

The Collective Agency of Language Teachers under the Scheme of Research Excellence: Using a social network approach

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Abstract. This study adopted social network analysis (SNA) as a theoretical framework and methodological approach to understand the collective agency of a multilingual team of eight language teachers during their research practice in a Chinese university. As being guided by SNA that focuses on identifying social relationships and their impact, we used questionnaires and qualitative interviews to collect data and examine the emergence of collective agency. The data analysis revealed that the participants broke linguistic boundaries and engaged in cross-linguistic interactions. The findings further suggest that they offered complementary resources and emotional support for each other at individual, subgroup and group level. Based on the findings, this paper proposes a multi-layered understanding of collective agency to advance our knowledge of how to sustain collective agency. The findings point to the importance of addressing social interactions and relations in the emergence and enhancement of collective agency, so as to facilitate the professional development of language teachers.

Keywords: Collective agency, social network analysis, language teacher development.

[ch] 卓越学术政策下语言教师的集体能动性：社会网络方法的应用

摘要. 本研究采用社会网络分析法为理论框架与研究方法，探究了某中国高校中一支由八名语言教师组成的多语团队在研究实践中所表现的集体能动性。以社会网络分析法为指导，研究采用了问卷与质性采访等数据采集方法，通过聚焦社会关系及其影响来考察了集体能动性的产生过程。其中，数据分析反映了参与者能够打破语言壁垒，融入跨语种交流。研究结果进一步指出，他们能在多个层面为团队成员提供资源互补支持与情感支持。基于研究发现，本文通过对集体能动性展开多维度的理解拓展了可持续发展社会网络中集体能动性的知识体系。研究表明人际交往与关系对促成与强化集体能动性尤为重要，后者可为语言教师的职业发展注入动力。

关键词: 集体能动性，社会网络分析法，语言教师发展。

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1. Introduction

Agency receives increasing attention in language teacher education and development. Researchers and practitioners recognize that it plays an essential role in how language teachers make choices and take actions within the complex educational landscape of this neoliberal era, in contexts such as curriculum reform in schools or districts (Toom et al., 2015). The neoliberal discourse emphasizing efficiency has also triggered changes in university management, with the result that language teachers in tertiary institutions are required to build research profiles and publish in high-ranking journals (Tran, Burns, & Ollerhead, 2017). Thus previous research has argued that teachers need to exercise “academic agency” to navigate the complex contexts of significant job insecurity and build their career as academics (Mathieson, 2011). Publishing in English has been found to be particularly challenging for non-native-English-speaking (NNES) language teachers who deal with English or other languages as the subject of their research, which may necessitate cross-linguistic collaboration (Tao, Zhao, & Chen, 2019; Guo, Sit, & Bao, 2020). It

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is imperative to understand how to enhance the professional agency of language teachers in order for them to survive and sustain their career advancement; this will be the focus of this study.

Existing research has shown that teachers need to exercise agency to sustain their learning and change their teacher practices during times of educational reform (Tao & Gao, 2017). During this process, teacher agency may be manifested via a range of orientations, such as resistance, adaptation, or approval (Sannino, 2010). Teachers also exercise transformative agency to modify their working environments in order to continue their professional learning (Pyhältö et al., 2015) and improve school development. Although previous studies do recognize the inseparable link between agency and the social environment, they often conceptualize teachers as active agents who “read ... discourses surrounding them, construct their own unique understandings and ... construct their own self-directed responses” (Sloan, 2006, p. 126). In other words, the studies overemphasize the individualistic nature of agency.

However, it is important to note that agency is highly relational and social, embedded in social interactions with other agents in the context (Pyhältö et al., 2015). For example, empirical research has revealed that agency may emerge in teachers’ active negotiation to co-construct knowledge in collaborative activities, such as group or team discussions (Zhang et al., 2019; Melasalmi & Husu, 2019). Additionally, Lipponen and Kumpulainen (2011) identified the emergence of different kinds of agency in the collective discussion between pre-service teachers and mentors, which result from building an equal relationship and seeking ownership of expertise.

These studies all point to the importance of social interactions and social relationships, but mostly focus on the effects of one-off learning activities or pre-service programs on collective agency (e.g. Zhang et al., 2019; Melasalmi & Husu, 2019). We have a limited understanding of how collective agency can be sustained at workplace on a long-term basis. To advance our understanding of collective agency, we have adopted social network analysis (SNA) as our theoretical and methodological approach to identify the role of social relations or interactions in the emergence of collective agency. The study will focus on a group of language teachers with expertise in different languages (e.g., English, French, Japanese) and examine their collective agency in research practices and development. The following research question will be addressed:

How does collective agency emerge in a multilingual team of language teachers?

2. Theorizing collective agency

The study takes a sociocultural approach and sees agency as a socioculturally-mediated capacity to act (Lasky, 2005), because this definition highlights the fact that teachers always exercise agency in a particular context, and their agentic choices/actions are contextually embedded (Edwards & D’Arcy, 2004). Moreover, such an approach proposes the exercise of relational agency, in that language teachers can mutually support each other through mediational tools such as language—and this may even also involve learners or other social agents (Edwards, 2011). It is thus reasonable to argue that the unit of analysis for agency is “people doing things *together* in social settings with the cultural tools available to them” (Lasky, 2005, p. 900, our italics). That is to say, taking a sociocultural perspective inherently requires us to examine agency collectively.

According to Archer (2000), agency has always been collective due to the fact that agentic actions necessarily entail social interaction in a particular context. For example, professional agency may be manifested in participating in professional development activities at the individual and collective level, involving making suggestions to each other and participating in collective activities (Vähäsantanen, 2020). Thus, the notion of collective agency constitutes a proper construct to capture how language teachers exercise agency collectively to enhance their research capability and sustain their professional development in a multilingual team.

In the conceptualization of collective agency, previous literature has emphasized the shared features of a group of people. They may share a common interest or belief (Ibrahim, 2006) or a common repertoire of knowledge, skills, and resources (Bandura, 2006), which generates the power to achieve shared goals. Collective agency also involves the agentic actions of learning together through participating in collaborative activities (Zhang et al., 2019). Such collective agentic actions are likely to take place via a range of mediational tools, and also through interacting with others (Spicer, 2011). Moreover, collective agency may be particularly salient when people have developed allegiances, affinities, or a sense of belonging within a professional community (Hökkä et al., 2017).

