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Informal Academic Networks and the value of significant social interactions supporting quality assessment practices

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This research investigated social interactions within small significant networks across a range of higher education settings to determine their role in supporting improvements to assessment. Thirty-four academic staff from three higher education settings (Australia, Canada and Sweden) provided assessment change examples and drew network diagrams to explain their interactions. Significant social interactions were defined as engaged exchanges between people who trust and respect each other around topics that hold common value. They led to an emotional response, promoted reflection and resulted in action and/or a shift in thinking. Significant social interactions were demonstrated to be effective in supporting changes in assessment practices. The qualitative findings were supplemented with the quantitative investigation of the relational ties within the networks. The most significant relational ties related to changes in assessment were the value of the interactions (d=.64) and the similarity between individuals (d=.50). Authors recommend that leaders in higher education heed lessons learned about how value was generated within networks and utilised for improvement activities. It is suggested that the following positive change-oriented behaviours be developed and actively encouraged: Building of diverse networks; appreciating reciprocity; forging trust; creation of time and space for significant social interactions; and external recognition of the shift toward quality assessment practices. This study builds on existing literature for improving teaching and assessment in higher education and particularly highlights the benefits of informal academic networks and the potential for significant interactions as a mechanism for change toward a quality agenda.

Introduction

In the past few decades, there have been sweeping reforms across the world aimed at improving the quality of higher education, led by groups such as the Organization for Economic Co-operation and Development (OECD), pushing recommendations for quality changes through policy levers for accountability and compliance (Barrie et al., 2011; González & Wagenaar, 2003; Harris, 2009; Hénard & Roseveare, 2012; Jankowski et al., 2013). In response, institutions have implemented learning outcomes across the breadth of the curriculum. Strategies for assessing these outcomes have tended to be either external to the classroom experience (standardised measures) or lacked consistency and defensibility (Kuh et al., 2015; Miller, 2001; Tremblay, 2013).

Academics often resist change in higher education (Kezar, 2013), and when policy drivers dictate assessment practice, assessment for accountability purposes can undermine meaningful learning (Biggs, 2014; Boud & Dochy, 2010; Craft, 2018; Rhodes & Finley, 2013). "Quality assurance has created an unfortunate divide between formal rules and routines, and the daily practices in academia associated with teaching and learning" (Mårtensson et al., 2014, p. 534). Assessment should be undertaken for purposes such as diagnostic assessment, used to identify individual strengths and areas for improvement; formative assessment, used by teachers during the learning process; or summative assessment, implemented at the end of a learning sequence for grading or certification (Wiggins & McTighe, 2005). Quality assessment practices involve measuring characteristics of individuals expressed at varying levels of acceptability to assess student learning in a fair, valid and reliable way with appropriate standards and criteria for making judgements about quality (Biggs, 2011; Boud, 2000). Academic staff need to develop capabilities to achieve this within a supportive climate, building a culture of assessment for learning (Henderson, 2017; McGrath, 2017).

Lately, professional networks have been demonstrated to sway resistance to change (Lieberman, 2009), as interconnections of networks "may be seen as the way in which knowledge development is tested against professional norms" (Trowler, 2001, p. 91). Communities of practice (Wenger, 1998) offer collegial support networks, leading to professional growth and discussions around disciplinary teaching (Middendorf, 2004). These conversations about teaching function as informal learning and can contribute in meaningful and important ways to academic and professional growth (Thomson & Trigwell, 2018). Networks can have a significant impact on whether individuals decide to engage in reform (Thomson, 2013). To better understand this, we turn to social network theory.

Social Network Theory

A social network comprises sets of relationships between people who interact to give or receive advice or to share knowledge or resources (Pataraia et al., 2014). Social network theory describes the study of structures, properties and ties between individuals, groups or organisations (Borgatti et al., 2009). Kilduff and Tsai (2003) discussed reciprocity at the core of network connections, that social network ties can build social capital, and that social relations developed can link micro and macro levels (Williams et al., 2013). That is to say that these relationships can build alignment between the activities of academic practitioners and the goals of senior leadership. Social network

theory suggests that "informal webs of relationships are often the chief determinants of how well and how quickly change efforts take hold, diffuse, and sustain (Daly, 2010, p. 2).

Small Significant Networks

Building on the work of Roxå and Mårtensson (2009, 2013, 2015), we understand that academic microcultures in higher education influence academics toward certain behaviour. Small significant networks are informal and involve interactions between a small number of trusted individuals who discuss teaching-related issues (Poole et al., 2018). The purpose might be to "vent about teaching-related issues, to reassure themselves about their teaching, to manage their teaching context, to improve their teaching and student learning, (or) to evolve their teaching, thinking and practice" (Thomson, 2013, p. 93). Bonds in small significant networks tend to form when individuals share similar characteristics and beliefs; this characteristic is referred to as homophily (McPherson et al., 2001). Yet, there can be benefits in interactions between those with differing ideas if a climate of trust is established; trust enables the adoption of new information and concepts (Chen & Wang, 2008). If we want to leverage the potential benefits of interactions within small significant networks in supporting changes to assessment, we need to better understand how they work for this specific purpose.

