variance		0.48	0.27	0.11	1.42

Note. * = significant at $p \leq .05$; ** = significant at $p \leq .01$

Collaboration on dyadic level

Theme 2: the transition from school to out-of-school care

More



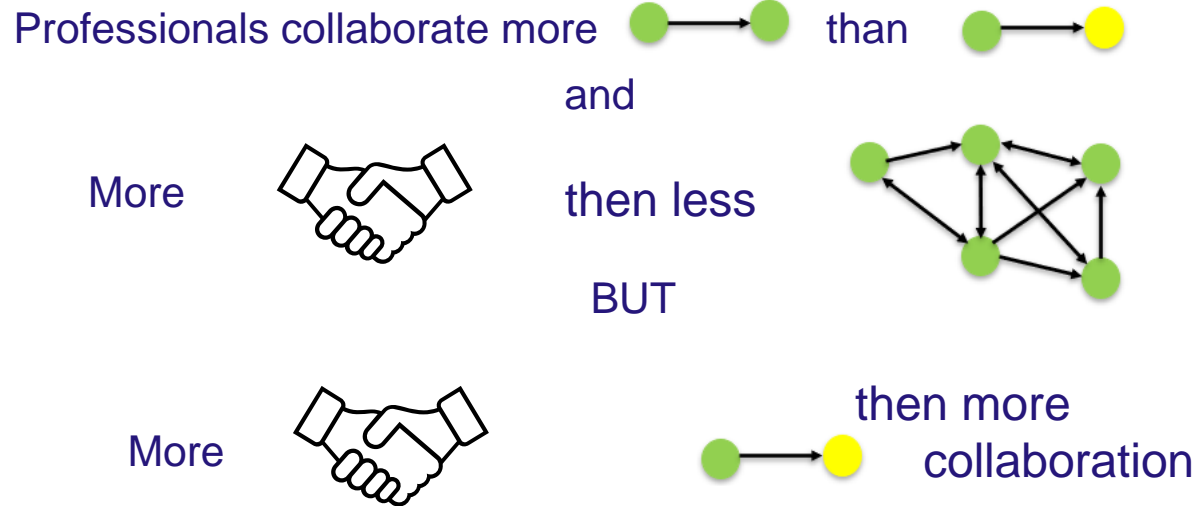
J₂ML Models for Transition from School to Out-of-school Care

Effect	Covariate	Six Months			
		Est.	SE	Q0.5	Q99.5
Density		-4.87**	0.21	-5.42	-4.35
	Interprofessional dyad	-0.24	0.12	-0.56	0.10
	ICCI score	0.20	0.81	-1.79	3.78
	Interprofessional dyad*ICCI score	0.70**	0.24	0.22	1.39
Reciprocity		1.49**	0.49	0.64	2.21
	Interprofessional dyad	0.17	0.74	-1.64	2.10
	ICCI score	0.06	1.58	-4.16	4.75
	Interprofessional dyad*ICCI score	0.89	1.51	-2.99	4.70
Random effects					
Sender variance		4.03	0.62	2.87	6.12
Receiver variance		0.69	0.42	-0.07	2.23
Sender-receiver covariance		1.70	0.39	1.02	3.17
Density variance		0.84	0.49	0.13	2.39
Reciprocity variance		0.23	0.14	0.05	0.71

Note. * = significant at $p \leq .05$; ** = significant at $p \leq .01$

Collaboration on dyadic level

Theme 3: collaboration for children with special needs and care



J₂ML Models for Care for Children with Special Needs

Effect	Covariate	Six Months			
		Est.	SE	Q0.5	Q99.5
Density		-2.71**	0.17	-3.16	-2.26
	Interprofessional dyad	-1.92**	0.08	-2.13	-1.71
	ICCI score	-0.28**	0.03	-0.34	-0.19
	Interprofessional dyad*ICCI score	1.09**	0.35	0.20	1.64
Reciprocity		2.65**	0.54	1.41	3.59
	Interprofessional dyad	-0.01	0.41	-1.00	1.26
	ICCI score	-0.18	1.58	-4.00	4.68
	Interprofessional dyad*ICCI score	-0.34	0.77	-2.24	1.63
Random effects					
Sender variance		4.70	0.82	3.28	7.96
Receiver variance		1.07	0.31	0.45	2.15
Sender-receiver covariance		1.32	0.29	0.85	2.56
Density variance		0.63	0.24	0.23	1.53
Reciprocity variance		1.70	0.44	0.92	3.34

Note. * = significant at $p \leq .05$; ** = significant at $p \leq .01$

Collaboration on dyadic level

Theme 4: collaboration in context of policy

Professionals collaborate more  →  than  → 

BUT

More



 →  then more
collaboration

J₂ML Models for Collaboration in Context of Policy

Effect	Covariate	Six Months			
		Est.	SE	Q0.5	Q99.5
Density		-3.15**	0.10	-3.66	-2.63
	Interprofessional dyad	-2.22**	0.10	-2.46	-2.00
	ICCI score	-0.27	0.12	-1.10	0.37
	Interprofessional dyad*ICCI score	0.83**	0.13	0.38	1.36
Reciprocity		2.16**	0.46	1.13	2.85
	Interprofessional dyad	0.12	0.43	-0.92	1.32
	ICCI score	0.44	1.11	-2.99	3.14
	Interprofessional dyad*ICCI score	-0.15	0.90	-2.02	2.34
Random effects					
Sender variance		6.13	1.22	3.95	10.60
Receiver variance		1.02	0.38	0.31	2.28
Sender-receiver covariance		1.28	0.22	0.84	2.05
Density variance		1.08	0.34	0.46	2.27
Reciprocity variance		0.51	0.27	0.14	1.43

Note. * = significant at $p \leq .05$; ** = significant at $p \leq .01$

Conclusion

- At organizational level
 - Networks are denser on location with a higher degree of collaboration according to managers in the theme: care for children with special needs
 - Networks are more reciprocal on location with a higher degree of collaboration according to managers in the themes: transition between childcare and school and in the care for children with special needs
- At dyadic level
 - Professionals tend to collaborate more with professionals from their own discipline in the themes care for children with special needs and policy
 - But on a child center with a higher degree of collaboration (according to management) tend to collaborate more interprofessional for the themes: transition out-of-school care to school, care and policy

Implication and limitations

- ICCI is a promising instrument for both research and practice to examine and monitor the level of service integration at organizational level
- However:
 - ICCI developed within Dutch context and in need of international validation.
 - Under representation of professionals from family support services, (health)care

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Thank you for your attention

Interested in the ICCI or the slides:
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