Nevertheless, these varying understandings all indicate the important role of social relations or interactions, both implicitly and explicitly, in the emergence and enhancement of collective agency. In this study, we thus define collective agency as “intentionally interacting with others as a resource” and “acting as a support for them” (Toom et al., 2015, p. 615) to achieve individually shared goals. To rephrase it, collective agency may be reflected in practical mutual ways such as knowledge exchange, and also in affective ways like emotional support. This definition implies that collective agency does not emerge from a sum of actors, but from the social interactions between them. To align with the theoretical underpinning of collective agency, we adopted social network analysis (SNA) as not only our theoretical perspective but also as our methodological approach, a vehicle for identifying the process through which collective agency emerges.

3. Social network perspective

We will use social network theory as the theoretical perspective to examine a group of language teachers' collective agency in their research practice. A social network consists of actors and their relationships, which are represented as *nodes* and *ties* respectively in social network analysis (SNA) (Froehlich et al., 2020). In this study, the nodes are the language teachers. Ties can be relationships such as those between colleagues, friends, and co-authors, and also different kinds of transfer such as corridor conversations or knowledge exchange between the teachers (*ibid.*).

There has been a long-held misunderstanding of SNA as merely mathematical measurements, but in fact SNA has been developed into an established theory (Froehlich et al., 2020; Borgatti et al., 2014). Social network theory focuses on social relationships rather than attributes of actors to explain their actions and network outcomes (Froehlich et al., 2020). At group level such patterns of social relationship form the network structure within which the actors are embedded. Network structure becomes an important part of the network environment, which may either benefit or constrain actors' professional development (Borgatti et al., 2014).

Moreover, the content of the social relationships also matters. According to what flows in a relationship, social relationships can be categorized into two types, namely instrumental and expressive relationships (Ibarra, 1993). Instrumental relationships indicate the practical purpose of creating or maintaining a social relationship, which can be manifested in knowledge transfer, information/material sharing, or seeking/eliciting professional advice. In contrast, expressive relationships are more concerned with the affective dimension, including emotional support, friendship, or other things not directly related to the actors' professional practice (*ibid.*).

Social networks produce social capital, in that being in a relationship can help an actor to access various forms of resources that may contribute to their professional development (März & Kelchtermans, 2020). Empirical research has revealed that social networks are positively related to improved teacher retention and sustained professional development. By comparing two cases of beginning teachers in different working environments, Thomas et al. (2019) found that one teacher was more willing to stay in the profession when everyone was interconnected in the school, facilitating access to professional support. Furthermore, the chance to be supported is also affected by one's network awareness, relational knowledge (i.e., knowledge of who possesses relevant expertise), and physical proximity.

Apart from formal support networks, März and Kelchtermans (2020) also reveal the importance of informal support networks to the teacher induction process. Instead of seeking support from mentors, pre-service teachers are more likely to reach out for help from others such as novice teachers and teachers of the same subject with whom they share commonalities. Thus, professional support can be distributed in a broader network that creates "a powerful professional development context" (p.8). At the same time, the network support they seek relates not only to their professional practice but also to their sense of identity and self-esteem, indicating the importance of both the practical and the emotional support that flows through instrumental and expressive relationships as described above (Ibarra, 1993). Therefore, being engaged in social relationships of different types is highly relevant to the ways that teachers exercise agency collectively, both "as a resource" and "as a support" (Toom et al., 2015, p. 615). This makes social network theory an appropriate perspective to examine collective agency.

4. Methodology

Given the importance of social interactions and relations in collective agency, the study adopts social network analysis (SNA) as its methodological approach. SNA lends us some tools by which we can operationalize social network theory, focusing on identifying social relations and their impact. To do this, we employed a mixed-method social network design to examine the network structure and its content, and their reflection of the emergence of collective agency. That is, network structure, or the pattern of social relations, reflects language teachers' access to "resources" and "support", while network content reflects the "resources" and "support" that the teachers access, which are manifestations of collective agency (Toom et al., 2015, p. 615). This section will explain the research settings, the participants, and the data collection and analysis methods.

4.1. The settings

The study was conducted against the educational background of China, particularly the Double First Class University Plan (hereafter "Double First Class"). This is a tertiary education initiative sponsoring a list of elite Chinese universities and disciplines that are aiming to reach world-class level by the end of 2050. The focal university is on the list. Along with the Double First Class initiative, the focal university has strengthened its evaluation and assessment of faculty members at all levels in a newly introduced tenure system similar to that used in institutions in the West; in particular, this system places significant additional stress on research output. Assistant professors are under the greatest pressure because they are also affected by the up-or-leave (*feisheng jizou*) policy; that is, they need to produce a required amount of research output in three or six years, depending on their type of contract, or else they will have to resign or "leave" the university as the policy name suggests. While assistant professors face considerable job insecurity, their counterparts in the positions of associate or full professor will continue to be assessed every three years,

but will have a relatively lower research requirement and might only be punished financially if they fail to achieve it. This is known as the “annual performance review”. According to the figure below, faculty members are required to publish quality research in top journals, especially in high-ranking SSCI journals that are mostly dominated by research published in English (Zheng & Gao, 2016).

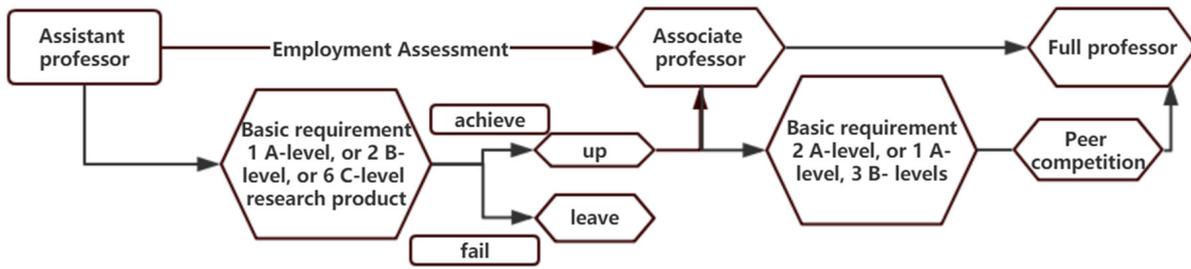


Figure 1. The research assessment criteria in the focal university.

Note: A-level products refer to publications in (social) science indexed (SSCI/SCI) Q1 journals, publications in two selected top CSSCI journals, or the completion of national research projects; B-level products refer to publications in SSCI/SCI Q2–3 journals or the completion of provincial or ministry-level research projects; and C-level products refer to publications in SSCI/SCI Q4 journals or Chinese social science indexed (CSSCI) journals. The Q1–4 categorization of journals is based on the percentile of the journals’ impact factor within their field according to Journal Citation Reports.