Purpose

The goal of the current study was to define significant social interactions and pilot the investigation of small significant networks across a range of higher education settings and disciplines. The purpose was to determine how significant social interactions within these networks aid in changing assessment practices. To the authors' knowledge, there is no precedent for this work in the social network literature, and "researchers studying formal organisations have typically ignored social networks and their informal leaders that can create social capital" (Kezar, 2014, p. 117). This investigation adds a new dimension to existing research on the role of small significant networks in improving teaching (Pataraia et al., 2014; Pifer, 2010; Roxå & Mårtensson, 2009; Thomson, 2013; Thomson & Trigwell, 2018; Van Waes, 2017).

Research Questions

1. What value is found in small significant networks?
2. How do participants define significant social interactions?
3. How do significant social interactions within the network support changes to assessment?

Methodology

Phenomenology "emphasises the attempt to get to the truth of matters, to describe phenomena" (Moran, 2002, p. 4). Social networks are a lived experience, thus exploring the phenomena through narratives offers insights into people's experiences (Van Manen, 2016). Research into social network phenomena is expanding both in the macro direction, with very large network configurations, and in the micro direction, focused on cognitive and personality perspectives (Kilduff & Brass, 2010). The former are commonly studied by plotting a complex array of interdependent individuals and groups as they relate to each other using objective sociograms to track unbounded networks. The latter have an egocentric context centred on individuals and the

relationships they form (Marsden, 2002). With social networks, it is difficult to directly observe their impact on change without influencing the outcome (Treagust et al., 2014). The narrative methodology allows the examination of people's perceptions of their networks and the interactions within.

Methods

The episodic narrative interview method (Flick, 2000) was used to elicit reflection of a specific experience within contextual bounds; the episodic narrative process prompted participants to recount a stand-out experience of assessment change (Simper, 2020). The narrative was combined with a sociometric technique (Avramidis et al., 2017), with participants drawing a network diagram to situate the episodic narrative within the participant's small significant network. The network diagram protocol was piloted in Poole et al. (2018); participants drew diagrams of their teaching-related small significant networks and the interactions between members, characterised by the relational ties of direction. The prompts for these are described in the interview protocol section below. Interviews were conducted individually, enabling participants to think-aloud (Fonteyn et al., 1993) and explain the interactions within the networks.

Sampling/ Participants

Sampling was designed to facilitate the representation of early-, mid-and late-career academics from a range of disciplinary backgrounds and institutions across three continents. Participants were therefore selected from a range of disciplinary representations with varying institutional seniority. Purposeful sampling was employed to focus on the role networks play in improving assessment practice. The sample was drawn from those in an academic teaching role who were known to have engaged in teaching or assessment improvement activities, for example, adopting active learning strategies, redesigning assessment rubrics or moving to case-based learning and assessment. Participants were recruited from three medium-sized, doctorate-granting, research-intensive universities, one in Australia (n=11), one in Canada (n=12) and the other in Sweden (n=11). Ethical consent of research data was obtained according to each institution's requirements. Interviews were conducted in a one-to-one setting and audio recorded for transcription purposes. Transcripts were numbered to protect participant identity, with numbering coded for reference to the country and individual. For example, #205 means country 2 and participant 5.

