

How Can Collaboration Foster Your Academic Career? Young Researchers' Networks in Educational Research in Germany

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Research hypothesis: Young researchers' academic networks evolve to different types with regards to homophily of gender and discipline as well as social learning environment.

1. Theory: socio-cultural learning

Social capital provides access to social resources, i.e. information, knowledge, advice, support and collaboration (Bourdieu 1983). Thus, junior researchers benefit from their social networks during their doctoral studies as well as during their academic career in empirical educational research.

According to the concept of **situated learning**, knowledge distribution and learning processes are always embedded in social contexts (Brown/Duguid 1991, Lave/Wenger 1991).

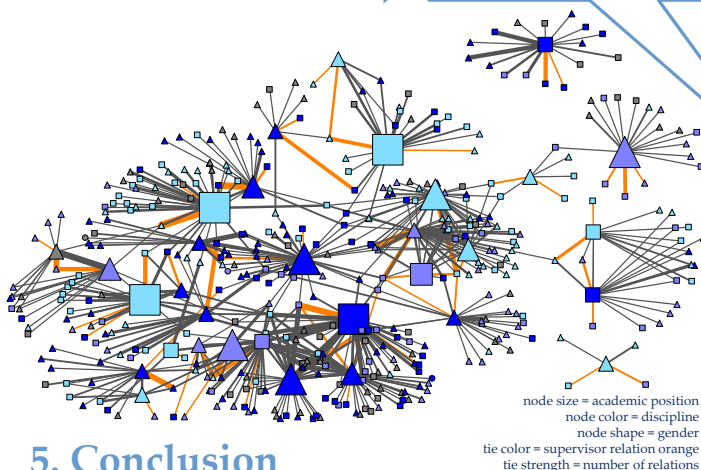
Communities of practice introduce and integrate new members to a group with shared interests and provide fast access to information and exchange of experiences as well as new insights and opportunities (Wenger 1998).

3. Research questions

Which **types of networks** do young researchers build through their academic activities (publication and research collaboration) with regard to gender and disciplinary homophily?

Which **social learning environment** do they form during their Ph.D. phase: a teacher-student-relationship with few strong ties to supervisor or a community of practice?

How do network type and social learning environment model influence their **academic career** in educational research?



5. Conclusion

Network type, model of social learning environment and academic career are main indicators to gain insight into the relevance of academic networks.

- Dependent on the amount of homophily of gender and discipline in their academic network, junior researchers gain access to social resources. High levels of homophily show a preference to connect with similar alters, indicating a closure and concentration on expertise in their own discipline. Egos connecting to heterogeneous alters from different disciplines show a preference for diversity of information and exchange.
- Two different models have emerged: a social learning environment model of a 'teacher-student-relationship' – indicated by strong relationships with supervisors – as well as a model of 'communities of practice' – junior researchers are integrated into a research team by experienced members of the academic community.
- Frequent research collaborations contribute to academic careers as well as very strong publication activities.

2. Method: ego-centered SNA

This quantitative study analyses academic networks of former Ph.D. students who were members of a major research program in Germany. Their academic career and collaborations, e.g. publications and research projects, during the years 2000 to 2010 were collected (sources: publication data bases, personal homepages), evaluated and analysed as multiplex valued relationships between co-authors and research collaborators (Kenk 2012). Their social learning environment was examined with a focus on the connections to the Ph.D. supervisors and their role in the network.

The sample of egos (N=32) consists of 69% women and 31% men from psychology (37%), educational sciences (26%) and didactics (37%). Their networks are formed by 1218 ties to 53% female and 46% male alters (N = 606) from psychology (28%), educational sciences (24%), didactics (29%) and others (19%).

Their careers led to professional positions in the school (19%), as post-doctorates and academic assistants (47%) and as professors (28%).

4. Results

Analysis of homophily identified a small preference for the population to connect with alters of the same gender (E-I-Index - 0.089) but interdisciplinary with alters (E-I-Index 0.116). Egos preference to connect to homogeneous alters with regard to gender and discipline:

network type		heterogenous	mixed	homogeneous	total
gender	female	16%	40%	12%	68%
	male	13%	13%	6%	32%
discipline	psychology	19%	9%	9%	37%
	educational sc.	10%	13%	3%	26%
	didactics	0%	31%	6%	37%

Analysis of ties to Ph.D. supervisor in ego-centered networks result in:

- a teacher-student-model with strong ties to supervisor (75%)
- a community of practice with many weak and strong ties to peers as well as to supervisor (25%).

social learning environment model	teacher-student	community of practice	cut-off point
number of alters	low 50%	high 50%	SD 15.180
number of relations	low 53%	high 47%	SD 43.736
supervisor relation	strongest 75%	low 25%	maximum
supervisor percentage	high 50%	low 50%	M = 26 %

Analysis of academic careers show a contingency of network type and social learning environment (SLE) model:

- Most professors have a heterogeneous and mixed network type and community of practice as a SLE model, indicating broad connectivity and diversity.
- Ph.D. positions show a homogeneous network type and a mixed SLE model, whereas school teachers have a mixed network type and a teacher-student-relationship.

		Ph.D.	Professor	School	other
network type	heterogeneous	45%	33%	11%	11%
	mixed	35%	35%	24%	6%
	homogeneous	84%	0%	16%	0%
SLE model	TS	30%	10%	40%	20%
	CoP	33%	67%	0%	0%
	mixed	58%	32%	10%	0%

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