4.2. The participants

The participants were the core members of a research center that features multilingual and multicultural studies in the focal university. The research organization was established in 2018 for the purpose of promoting research collaboration and exchanges between team members specializing in different languages including English, French, and Japanese (see Table 1), and the possibility of conducting cross-linguistic research. According to the team leader, all members joined the research center “on a voluntary basis” and “have a shared goal” (T8). That is, they all want to enhance their research capability. The research center comprises young researchers in their thirties and forties who find it “easy to communicate” (T8). Additionally, all have received or are receiving PhD training overseas, and all have developed “an advanced level of professional attitude” (T8). This commonality in their ages, professional experience, and attitudes may explain why they have shared goals and are able to work together towards them.

Table 1. Participant information.

Participant	Age	Specialized Language
T1	40s	English
T2	30s	French
T3	30s	English
T4	30s	English
T5	40s	Japanese
T6	40s	English
T7	30s	English
T8	40s	English

4.3. Data collection

We adopted the mixed methods social network analysis (MMSNA) approach (e.g., Thomas et al., 2019). The traditional SNA approach has long been criticized for lacking attention to the qualitative aspect of social relations because of using a purely quantitative approach. By combining quantitative and qualitative approaches, MMSNA has been found to be useful in addressing structural properties of network, but also “questions related to the actual content and meaning of interactions ... and agency” (Froehlich et al., 2020, p. 245). As the definition of collective agency features intentional interaction, we combined a SNA questionnaire along with a qualitative interview to reveal the “actors’ interpretation [of] ... constructing meaning-laden relational structure” (Herz et al., 2015, p. 1). Since we wished to

focus on the collective agency of the research center, we took the whole-network approach in which all actors in a bounded sample are asked to indicate their interaction with others (Moolenaar, 2012). In this study the research center was chosen as the boundary of the network, one that included eight language teachers or actors (see 4.2).

The purpose of questionnaires was to generate data about the network structure of the center. When designing the questionnaire, we adopted the name roster approach (Borgatti et al., 2014). That is, participants were asked to recall their interactions with other members of the center since its establishment in July 2018. Specifically, they were presented with a bounded sample, i.e., a list of all the members' names, and then instructed to use arrows to indicate who they had contacted and by whom they had been approached. The data collected through the questionnaires comprised information through which it was possible to produce a quantitative and visual understanding of the network structure within the center. The response rate was 100%, exceeding the minimal requirement of 80%, and thus we can generate "meaningful and reliable relational patterns from the data" (Moolenaar, 2012, p. 16). The questionnaire data was used as part of the stimuli in the subsequent interviews, facilitating the identification of the content of social interactions.

Following up on the questionnaires, we conducted semi-structured interviews with 7 participants with the aim to understand the network content of the research center. In the interview, we elicited their attitudes towards their research policy, their career aspirations, and their self-positioning as part of their researcher profiles; they were also asked to rate and explain their social network awareness. In the second half of the interview the questionnaire was used as a prompt to ask participants to elaborate on the content of their social interactions, including their research collaboration, with other members. Each interview lasted around forty to sixty minutes, and all were conducted via phone due to the COVID-19 pandemic.

4.4. Data analysis

The questionnaire data was analyzed to reflect the network structure. Thus, we used a few measures to reflect the cohesion, reciprocity, and centralization of the network (Moolenaar, 2012). The cohesion of the network may be indicated by the measure of network density, which reflects the number of ties that each actor has with the others. Reciprocity reflects the extent to which members maintain mutual relationships with others—that is, how often they contact others and also are approached by others for a purpose. Centralization indicates how the centrality of individuals varies in a network; a network with high centralization is dominated by a few highly influential members while others remain peripheral.

We used qualitative analysis of the interview data to reflect the network content. We took both top-down and bottom-up approaches; informed by the working definition of collective agency adopted in this study, we initially searched for data indicating instrumental and affective relationships (Ibarra, 1993), and categorized the data into these two groups respectively. Next we conducted content analysis, starting with open coding and then grouping the data according to a few labels through axial coding (see Table 2) (Herz et al., 2015). The major themes reveal more instrumental than affective relationships within the team, which may be explained by the professional nature of the research center and their shared goals. These will be further elaborated in the next section.

Table 2. Major themes from the content of the social interactions.

	Instrumental relationship	Expressive relationship
Major themes (ordered by frequency mentioned by participants)	Research consultation (26) Research collaboration (25) Research discussion (9)	Encouragement (17) <i>Tu-cao</i> (10) Feeling not alone (4)

5. Findings

We argue that collective agency emerges at multiple levels of the network where everyone is interconnected, including at individual, subgroup, and group levels. These three levels interact and form reciprocal relationships, which impart a synergy to the sustainable development of individuals and also the research team as a whole.

5.1. Collective agency in the network structure

The questionnaire data reveals an inter-connected network in which the majority of the interactions occurred in a two-way manner. In terms of cohesion, the network density reveals that 78.6% of the total possible relationships are present among team members (see Table 3). In other words, more than 3 out of 4 potential relationships exist, indicating a strong cohesive structure within the network. The degree of centralization was calculated by using Freeman's general formula for centralization. The score was 0.17, a low degree of centralization, indicating that the team is not organized around particular individuals. The entire team is well interconnected. The questionnaire data was also corroborated in the qualitative interview data, in which team members reported a lot of social interactions with each

other, both instrumental and affective. Moreover, they were all engaged in research collaboration, which may explain the intense relationships and high degree of interaction among the team members.

Table 3. Cohesion measures of the network.

Density	0.786
Degree of centralization	0.17

Note: Density varies from 0 (no relationship among members in the network) to 1 (every member is connected within the network); degree of centralization varies from 0 (all members approach others and are nominated as a contact) to 1 (all members only interact with one member and are not nominated as a contact).