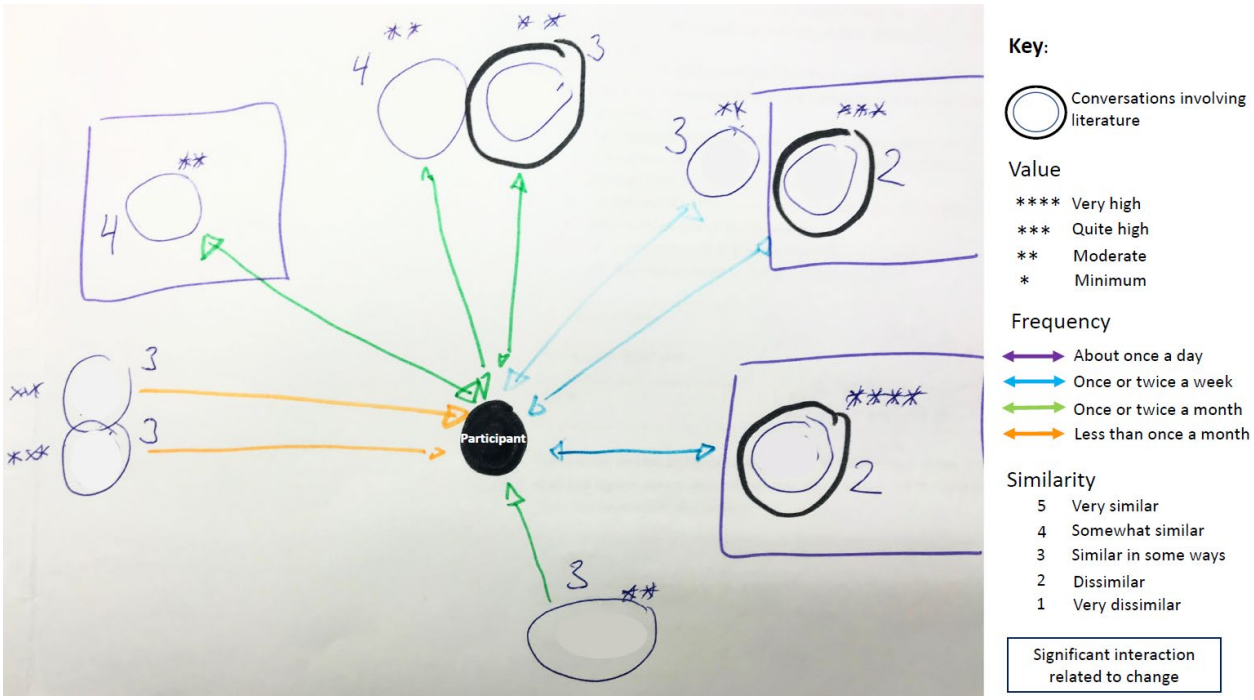
Interview protocol

Introductory questions in the interview protocol related to the participants' position, years of teaching and a short description of assessment in the department. For the episodic narrative, participants were asked to describe an example of assessment change that was meaningful for them, providing as much detail as possible. Participants then were prompted to draw a diagrammatic representation of their social network interactions. The members of the network were not limited to people involved in the assessment change example. The final question was about how the participant would define a significant social interaction. Figure 1 displays an authentic, direct example of a participant's map and indicates the numerical coding for the prompts:

1. Draw a circle in the centre of the paper to represent yourself.

2. Think of your academic network and draw circles to represent the people that you interact with about teaching and learning.
3. Draw a second circle around the people with whom you have conversations that involve literature or research. (Research in the context of teaching and learning. These network relationships are referred to as "involving literature" from this point forward).
4. Use the colour markers provided to indicate the frequency of these conversations.
5. Draw arrows to represent the direction of the communication.
6. Use asterisks to indicate the value you see in that interaction.
7. Beside each network member, write a number between 1 and 5 to indicate how similar you think that person is to you in terms of the beliefs they hold about teaching and learning.
8. When I say significant social interactions, what does that mean to you? Draw a box around any of the significant social interactions involved in your assessment change.

Figure 1. A participant's network diagram (identifiers removed), indicating coding of node-links



Analysis

The deductive analysis of the episodic narratives and think-aloud responses was grounded in Social Cognitive Theory (Bandura, 2011) and value creation in social interactions (Van Waes et al., 2016): immediate, potential, applied, realised, reframing or aspirational value. The first author conducted the qualitative analysis, and the validation process involved members of the research team independently coding a subset of responses. Any differences in interpretation were discussed and reconciled for the investigation of research questions 1 and 2. The network maps were numerically coded for quantitative analysis related to research question 3. Correlations were drawn between the network interactions, and analysis of variance was utilised to differentiate interactions involved in change versus other interactions in the network.

Results

Table 1 displays the number of participants from each university, a breakdown of their rank and the areas in which they teach.

Table 1. Participant learning areas and rank.

Discipline	Sweden	Canada	Australia	Graduate/ Teaching support	Sessional / Adjunct	Lecturer/ Assistant Professor	Senior Lecturer/ Associate Professor	Professor / Head of dept.
Business	1	0	1	1	0	0	1	1
Education	1	0	1	1	0	0	1	0
Engineering	2	4	4	1	2	0	5	2
Health Sciences	2	3	0	0	0	2	2	0
Humanities	0	1	2	0	0	1	2	0
Sciences	2	1	2	0	0	1	4	1
Social Sciences	3	3	1	0	1	1	3	1
TOTAL	11	12	11	3	3	5	18	5

Participants selected examples of changes to assessment that they found meaningful. These examples were grouped into five general categories (see Table 2). Participants described changes to one or more of the following areas: changes in structures for providing feedback, development of assessment criteria, changes toward authentic assessment and assessment in group or professional contexts. There were changes relating to an online delivery method and instances where the participants initiated processes for consistent assessment (calibration using rubrics or moderation of marking student work samples). Some of the examples included more than one type of change.

Table 2. Type of assessment changes as described in participant's narratives

Assessment change example described the development or adoption of:	Number of cases			Percentage of cases
	Site 1	Site 2	Site 3	
Peer/ instructor feedback	4	4	2	29%
Assessment criteria	2	7	1	29%
Authentic assessment	4	3	3	29%
Group/professional assessment	1	2	4	20%
Assessment for online learning	1	1	2	11%
Processes for consistent assessment	0	1	2	9%

The value in small significant networks

The participant responses were coded using the Van Waes et al. (2016) framework for value type. The specific cues that researchers used for interpretation of the data are included in Table 3; interactions were listed under the roles of the people with whom they occurred.