For centrality, we used in-degree and out-degree scores to indicate the two-way interactions between individuals. The scores are normalized to facilitate comparison, and most fall within the range from 0.57 to 1. This means that individuals not only approached but also were approached by more than half of the team members. In particular, T8's normalized out-degree and in-degree scores of 1 indicate a very central position in the network, as shown by the size of node T8 in Figure 2. This was corroborated by the interview data, in which members nominated T8 as the person who "helped him or her the most" (e.g., T2 and T6). Besides T8, T2's and T5's normalized out-degree scores were also both 1, indicating that they approach all others to establish social relations; T2 was approached by 6 out of 7 actors, resulting in the second largest node in Figure 2. It should be noted that T2 is a French teacher and T5 is a Japanese teacher. Their active interactions with other actors, particularly English teachers, indicate the prevalence of cross-linguistic interactions. The small standard deviation for normalized out-degree and in-degree scores suggest limited variation among individual members in terms of the extent to which they are connected. This will be reaffirmed in the qualitative data, which show that all participants are engaged in collaboration with other team members.

Table 4. Centrality measures of the network.

	T1	T2	T3	T4	T5	T6	T7	T8
Normalized out-degree	0.71	1	0.29	0.57	1	1	0.71	1
Normalized in-degree	0.86	0.86	0.57	0.86	0.57	0.86	0.71	1
Standard deviation normalized out-degree	0.26							
Standard deviation normalized in-degree	0.15							

Note: Normalized out-degree and in-degree scores range from 0 (no interaction happens between the member and others) to 1 (the member contacts others and is nominated as a contact).

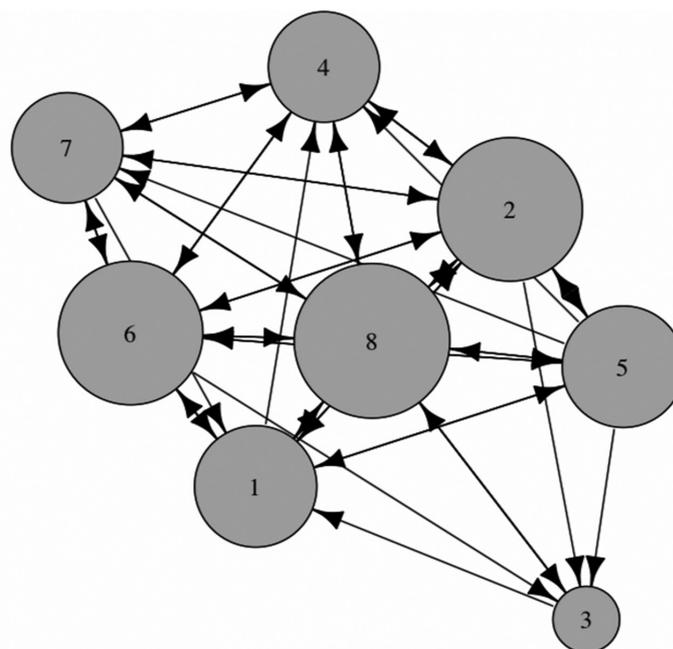


Figure 2. The network map of the research center

Note: Each node is sized according the total number of in-degree and out-degree scores.

5.2. Collective agency in the network content

Based on a global understanding of the network from the questionnaire, the interview data reveals details of the social interactions reflecting the emergence of collective agency. The content of the network reveals more instrumental relationships than expressive ones, which occur at the level of individuals, subgroups, and the team. Individual members were found to make agentic actions in seeking research collaboration, consultation, and discussion the most in instrumental relationships, which had been afforded by their relational knowledge. They were also found to encourage each other and share pressure the most in expressive ties, which were mediated by physical proximity and age. At the level of the subgroup, they were able to overcome physical distance and maintain frequent social interaction when they were engaged in research collaboration. At the group level, many interviewees regarded the team's atmosphere highly and also valued collective activities, which were not only practically helpful but also emotionally empowering. The three levels interacted and benefited each other, enhancing and sustaining the emergence of collective agency.

1) Intellectual support in instrumental relationships

The data reveals diverse forms of intellectual support occurring on a very frequent basis, among which research consultation and collaboration top the list. At the individual level, the participants were able to find the right person to consult when they were facing research-related questions. At the level of subgroups, all participants were engaged in or were seeking research collaboration with other members. Furthermore, 5 out of 8 participants were engaged in more than one collaborative project with different members, indicating strong ties among members. At the group level, they were given opportunities to share their research projects in a range of collective activities, which helped to enhance their relational knowledge and thus yielded the potential to start more collaborations. Nevertheless, their relational knowledge played a pivotal role at each level of intellectual support, which may be facilitated by the multiple forms of collective activities taking place at the group level.

At the individual level, the participants often approached other members, especially when they had questions regarding research methods and theories. Particularly, they knew who to approach for research consultation. For example, T6 was conducting qualitative research on language teachers, and approached T7 for a consultation. In return, T7 sent T6 some research articles on that topic for her reference.

T6: I wanted to learn more about qualitative analysis and also interview guideline design, followed by material search, data collection, and processing. I was still in a mess. In fact, I read the article (that T7 sent me) many times, and have new ideas every time...

Researcher: Is it at an intellectual or informational level?

T6: It should be beyond knowledge or information (sharing). Because when we talk about research methods such as data processing, I think there is some creative stuff... It makes me reflect and learn, which facilitates my thinking. Thus it's more than information.

The extract above reveals that T6 approached T7 to consult about research methods in language teacher education, and also read the articles shared by T7 many times. As she reflected, this kind of intellectual support is more than information sharing, and shaped the way she thought about research. This kind of social interaction was mediated by language but also by artifacts like research papers, which provided the participants with common knowledge to deepen the discussion and allow the emergence of collective agency from individual initiatives. Furthermore, the extract suggests that T6 probably had a very good knowledge of T7's research area and skills, which explains why she approached T7 to consult.

Research consultation did not remain at the verbal level of social interaction and information sharing, but was extended to reading other members' research papers before they were published online. For example, T3 and T8 were doing a research project on corporate language management, in which T5 was "highly interested". T5's reflection was corroborated in T3's interview data.

T5: I approached her because I was supervising a student to do research on corporate language management. Then I consulted her, and T8 (whom T3 co-authored with) sent me the paper. I consulted T3 on how to conduct interviews and how to make interviews into textual data.

T3: The most recent interaction (with T5) was that she approached me. We [T3 and T8] were doing a paper on language management, which T5 was highly interested in. She wanted to learn about the theory and method. She read our paper when it was not even officially published... Our research focused on a Spanish bank, while she wanted to adopt a similar framework to supervise a student's research project on a Japanese bank... She then said to me that she already had the data, and wanted to make it into a paper (with me).

The above extracts reveal that T5 not only approached T3 for consultation on project-related issues, but also had the chance to read T3's paper before its publication. In other words, here the intellectual support is manifested not only in learning-oriented social interaction but also in accessing first-hand research output that was not accessible

outside the team. Moreover, reading her colleague's latest research allowed T5 to be on the same page intellectually, which enabled both more and deeper intellectual exchanges. Beyond this, T3 and T8 have something complementary to offer in that T3 has expertise in corporate language management, while T5, as a Japanese teacher, has data access at a Japanese corporation. These probably explain T5's act of seeking collaboration with T3, indicating strengthened ties and resulting in intellectual support—a sign of the emergence of collective agency in doing cross-linguistic research through collaboration. It should be emphasized that none of these interactions would have been possible if T5 had not been aware of the research projects that were going on within the team, such as T3 and T8's study. It was her updated knowledge of other actors' research progress that allowed her to be supported intellectually.

This intellectual support was more intense when the participants were engaged in collaborative projects, which occurred at the level of subgroups. All the participants were reportedly collaborating with other members; T8 was engaged in four collaborative projects with five other members, the most in the team, which may be explained by her central position in the team. Such intense collaboration resulted in long-term relationships in which members routinely learned from each other. The following extracts discuss the intellectual support within a cross-linguistic project involving a French teacher and two English teachers, T2, T7, and T8. Their project was about teachers of “small languages” – a literal translation of Chinese way of saying about languages other than English (LOTEs).

T8: In the collaboration with T2 and T7, we started with a project on the professional development of small language teachers. T7 is good at teacher development while T2 has worked on small language teachers and students' motivation for years. When I collaborated with them, I was able to access good research and literature quickly, along with some research methods... When preparing the manuscript, T2 and I read together and had discussions on writing up the literature review... This kind of collaboration pushed me to read and think more, and to enter a new area more quickly through discussion with colleagues who are familiar with that field.

T2: I would approach T7 primarily when I needed to discuss with her about the structure of the paper. She would give me some advice. When I finished writing, T7 would read and revise my writing. When I was confused by some concepts, I would also ask her... T8 helped really a lot... It was her who ushered me into the field of multilingual education.

The above narratives from T8 and T2 suggest that they were able to learn from each other and make progress through multiple forms of social interaction including sharing literature, reading together, consulting others, eliciting and giving feedback, and discussing different aspects of the project. Based on a range of interactions, they were able to “enter a new area more quickly” and act agentively to conduct cross-linguistic research. Apart from their common interest in the relevant area, the three actors' expertise complemented each other. T2 has first-hand experience of working as a “small language” teacher while T7 and T8 have expertise in language teacher development, which brought in multiple perspectives or ideas to make a vibrant cross-linguistic research subgroup.

Instrumental relationships were also found in the team as a whole, particularly when they participated in collective activities that not only enabled the flow of information and resources but also inspired more ideas, resulting in more collaborative projects. For example, the team organizes seminars and meetings regularly throughout semesters. The members present their ongoing projects or working papers in seminars, and they also share their research progress in team meetings. According to T2's narrative, seminars within the team enable them to “cooperate with or help each other”:

T2: I think seminars are helpful in that they let other team members know what they are doing and learn about others' progress and ideas. If you happen to be interested in someone's research, you may seek possibilities of collaboration with him/her. If you have any questions, you can consult. All in all, we cooperate with or help each other.

The above extract reveals that collective activities like seminars strengthen instrumental relationships among members by providing a space to enhance or update their knowledge of each other's research that may be embryonic, full-fledged, or somewhere in between. In this way, members will gain better relational knowledge, that will then allow them to engage in in-depth intellectual exchange which, in turn, facilitates the emergence of new collaborative projects and collective agency.

Apart from within-team activities, members also attended and presented at conferences together. For example, the team attended a conference on multilingual education in 2019, and many did conference presentations. T1 recalled his conference experiences as very beneficial in terms of getting to know a researcher from an ethnic minority region:

T1: We were encouraged to attend conferences. I did not want go but was persuaded to go together with the team... It turns out that I am the best beneficiary. I met Nancy and we later collaborated and published a paper... It was very fruitful. It's like a farmer engaging in farming that results in rice. I have had the chance to co-author with someone, which is something very real.

The extract above indicates that T1 obtained “something very real” from his conference participation; that is, he met a potential collaborator and they eventually had a co-authored paper on the multilingual practices of ethnic minority students published. This kind of intellectual support may not have been available if T1 had not attended the

conference with the team. In other words, collective activities create more opportunities for building and strengthening instrumental relationships beyond the team, which then expands the scope of collective agency.

2) Emotional support in expressive relationships

The data reveals that the majority of the participants (6 in total) feel publication pressure because of the stringent research policy at the focal university. When they were engaged in expressive relationships, they were found to support each other affectively at each of the three levels, including individuals, subgroups, and the group as a whole. The major theme was to provide encouragement to each other during social interactions and events, as well as sharing pressure and encouraging feelings that “I am not alone.”

The data reveals that 6 out of the 7 participants felt pressure to publish, although they still maintained a positive attitude towards the research policy. For example, T2 was one of the participants who faced the up-or-leave policy. When she recalled her six-year experience, emotions like anxiety, worry, and nervousness emerged periodically.

T2: At the beginning, I was not anxious. In the third year, I felt a bit anxious because I felt I was doing nothing... When there were colleagues leaving in their fourth year, I felt I must get two B-level articles published. In the fifth year, I hadn't started my grant project and started to feel nervous. The incompleteness of the grant project would not secure me a B. I was worried that I couldn't reach the assessment criteria, and got anxious again...

The extract reveals negative emotions triggered by the pressure resulting from “reaching the assessment criteria” to secure her job position. This emotion was reinforced by her knowledge that colleagues were leaving the university, illustrating the negative consequences of not meeting the criteria. The limited time frame was also a key source of anxiety, as it often takes years to complete a grant project. According to the university's research policy, only a completed grant project can be counted as a B-level research product, while the research criterion was to achieve two B-level research products in six years. This was a large part of why T2 felt such pressure and anxiety.

This kind of pressure was also transferred to other participants who were not affected by the up-or-leave policy. For example, T5 admitted that she felt “a lot of pressure” even though she was already an associate professor and therefore was not facing the up-or-leave policy.

T5: Yes, I feel a lot of pressure, although I am not affected by the up-or-leave policy... I often use the policy standard to evaluate my research capability, and then I have found myself really bad. I would often hate myself, and give up, that way.