Table 3. Coding value of interactions

Type of value: Van Waes descriptor	Coding cues	People with whom these interactions happened									
		Co-teacher	Department Peers	Peers outside department	External	Teaching assistants/ Graduate students	Undergraduate Students	Central education support	Department/ technology support	Admin support	Leadership
Immediate: Interactions that produce value in and of themselves.	Past tense; personal, reflection, reassurance.	6	1			6					
Potential: Knowledge capital, whose value lies in its potential to be realised later.	Future tense, learning from experience; shared view; ideas, sounding board.	1	7	7	3			7	1	2	2
Applied: Interactions that have caused actual changes in practice.	An outcome, administrative, pragmatic or relating to student needs	1	1		2	1	8	1	5	7	5
Realised: Indicates actual improvement in performance resulting from suggestions or ideas.	Past tense; positive outcome(s).		2	1	3	1			1		
Reframing: Redefining or reframing goals, values or strategies.	Challenge thinking "coming to an agreement", "debating."	2	3	2	1				3		
Aspirational: The expected value. Future aspirations rather than already acquired resources that show potential.	Future tense, speculative, people that will definitely be valuable in the future.		2	2				1			

Immediate value

Immediate value resulted from interactions that were personally beneficial. This was most commonly observed in interactions with peers closely involved in teaching. Value was attributed to venting or reassurance, for example, *she also teaches a big course and we also talk about our frustrations and support each other in that way* (#205), or *...with the others listening to me, and saying this seems like a good idea* (#209). There was immediate value in interactions between similar people. As participant #102 put it, *I like to work with the person who really helps me think…. and also, significant is fun to work with*. Interactions with dissimilar individuals can involve more risk-taking, but can also be beneficial, *well, there are similarities to all these people; otherwise I wouldn't listen to them.* [Actually] *I don't think that's true, I think that even people who are different, I think I can benefit from them* (#202).

Potential value

Interactions anchored in social or knowledge capital were potentially valuable. Potential value was evident in comments such as *that's kind of a pool of individuals who have special meaning, in the sense that long ago I learned the key players within an organisation are* (#204), or *she is the expert on that, so if it's something related to that I would talk to her* (#104). There was also a sense of shared or common ground; *we share a certain view of what higher education is all about, or we have a set of interests. Them I talk with quite a bit, actually. It can be over lunch, any time* (#103).

Applied value

Interactions were coded as applied value when they resulted in changes to practice. The interview related to assessment practice, so many of the comments were of a practical or logistical nature. *They're high value because unless I have this conversation, schedules will not be put into place* (#101). Interactions with teaching assistants were seen as applied value *because this was someone who was actually a part of putting the course together* (#206). It was noted that students were often mentioned first when participants drew their networks. Students had an applied value when their direct feedback meant that changes were made to meet their needs. *So one part of this would be when I have meetings with them regularly just asking the group 'how are things working, what problems are you having right now?'* (#109). Helping others was also seen as an applied value, *there are people that I coach and give advice to, and looking at their problems helps me with my own practice* (#202).

Realised value

Interactions that had an observable outcome were coded as realised value. For example, *my TA's* (teaching assistants) *actually provided lots of great feedback which improved the rubric* (#212). Interactions with peers were important in adopting new assessment practices: *I followed the protocol that my colleague had done previously and afterwards I started thinking about what I wanted to know* (#106).

Reframing

Reframing interactions involve the process of challenging and debating theories and ideas to come to a new understanding; they closely reflect double-loop learning processes (Argyris, 2005). "*I think that it's also good because they give an outsider's point of view; they're not from the same*

subject area, they look at things differently and so forth so in that sense it gives you a totally different sense" (#103). The current study focused on social aspects, but there were concerns with governance structures driving changes. In this example, a reframing occurred through reflection because of situational factors:

> *That worked pretty well… being taught by someone else how to do it, but a lot of the more recent changes have been mandated from on high, from the engineering accreditation board, from quality assurance and things like that. And what I've tried to do is be an optimist and say, yes we have to do this, let's try to do this so it's good, not just do the minimum to pass the bar. I've tried to learn in order to do that. Making the best of a mandated situation and try to adapt that to the way I think, and change the way I think* (#208).

Aspirational value

There were fewer comments relating to aspirational value because it indicates future worth, and participants were reflecting on past experiences. There were comments like this one though, *he is brilliant… he'll be the one I'll go to when I need to translate to that metacognitive level* (#204). This participant is talking about a person that they aren't currently working with, but mentions their potential for the future.

Defining significant social interactions

Participants were asked how they would define "significant social interaction". Evident in the responses was the relationship between cognitive, behavioural, personal, and environmental factors, traits of Bandura's (2011) social cognitive theory's determinants for motivation and behaviour. Statements from transcripts were grouped into these traits, as described in Table 4.

Table 4. Traits or a significant social interaction

Trait	Description
Cognitive	There was reference to reflection or deep thinking, the impact on learning, and numerous mentions of interactions that were valuable with comments like, *rang a bell* (#204). Many of the participants referred to changes in ideas, conceptualisations or thinking, that gave them *a lasting impression* (#110).
Behavioural	A behavioural trait that emerged was the frequency of exchange. Most participants suggested that the interaction needed to be frequent, others suggested that it had to be face-to-face, some both, *frequent communication in person. To be significant, you need to talk in-person, and more than once and a while* (#211). Doesn't have to be every day, but regularly.
Personal	There were an underlying emotional responses like*, it changes my mind, and those interactions are sometimes painful* (#102). Some of the participants defined a significant social interaction as one that motivated them for action. Enjoyment was inferred through comments such interaction with people who are *fun to work with* #102, or when (you) *feel that you're listened to* (#107). All of the participants made reference to an exchange based on respect and trust.
Environmental	The idea of a shared common ground related to environmental factors such as *aligned interests* (#211) and *conversations about our teaching experience* (#110).