The extract reveals that even though T5 had secured her position, she was still very much affected by the research policy which triggered a lot of negative emotion. Thus, dealing with pressure and the concomitant emotions constituted part of professional life for these participants.

In response, the participants engaged in expressive relationships that were found to have a profound impact on their mental health and well-being. The most commonly recurring theme was encouraging or supporting each other, which occurred at multiple levels. At the individual level, 6 out of 7 participants felt encouraged by their team members in various ways. For example, T6 talked about the expressive relationships established in daily encounters with multiple team members, an experience that was corroborated by T5's interview data:

T6: We support each other, which I think is quite good. For example, although T2, T5, and I do research in different fields, we often boost morale for each other ... because our offices are quite close, we all encourage each other. Then T1 likes to join us and say “write quickly” to push us.

T5: Because we are office neighbors, she [T6] often came to me to provide empathy given my heavy workload. She would send me some snacks and she was very nice. She would ask me, “why haven't you been smiling recently?”, and comfort me spiritually.

The above extracts suggest that T5 and T6 maintained an expressive relationship that was mutual and which occurred on a daily basis. This kind of expressive relationship was not only related to “boost[ing] morale” for achieving academic goals, but also to showing care for colleagues through snack sharing and daily greetings. Moreover, the expressive relationship was extended to other members, such as T1 who would “push” colleagues to write, a different mode of encouragement and support. Physical proximity played a pivotal role in these different forms of encouragement, as the closeness of office location was mentioned in both extracts. This kind of office talk also occurred between T4 and T7, since T4 noted that sharing an office with T7 and the ensuing opportunities to dine together made it more convenient for them to support each other emotionally.

Another recurring theme in these expressive relationships was to share challenges and pressure by way of *tu-cao*, a friendly form of venting, roasting, or whining about something. T8 admitted that many members vented about the difficulties or frustrations that they encountered in the process of publication. In the following extract, T8 talked about how T1 came to her for emotional support.

T8: We have some emotional support. For example, she would vent the challenges to me when she was rejected by a few journals. When she was confronted with some adversities, she would also come to me to *tu-cao*.

The above extract confirms that rejection can be part of professional life. Being involved in an expressive relationship allowed T1 to vent her frustrations to someone who would understand her situation. Another reason why participants like T1 chose to approach T8 to vent was possibly because she occupied the most central position in the team, according to the questionnaire. T8 knew everyone well enough that other members believed that she was able to understand their frustrations. This kind of affective support was very much needed and valued by the participants as they “need someone to vent” (T4) and were able to “release stress in this kind of communication” (T5).

The expressive relationships established through ‘encouragement’ and ‘*tu-cao*’ were strengthened when the participants became engaged in research collaborations. As collaborators, they provided different affective support since they usually had more frequent interactions, either face-to-face or via group chats. For example, T2 felt “a kind of spiritual power” from the group chat that she had with her collaborators T7 and T8 on WeChat, a social network app similar to WhatsApp.

T2: We have emotional support for sure. First, it’s a kind of encouragement. We have formed a chat group. When I finished a manuscript draft, the other two teachers would provide some encouragement and compliments. That actually lent me a kind of spiritual power.

The above extract reveals that when she was engaged in the research collaboration, T2 was encouraged not only when confronting difficulties but also when accomplishing something, such as completing a manuscript draft. As well as encouragement, T2 also received compliments, a more individualized form of encouragement that did not occur in expressive relationships with others who were only colleagues. The more frequent forms of encouragement among collaborators may be because they tend to share more information about their research progress. As they collaborate and develop stronger ties, they are able to sustain intellectual exchange and affective support virtually on a frequent basis. That is to say, physical proximity no longer plays a role in the emergence of collective agency.

The third recurring theme in the expressive relationship is the *I-am-not-alone* feeling, or the creation of a sense of belonging to the team. The kind of emotional support goes beyond the individual and subgroup levels, as 4 out of the 7 interviewees spoke highly of the atmosphere of the team that was emotionally supportive as a whole. For example, T4 argued that the team’s atmosphere motivated her to work harder:

T4: I think the atmosphere of the team is quite good. Everyone is very positive. Even if we do not collaborate, just having a chat will often motivate you to work harder... If everyone does not work, you will have a totally different kind of feeling.

The extract reveals that T4 was affected by the rest of the team members who were “very positive” and worked hard. The hard-working spirit became so important that she believed she would feel different if others did not work. This kind of emotional support may only exist in a network like this one, characterized by the fact that actors are highly interconnected and social interactions are evenly distributed (see the density and degree of centralization scores in section 4.1), which creates ideal conditions for the emergence of collective agency.

In addition to the good team atmosphere, members maintained expressive relationships by participating in collective activities or events. For example, many participants talked about their experiences of participating in seminars, team meetings, and workshops, and also attending conferences together outside the university. When asked about the effects of these kinds of collective activities, T3 responded in a very positive manner and confessed that “I belong to this team”:

T3: It’s helpful. I think that this kind of social activity can expand our social network and also strengthen communication so that we know each other better... Since we have this team, I feel that I belong to this team. Then I would know that we are doing something towards the same direction, including attending conferences together and also team meetings.

The extract above reveals that T3 developed a sense of belonging through participation in collective activities such as attending conferences and team meetings. This kind of belonging was further elaborated in her feeling that the team works in concert as a whole, from which collective agency emerges. The affective side of team identity was also echoed in other interviews, suggesting that participation in collective activities makes the participants feel “not alone” and “happy” (T1), “empowered” (T5), and “supported” (T3), especially when they had colleagues sitting in the audience during conference presentations.

6. Discussion

Informed by social network analysis (SNA), the study examines a group of language teachers' collective agency in research practice, as reflected in the network structure and its content in their research team. Even though the participants specialized in different languages, the questionnaire data revealed the cohesive structure of a network in which members were well interconnected and maintained two-way interactions. The qualitative data indicated intense interactions among individuals providing practical and emotional support on a frequent basis, allowing them to make agentic choices and actions collectively.

Therefore, we can extrapolate that collective agency is likely to emerge in a closely-knit network where support and resources are easily accessible, which confirms previous findings (e.g., Spicer, 2009). At the same time, the study further suggests that language may not be seen as a barrier to social interactions in this kind of network. Instead, the participants are able to transform linguistic boundaries into complementary resources that they can offer to each other, facilitating the emergence of collective agency.