Comments were synthesised to generate a generic comment, then combined into a definition:

A significant social interaction is an engaged exchange between people who trust and respect each other, around topics that hold common value, leading to an emotional response, promoting reflection, resulting in action and/or a shift in thinking.

Relationships within network interactions

The word node was used to describe the people represented on the personal network diagram. The relational ties (frequency, direction, similarity, the discussion of literature and value of the interactions) are referred to as node-links. There were 339 nodes in total resulting from the 34 network diagrams. The nodes primarily represented individuals, but in the case of groups, these were depicted as a large circle that contained many individuals. The most common groups were students, but there were some departmental groups and groups of people associated with professional associations. During the interview process, the interviewer queried the nature of the group. If the quality of interactions were consistent irrespective of a specific individual in the group, they were collapsed into a single node for the purpose of analysis. Some students fulfilled a different role (such as the class representative who met outside of class time for discussion). In those cases, the individual student became its own node. The node-links resulting from the diagrammatic representations were converted to a matrix as quantitative data for analysis.

The size of the networks varied, so to examine the relative strength of node-link relationships between different participants, the size of the network needed to be taken into account. An investigation of Pearson's correlations found a significant relationship between the years of teaching and the number of nodes in personal networks ($r(34)= .56$ $p<.001$). The node-link variables were normalised to draw a fair comparison between node-links from newer academics with smaller networks and those who had been teaching longer (each node-link data point was divided by the number of nodes in its network). Pearson's correlations were calculated to investigate the relationship between the (normalised) node-links (Table 5). There were strong positive correlations between the value of interactions, conversations involving literature, frequency and direction of interactions, and the similarity of individuals.

Table 5. Correlations between weighted node-link variables (n=339)

	Literature	Frequency	Direction	Similarity
Literature	-			
Frequency	.68**	-		
Direction	.71**	.88**	-	
Similarity	.78**	.84**	.86**	-
Value	.74**	.84**	.82**	.90**

** Correlation is significant at the 0.01 level (2-tailed).

The influence of significant social interactions on teaching and assessment

Participants were asked to identify which of the interactions they considered had a significant impact on the assessment change that they described in the interview. There were 94 nodes in total

that participants identified as significant to change (these were called change nodes). Multivariate analysis of variance was calculated to compare the change nodes with the other 245 nodes in the networks. The dependant variables were literature, frequency, similarity and value. A multivariate effect was found (Wilks' Lambda= .91 $F(5,338)=8.54$ $p<.001$); there was a significant difference between the node-link variables that were related to changes in assessment and the other nodes in the network. Examining the differences in mean and standard deviation found that the largest differences between the *change nodes* compared with the other nodes in the network were for *value*, with a mean of 3.1 (SD .88), compared with 2.5 (SD 1.0) and *similarity*, with a mean of 3.93 (SD .94), compared with 3.5 (SD 1.0). Effect sizes were calculated using Cohen's *d,* $d = \frac{m2-m1}{Pooled\ SD/2}$ with the effect of value on assessment change of d =.64. The similarity was also significant to change, with an effect of similarity on change of d =.50.

Discussion

The participants in the current study were purposefully selected because they had engaged in teaching or assessment improvement activities to provide rich descriptions of interactions related to assessment change. As universities across the world closed their doors in the response to the global COVID-19 pandemic, the situation required an almost overnight shift to remote delivery and wide-scale changes to assessment. Now more than ever it is essential for institutional leaders to create an environment rich in factors demonstrated to support assessment change. As such, valuable lessons can be learned from the current study about how to utilise significant social networks for improvement activities. These six results are suggested to create positive behaviours in the facilitation of assessment change.

1. Build diverse networks

Participants who had been teaching for longer had more people in their networks and, therefore, more people to potentially draw upon for support. Van Waes et al. (2016) also associated a greater number, multiple types of interactions, and higher levels of interdependence between experts over novices. This suggests that it would be particularly important for novices to establish networks early in their careers. When participants were asked to describe their academic networks, they all included a range of people with various roles and attributed value to interactions for different reasons. Some of these were based on survival and the need to get things done, whereas other types of value were longer-term. For example, some participants mentioned that the value of teaching assistants was high because they were the ones who marked the majority of student work, the value was immediate, as in getting things done, but did not translate into the longer-term benefit. It was often students who were mentioned first when drawing the network maps. The value of interactions with students was applied directly to informing changes to teaching or assessment.

Furthermore, participants much appreciated input from teaching support centres, but the potential value was seldom applied directly to practice. Having collegial interactions about teaching was potentially valuable but did not always contribute to improvements in teaching or assessment. Simply sharing ideas, experiences or resources does not necessarily mean that value is created (Van Waes, 2017). However, there were positive outcomes when interactions with potential or reframing value were combined with the interactions of an applied or realised value. There were

many examples of new ideas developed with a trusted colleague that was enabled because the network included technological support personnel, who proposed or facilitated new strategies so that goals could be achieved. The diversity of the network facilitated change.

2. **Appreciate reciprocity**

Mutual exchange was mentioned by participants as an important component of social interactions; it might be expertise, resources, or the willingness to listen; you have to give something to get something back. This was a resounding message in the narratives and aligns with the importance of reciprocity in social networks (Kilduff & Tsai, 2003). Peers were the go-to people for dealing with problems or as a sounding-board for ideas. This reframing of ideas is what Argyris (1982) describes as double-loop learning processes. These are highly desirable in promoting a positive shift in culture or norms. These close ties are between what Handal (1999) describes as "critical friends", and those in a mutual, trusted relationship, have "the competence to analyse, discuss and critique teaching" (p. 65). Critical friends provide a sounding board for ideas and help bring about quality improvements in higher education (Andreu et al., 2003).

3. **Forge trust**

The significant interactions that influenced change were based on trust and respect. Further, relationships with people similar to themselves led to more effective communication. Tierney (2006), described a dynamic process of repeated interaction, facilitating risk-taking, innovation and experimentation, arguing that trust relationships are critical to the future of higher education. Academics fear reprisal if they make changes to assessment, because things don't always go right the first time and if students give negative comments or low scores on evaluations of teaching, that can be professionally damaging (Kozub, 2008; Uttl et al., 2017). Courage stems from knowing that 'someone has your back', especially if that person is a head of department. The trust relationships were key drivers for quality-based changes to assessment such as changes to make expectations clearer, to develop authentic assessments and mechanisms for feedback to be used for improvement.

4. **Create time and space**

Frequent, mutual (two-way) interactions were associated with value, echoing the Rogers (2003) finding that the closer the proximity, the more frequently members of a network were likely to interact. Participants commented that their interactions were limited by available time for conversations and also mentioned that they ended up having conversations in the hallway. Time and space for informal networks need to be created, together with building trust within the academic community.

5. **Recognise the benefits**

New academics with busy schedules who focus on the tasks of teaching and research may not see the benefits of creating network connections, thus don't invest the time to make those important relationships (Niehaus & O'Meara, 2015). "Globally, institutions continue to tackle questions of excellence in university teaching… and added urgency has arisen around engagement with notions of excellence in university teaching" (Gunn & Fisk, 2013, p. 9). The desire to be part of an

academic community might be encouraged through tenure and promotion metrics. Although it was not an area of investigation in this study, it was observed that more than half of the participants who had engaged in teaching and assessment improvement activities had subsequently gained tenure. These people all had close network ties and leveraged support from academic peers and support centres.

6. Change the culture

Daly (2010) warns of a flawed belief that if individuals are provided with overwhelming evidence from an external expert, they will change. "However, in practice… a wonderful idea is presented, a few passionate individuals champion that effort, then it fails to be sustained" (Daly, 2010, p. 2). This problem suggests a need to change cultures, or collegial norms or traditions. Implementing policy and guidance documents directed at improving the quality of higher education remains challenging. Academics learn from peers that they trust. This is especially important in situations where a rigid assessment policy has been used to force change. There were participants who had come to terms with the assessment policy and actually used the policy guidelines to engage in positive change. Through a process of socialisation, these participants actively shared their understanding. This can instigate a culture shift (Tierney & Rhoads, 1993). Like the work on significant conversations (Roxå & Mårtensson, 2009), the positive effects of small significant networks could influence the adoption of quality assessment practices aligning with the goals of senior leadership (Williams et al., 2013).

Limitations

Data were collected from three medium-sized research-intensive institutions and the results were based on 34 participants. Inferences made based on the analysis may not be generalisable to other educational sectors. The sociometric method used was limited by participant perception and historical recall. A strategy for navigating this limitation was the mixed design, incorporating the interview component, thereby allowing participants to think through the nature of their relationships as they explained them. Furthermore, the word value was used throughout the text, but there was subjectivity on the part of the participant in attributing value. It is stated in the methods section that what was being discussed was perceived value, reiterated here for clarity. It would have been challenging to test the conformity or accuracy of the network diagrams. There was no intention to do this because the work was focused on the individual's perception of the network and its associated value rather than on the objective accuracy of those networks.

Conclusions

The current study investigated small significant networks and interactions significantly related to changes in assessment. Thirty-four participants from higher education settings in Australia, Canada and Sweden provided a narrative account of a significant change they made to assessment and drew a diagram of their academic networks and interactions therein. Significant social interactions were demonstrated to be effective in supporting changes in assessment practices. The most significant relational ties related to changes in assessment were the value of interactions (d=.64) and similarity between individuals (d=.50). This research provides evidence for the value of significant social interactions. It is suggested that institutional leaders keenly focus on the

following positive change-oriented behaviours: Building diverse networks; appreciating reciprocity; forging trust; creating time and space for significant social interactions; recognise the benefits of networks and developing a cultural shift toward quality assessment practices. Additional research is necessary to investigate these levers for small significant networks and to determine what mechanisms are most effective in instigating and supporting changes to assessment practices.

References

Andreu, R., Canós, L., de Juana, S., Manresa, E., Rienda, L., & José Tarí, J. (2003). Critical friends: A tool for quality improvement in universities. *Quality Assurance in Education*, *11*(1), 31–36.