In addition, the study indicates that collective agency, reflected in intellectual and emotional support, was mediated by a range of factors including artifacts, relational knowledge, and physical distance. For example, the findings suggest that expressive relationships are likely to be affected by physical proximity; that is, members may seek or provide emotional support when their workspaces are close to each other, and thus they have more chances to meet (März & Kelchtermans, 2020; Hökkä et al., 2017). However, the study also indicates that physical distance may have less influence when members have developed and strengthened ties resulting from research collaboration. In this situation they are able to overcome physical barriers easily using digital communication, when they are engaged in collaborative projects.

The effect of collective agency in providing intellectual support is mediated by relational knowledge and a variety of artifacts other than physical proximity. Because members know the location of expertise in the network, they are able to approach the right person to seek the support they require (Thomas et al., 2019), which probably explains their frequent interactions in relation to research consultation and collaboration. Beyond this, such intellectual exchanges were further mediated by research materials, including colleagues' proofs and journal articles, and collective activities such as seminars and team meetings. In other words, it is not just social interaction or collective discussion that mediates the emergence of collective agency (e.g., Zhang et al., 2019; Lipponen & Kumpulainen, 2011), but also the research materials and collective activities that provide common ground for in-depth intellectual exchange. All these factors resulted in the emergence of collective agency (Spicer, 2009). This kind of research sharing — whether written or oral — deepens and updates the members' relational knowledge, which in turn facilitates further intellectual exchange within the team. Thus this study reaffirms the importance of having shared experiences of genuine interaction or of engaging in collective activities in the emergence of collective agency (Hökkä et al., 2017), in which a closely-knit network plays a key role.

Based on the findings, we propose a multi-layered understanding of collective agency to advance our understanding of how to sustain collective agency. It emerges between individuals, within subgroups, and in the group as whole, which interact in different ways and generate a synergy to enhance collective agency (see Figure 3).

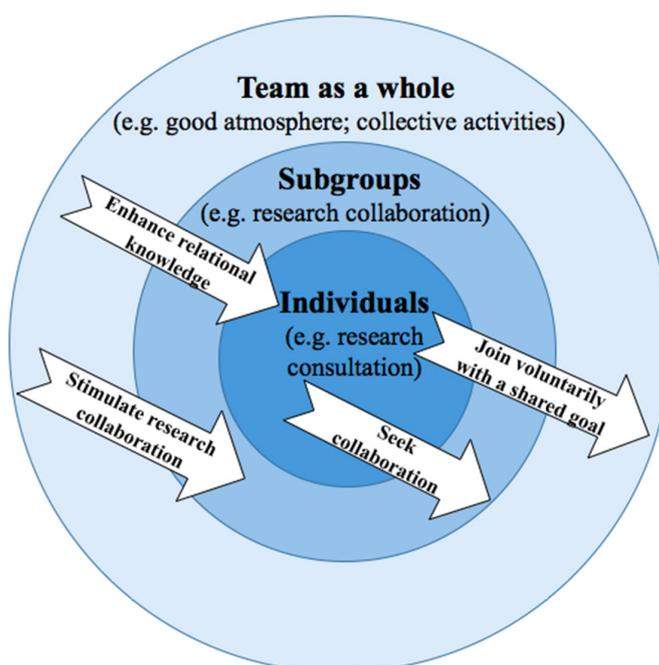


Figure 3. A multi-layered model of collective agency.

Collective agency starts with individual initiatives (Sannino, 2015), since all the members join the team voluntarily and share a common goal to enhance their research capability. Next, a wide range of collective activities in the team provides space for members to know each other, particularly in terms of their research expertise and progress, which enhances their relational knowledge and stimulates research collaboration (Hökkä et al., 2017). Finally, with better relational knowledge from collective activities, individual members are able to access resources and emotional support by approaching the right person at the individual level, and also by initiating research collaboration at the subgroup level. The interactions between these three levels of social relationship fuel and sustain collective agency in the long run.

7. Conclusion

The study adopted social network analysis (SNA) to understand the emergence of collective agency, by examining the network structure and its content of a multilingual team of language teachers in a Chinese university. The findings provide practical implications for language academics and university managers in terms of how to enhance collective agency so as to sustain the professional development of these and other scholars.

Collective agency starts with individual initiatives. Hence language teachers would be well advised to seek opportunities to initiate cross-linguistic interaction with colleagues teaching other languages, since such conversations may help them to access more information. By engaging in cross-linguistic conversations, the actors were often found to offer complementary resources contributing to the completion of a research project. They may start by interacting with colleagues of a similar age, with related research expertise and who have shared goals. However, physical distance may prevent them from starting these conversations, and university managers would be well advised to act as “match-makers” to build links among academics. They may conduct surveys among faculty members to identify those who are willing to communicate, classifying them into groups with similar traits. Then collective activities may be designed for academics, particularly novices, to get to know each other. The key to the development of relationships is that participation in the activities must be voluntary, rather than forced. Collective activities may begin with experience sharing, which everyone can talk about. Once the individuals get to know each other and develop stronger ties, physical distance becomes less of a problem. Reading/writing groups may be organized when a group of language academics finds a shared goal or similar research interests, within which collective agency may emerge.

Although great efforts have been made to ensure the rigor of this study, the findings should be interpreted with caution. This was a small-scale study based on a research team consisting of eight academics in a Chinese university. Thus, the findings may not be generalized to a wider scope of professional communities. In addition, it was a retrospective study that traced the development of a research center, in which the participants’ recall of social interactions may not have been accurate or complete. Thus, we call for additional longitudinal studies to document the emergence and enhancement of collective agency over a longer span of time.