Argyris, C. (1982). The executive mind and double-loop learning. *Organizational Dynamics*, *11*(2), 5–22.

Argyris, C. (2005). Double-loop learning in organisations: A theory of action perspective. In *Great minds in management: The process of theory development.* (pp. 261–279). Oxford University Press.

Avramidis, E., Strogilos, V., Aroni, K., & Kantaraki, C. T. (2017). Using sociometric techniques to assess the social impacts of inclusion: Some methodological considerations. *Educational Research Review*, *20*, 68–80.

Bandura, A. (2011). Social Cognitive Theory. In *Handbook of Theories of Social Psychology* (Vol. 2, pp. 349–373). Sage.

Barrie, S., Hughes, C., Crisp, G., & Bennison, A. (2011). *AAGLO Summary 1: The ALTC AAGLO project and the international standards agenda*.

Biggs, J. (2014). Constructive alignment in university teaching. *HERDSA Review of Higher Education*, *1*(1), 5–22.

Biggs, J. B. (2011). *Teaching for quality learning at university: What the student does*. McGraw-Hill Education (UK).

Borgatti, S. P., Mehra, A., Brass, D. J., & Labianca, G. (2009). Network Analysis in the Social Sciences. *Science*, *323*(5916), 892–895.

Boud, D. (2000). Sustainable assessment: Rethinking assessment for the learning society. *Studies in Continuing Education*, *22*(2), 151–167.

Boud, D., & Dochy, F. (2010). *Assessment 2020. Seven propositions for assessment reform in higher education* (pp. 1–4).

Chen, M.-H., & Wang, M.-C. (2008). Social networks and a new venture's innovative capability: The role of trust within entrepreneurial teams. *R&D Management*, *38*(3), 253–264.

Craft, A. (Ed). (2018). *International Developments in Assuring Quality in Higher Education*. Routledge.

Daly, A. J. (2010). *Social Network Theory and Educational Change*. Harvard Education Press.

Flick, U. (2000). Episodic interviewing. *Qualitative Researching with Text, Image and Sound*, 75–92.

Fonteyn, M. E., Kuipers, B., & Grobe, S. J. (1993). A Description of Think Aloud Method and Protocol Analysis. *Qualitative Health Research*, *3*(4), 430–441.

González, J., & Wagenaar, R. (2003). *Tuning educational structures in Europe*. University of Deusto. http://eua.be/eua/jsp/en/upload/TUNING_Announcement_Closing_Conference.1084282515011.pdf

Gunn, V., & Fisk, A. (2013). *Considering teaching excellence in higher education: 2007-2013: A literature review since the CHERI report 2007*. https://www.heacademy.ac.uk/system/files/resources/TELR_final_acknowledgements.pdf

Handal, G. (1999). Consultation Using Critical Friends. *New Directions for Teaching and Learning*, *1999*(79), 59–70.

Harris, K.-L. (2009). International trends in establishing the standards of academic achievement in higher education. *An Independent Report and Analysis*. http://melbourne-cshe.unimelb.edu.au/__data/assets/pdf_file/0005/1669343/Intl_trends_standards_Harris_Aug09.pdf

Hénard, F., & Roseveare, D. (2012). *Fostering Quality Teaching in Higher Education:Policies and Practices* (p. 53) [An IMHE Guide for Higher Education Institutions]. Institutional Management in Higher Education.

Henderson, C. (2017). *Obstacles to effective teaching in higher education: Are we using the right change strategies?* http://ir.lib.uwo.ca/wcse/WCSESeventeen/Thursday/32/

Jankowski, N., Hutchings, P., Ewell, P., Kinzie, J., & Kuh, G. (2013). The Degree Qualifications Profile: What it is and why we need it now. *Change: The Magazine of Higher Learning*, *45*(6), 6–15.

Kezar, A. (2013). Theories of Change: Change Agent Guides. In *How Colleges Change Understanding, Leading, and Enacting Change* (1st Edition, pp. 20–40). Taylor & Francis Group.

Kezar, A. (2014). Higher education change and social networks: A review of research. *The Journal of Higher Education*, *85*(1), 91–125.

Kilduff, M., & Brass, D. J. (2010). Organisational social network research: Core ideas and key debates. *The Academy of Management Annals*, *4*(1), 317–357.

Kilduff, M., & Tsai, W. (2003). *Social networks and organisations*. Sage.

Kozub, R. M. (2008). Student evaluations of faculty: Concerns and possible solutions. *Journal of College Teaching & Learning (TLC)*, *5*(11), 35–40.

Kuh, G. D., Ikenberry, S. O., Jankowski, N. A., Cain, T. R., Ewell, P. T., Hutchings, P., & Kinzie, J. (2015). Beyond compliance: Making assessment matter. *Change: The Magazine of Higher Learning*, *47*(5), 8–17.

Lieberman, J. (2009). Reinventing teacher professional norms and identities: The role of lesson study and learning communities. *Professional Development in Education*, *35*(1), 83–99.

Marsden, P. V. (2002). Egocentric and sociocentric measures of network centrality. *Social Networks*, *24*(4), 407–422.