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References

- Archer, Margaret. 2011. *Being Human: The Problem of Agency*. Cambridge, Cambridge University Press.
- Bandura, Albert. 2006. Toward a Psychology of Human Agency. *Perspectives on Psychological Science*, 1(2), 164-180, 10.1111/j.1745-6916.2006.00011.x
- Borgatti, Stephen. P.; Brass, Daniel. J., & Halgin, Daniel. S. 2014. Social network research: Confusions, criticisms, and controversies. In Daniel J. Brass, Giuseppe (JOE) Labianca, Ajay Mehra, Daniel S. Halgin, eds., *Contemporary Perspectives on Organizational Social Networks*. Emerald Group Publishing Limited, 1-29.
- Edwards, Anne. 2011. Building Common Knowledge at Boundaries between Professional Practices, *International Journal of Educational Research*, 50, 1, 33-39.
- Edwards, Anne; D’Arcy, Carmen. 2004. Relational agency and disposition in sociocultural accounts of learning to teach. *Educational Review*, 56(2), 147-155, 10.1080/0031910410001693236
- Froehlich, Dominik; Waes, Sara; Schoonenboom, Judith, & Schäfer, Hannah. 2020. Linking quantitative and qualitative network approaches: A review of mixed methods social network analysis in education research. *Review of Research in Education*, 44, 244-268, 10.3102/0091732X20903311
- Guo, Yadong 郭亚东; Sit, Helena 薛馨华, & Bao, Min 鲍敏. 2020. Sustainable careers of teachers of languages other than English (LOTEs) for sustainable multilingualism in Chinese universities. *Sustainability*, 12(16), 6396, 10.3390/su12166396

- Herz, Andreas; Peters, Luisa, & Truschkat, Inga. 2015. How to do qualitative structural analysis: The qualitative interpretation of network maps and narrative interviews. *Forum Qualitative Sozialforschung/Forum: Qualitative Social Research*, 16 (1), <https://doi.org/10.17169/fqs-16.1.2092>
- Hökkä, Päivi; Vähäsantanen, Katja, & Mahlakaarto, Salme. 2017. Teacher educators' collective professional agency and identity – Transforming marginality to strength. *Teaching and Teacher Education*, 63, 36-46, 10.1016/j.tate.2016.12.001
- Ibarra, Herminia. 1993. Personal Networks of Women and Minorities in Management: A Conceptual Framework. *Academy of Management Review*, 18(1), 56-87, 10.5465/amr.1993.3997507
- Ibrahim, Solava S. 2006. From Individual to Collective Capabilities: The Capability Approach as a Conceptual Framework for Self-help. *Journal of Human Development*, 7(3), 397-416, 10.1080/14649880600815982
- Lasky, Sue. 2005. A sociocultural approach to understanding teacher identity, agency and professional vulnerability in a context of secondary school reform. *Teaching and Teacher Education*, 21(8), 899-916, 10.1016/j.tate.2005.06.003
- Lipponen, Lasse; Kumpulainen, Kristiina. 2011. Acting as accountable authors: Creating interactional spaces for agency work in teacher education. *Teaching and Teacher Education*, 27(5), 812-819, 10.1016/j.tate.2011.01.001
- März, Virginie; Kelchtermans, Geert. 2020. The networking teacher in action: A qualitative analysis of early career teachers' induction process. *Teaching and Teacher Education*, 87, 1-15, 10.1016/j.tate.2019.102933
- Mathieson, Suson. 2011. Developing academic agency through critical reflection: a sociocultural approach to academic induction programmes. *International Journal for Academic Development*, 16(3), 243-256, 10.1080/1360144X.2011.596730
- Melasalmi, Anitta; Husu, Jukka. 2019. Shared professional agency in Early Childhood Education: An in-depth study of three teams. *Teaching and Teacher Education*, 84, 83-94, 10.1016/j.tate.2019.05.002
- Moolenaar, Nienke M. 2012. A social network perspective on teacher collaboration in schools: Theory, methodology, and applications. *American Journal of Education*, 119(1), 7-39.
- Pyhältö, Kirsi; Pietarinen, Janne, & Soini, Tiina. 2015. Teachers' professional agency and learning—from adaption to active modification in the teacher community. *Teachers and Teaching*, 21(7), 811-830, 10.1080/13540602.2014.995483
- Sannino, Annalisa. 2010. Teachers' talk of experiencing: Conflict, resistance and agency. *Teaching and Teacher Education*, 26(4), 838-844, <https://doi.org/10.1016/j.tate.2009.10.021>
- Sannino, Annalisa. 2015. The principle of double stimulation: A path to volitional action. *Learning, Culture and Social Interaction*, 6, 1-15, <https://doi.org/10.1016/j.lcsi.2015.01.001>
- Sloan, Kris. 2006. Teacher identity and agency in school worlds: beyond the all-good/all-bad discourse on accountability-explicit curriculum policies. *Curriculum Inquiry*, 36(2), 119-152, 10.1111/j.1467-873X.2006.00350.x
- Spicer, David H. Eddy. 2011. From artefact to tool: teachers' collective agency in school reform. *Pedagogies: An International Journal*, 6(4), 359-380, 10.1080/1554480x.2011.614798
- Tao, Jian 陶坚; Gao, Xuesong 高雪松. 2017. Teacher agency and identity commitment in curricular reform. *Teaching and Teacher Education*, 63, 346-355, 10.1016/j.tate.2017.01.010
- Tao, Jian 陶坚; Zhao, Ke 赵珂, & Chen, Xiuwen 陈修文. 2019. The motivation and professional self of teachers teaching languages other than English in a Chinese university. *Journal of Multilingual and Multicultural Development*, 40(7), 633-646, 10.1080/01434632.2019.1571075
- Thomas, Laura; Tuytens, Melissa; Devos, Geert; Kelchtermans, Geert, & Vanderlinde, Ruben. 2019. Beginning teachers' professional support: A mixed methods social network study. *Teaching and Teacher Education*, 83, 134-147, 10.1016/j.tate.2019.04.008
- Toom, Auli; Pyhältö, Kirsi, & Rust, Frances O'Connell. 2015. Teachers' professional agency in contradictory times. *Teachers and Teaching*, 21(6), 615-623, 10.1080/13540602.2015.1044334
- Tran, Anh; Burns, Anne, & Ollerhead, Sue. 2017. ELT lecturers' experiences of a new research policy: exploring emotion and academic identity. *System*, 67, 65-76, S0346251X16304389
- Vähäsantanen, Katja; Paloniemi, Susanna; Räikkönen, Eija, & Hökkä, Päivi Kristiina. 2020. Professional agency in a university context: Academic freedom and fetters. *Teaching and Teacher Education*, 89, 1-13, 10.1016/j.tate.2019.103000
- Zhang, Si 张思; Wen, Yun 温韞, & Liu, Qingtang 刘清堂. 2019. Exploring student teachers' social knowledge construction behaviors and collective agency in an online collaborative learning environment. *Interactive Learning Environments*, 1-13, 10.1080/10494820.2019.1674880
- Zheng, Yongyan 郑咏滢; Gao Xuesong 高雪松. 2016. Chinese Humanities and Social Sciences Scholars' Language Choices in International Scholarly Publishing: A Ten-year Survey. *Journal of Scholarly Publishing*, 48(1), 1-16, 10.3138/jsp.48.1.1.