Mårtensson, K., Roxå, T., & Stensaker, B. (2014). From quality assurance to quality practices: An investigation of strong microcultures in teaching and learning. *Studies in Higher Education*, *39*(4), 534–545.

McGrath, C. (2017). *What we talk about when we talk about change: A study of change practice and change agency in higher education* [Inst för lärande, informatik, management och etik / Dept of Learning, Informatics, Management and Ethics].

McPherson, M., Smith-Lovin, L., & Cook, J. M. (2001). Birds of a feather: Homophily in social networks. *Annual Review of Sociology*, *27*(1), 415–444.

Middendorf, J. (2004). Facilitating a faculty learning community using the decoding the disciplines model. *New Directions for Teaching and Learning*, *2004*(98), 95–107.

Miller, R. (2001). *Statewide Standardised Testing in Higher Education. Briefing Papers* (pp. 1–6). Association of American Colleges and Universities,.

Moran, D. (2002). *Introduction to phenomenology*. Routledge.

Niehaus, E., & O'Meara, K. (2015). Invisible but Essential: The Role of Professional Networks in Promoting Faculty Agency in Career Advancement. *Innovative Higher Education*, *40*(2), 159–171.

Pataraia, N., Falconer, I., Margaryan, A., Littlejohn, A., & Fincher, S. (2014). Who do you talk to about your teaching?' Networking activities among university teachers. *Frontline Learning Research*, *2*(2), 4–14.

Pifer, M. J. (2010). *"Such a Dirty Word": Networks and Networking in Academic Departments* [PennState]. https://etda.libraries.psu.edu/catalog/10566

Poole, G., Iqbal, I., & Verwoord, R. (2018). Small significant networks as birds of a feather. *International Journal for Academic Development*, 1–12.

Rhodes, T. L., & Finley, A. P. (2013). *Using the VALUE rubrics for improvement of learning and authentic assessment*. Association of American Colleges and Universities.

Rogers, E. M. (2003). Diffusion networks. *Networks in the Knowledge Economy*, 130–179.

Roxå, T., & Mårtensson, K. (2009). Significant conversations and significant networks–exploring the backstage of the teaching arena. *Studies in Higher Education*, *34*(5), 547–559.

Roxå, T., & Mårtensson, K. (2013). *Understanding strong academic microcultures: An exploratory study*. Centre for Educational Development (CED), Lunds universitet.

Roxå, T., & Mårtensson, K. (2015). Microcultures and informal learning: A heuristic guiding analysis of conditions for informal learning in local higher education workplaces. *International Journal for Academic Development*, *20*(2), 193–205.

Simper, N. (2020). Assessment thresholds for academic staff: Constructive alignment and differentiation of standards. *Assessment & Evaluation in Higher Education*, 1–15.

Thomson, K. E. (2013). *The nature of academics' informal conversation about teaching (Doctoral Thesis)*. University of Sydney.

Thomson, K. E., & Trigwell, K. R. (2018). The role of informal conversations in developing university teaching? *Studies in Higher Education*, *43*(9), 1536–1547.

Tierney, W. G. (2006). *Trust and the Public Good: Examining the Cultural Conditions of Academic Work* (Vol. 308). Peter Lang.

Tierney, W. G., & Rhoads, R. A. (1993). *Enhancing Promotion, Tenure and Beyond: Faculty Socialization as a Cultural Process.* (No. 6). ASHE-ERIC Higher Education.

Treagust, D. F., Won, M., & Duit, R. (2014). Paradigms in science education research. In *Handbook of Research on Science Education, Volume II* (pp. 17–31). Routledge.

Tremblay, K. (2013). OECD Assessment of Higher Education Learning Outcomes (AHELO). In *Modeling and measuring competencies in higher education* (pp. 113–126). Springer.

Trowler, P. R. (2001). *Academic tribes and territories*. McGraw-Hill Education (UK).

Uttl, B., White, C. A., & Gonzalez, D. W. (2017). Meta-analysis of faculty's teaching effectiveness: Student evaluation of teaching ratings and student learning are not related. *Studies in Educational Evaluation*, *54*, 22–42.

Van Manen, M. (2016). *Researching lived experience: Human science for an action sensitive pedagogy*. Routledge.

Van Waes, S. (2017). *The ties that teach: Teaching networks in higher education* [PhD Thesis]. University of Antwerp.

Van Waes, S., Moolenaar, N. M., Daly, A. J., Heldens, H. H., Donche, V., Van Petegem, P., & Van den Bossche, P. (2016). The networked instructor: The quality of networks in different stages of professional development. *Teaching and Teacher Education*, *59*, 295–308.

Wenger, E. (1998). *Communities of practice: Learning, meaning, and identity*. Cambridge university press.

Wiggins, G. P., & McTighe, J. (2005). *Understanding by design*. Association for Supervision and Curriculum Development.

Williams, A. L., Verwoord, R., Beery, T. A., Dalton, H., McKinnon, J., Strickland, K., Pace, J., & Poole, G. (2013). The power of social networks: A model for weaving the scholarship of teaching and learning into institutional culture. *Teaching and Learning Inquiry: The ISSOTL Journal*, *1*(2), 49–62.