The Role of Networking in Supporting Headteachers' Professional Development and Practice in Ghana

Thesis

The role of networking in supporting headteacher professional development and practice in Ghana

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Education and Educational Technology

Doctorate in Education
(Leadership and Management)

January 2020

DEDICATION

To Lynda, Joey, Shayne and Angel-Marie

ACKNOWLEDGEMENTS

I owe a depth of gratitude to my family, especially my wife and children, for your love and support throughout this doctoral journey. To my parents Mr and Mrs Kyeremeh, I say a big thank you for being such great motivators throughout my life journey. To Mrs Charlotte Akyeampong, whose work and dedication to teaching and learning has always been an inspiration to me, I say thank you. You will forever be in my heart. Also, special thanks to the headteachers, education officers and the district director of education for their time and patience in what I have described as quite an intrusive exercise. I very much appreciate your time and willingness to engage.

Special appreciation to The Open University for covering my tuition fees and the British Educational Leadership, Management and Administration Society (BELMAS) for the bursary award that went towards my travel expenses during the fieldwork in Ghana.

I am also grateful for the support of Dr Jane Cullen and Dr David Plowright, who have been patient and supportive throughout my doctoral journey. Your critical comments always gave me a lot of food for thought. A special appreciation also goes to Dr Christine Wise, my friend and mentor, for her motivational words over the years and critique of my drafts. A big thank you to Pam Sehmi for proofreading my final thesis. I also thank Dr Inma Alvarez and June Ayres from the EdD programme at The Open University for their words of motivation and regular reminders.

My ultimate thanks go to almighty God for his love and mercies. With God, all things are possible.

ABSTRACT

This thesis is about headteacher professional development in Ghana and headteachers' capacity to harness professional capital within their peer network to advance their practice. It is set against recent developments in Ghana around headteacher capacity building and the need to improve leadership practice in government basic schools where resources have been limited. Although networking and the notion of collaborative learning in professional learning communities are well-developed practices in some of the world's best education systems, very little is known about such developments in Ghana and how the professional capital embedded in these network relations is contributing to practice.

The research strategy is underpinned by pragmatic beliefs that research questions are the principal determinants of the research philosophy. Therefore, rather than committing to a research philosophy at the start of the study, the questions posed determined the methodological framework. Through a mixed-methods design, this empirical study deploys a two-phase sequential and exploratory strategy drawing on qualitative and quantitative datasets.

The study finds evidence of a learning community of headteachers who, through frequent network interactions, build professional capital to enhance their practice. Headteachers indicated five key content-specific types of information and professional advice they exchange in this peer network. For these types of information and professional advice, the study reveals that age, experience, type of school or academic qualifications do not significantly influence headteacher choice of who to go to for information and professional advice. However, the data indicate a positive and significant relationship between headteacher gender and their likelihood of seeking information and professional advice about how to help ineffective teachers improve their practice and how to deliver the national curriculum effectively. The findings imply that policymakers should recognise network relations that exist among headteacher groups and direct resources to supporting peer learning and collaboration rather than the over-reliance on trainer-led workshops for headteacher professional development.

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ABBREVIATIONS

ACE	Advanced Certificate in Education
BECE	Basic Education Certificate Examination
BEd	Bachelor of Education
CBI	cluster-based INSET
Cert A	Certificate A
COE	College of Education
CPD	continuing professional development
CS	circuit supervisor
DED	district education director
DFID	Department for International Development
DipEd	Diploma in Education
DTO	district training officer
EO	education officer
ESP	Education Strategic Plan
FBO	faith-based organisation
FCUBE	Free Compulsory and Universal Basic Education
GBDC	Ghana Book Development Council
GES	Ghana Education Service
GLA	Ghana Library Authority
ILG	individual learning guide
INSET	In-service Education and Training
JICA	Japan International Cooperation Agency
JHS	junior high school
JSS	junior secondary school
KG	kindergarten

MDG	Millennium Development Goal
MMDA	Metropolitan Municipal and District Assembly
MOE	Ministry of Education
MRQAP	multiple regression quadratic assignment procedure
NAB	National Accreditation Board
NCSL	National College for School Leadership
NCTL	National College for Teaching and Leadership
NaCCA	National Council for Curriculum and Assessment
NIB	National Inspectorate Board
NQT	newly qualified teacher
NTC	National Teaching Council
OU	Open University
PTPDM	Pre-Tertiary Teacher Professional Development and Management
PQTR	pupil–qualified teacher ratio
PTR	pupil–teacher ratio
QAP	quadratic assignment procedure
SBI	school-based INSET
SMC	school management committee
SNA	social network analysis
TED	Teacher Education Division
UN	United Nations
USAID	United States Agency for International Development

GLOSSARY

Basic school: in Ghana, the basic school is a combination of six years of primary school and three years junior high school, usually under one headship. There is a direct transition (within a school) from primary school to junior high school.

Bonding: in social network studies, this is the tendency for actors to be closely associated with each other (through network ties) by a shared attribute.

Bridging: in social network research**,** there is a tendency for an individual or groups to be the connection between two people or groups by their location in the network.

Centrality: this refers to the quality or fact of being in the middle; in network studies, this is used to explain the extent to which the network is dominated by any actor or actors.

Clique: in social network research, this refers to a subgroup of the network with all possible ties present and therefore represents a maximally complete subgraph (as described in graph theory).

Circuit supervisor: an officer assigned to supervise teaching and learning in an education circuit. Their responsibilities include supporting and guiding teachers and headteachers as well as organising professional development events.

Education circuit: several basic schools (between 10 and 20) within a district allocated to an education officer for supervision. It represents one educational zone.

External supervisor: a circuit supervisor located at the district level and an inspector located at the regional and central levels who pays visits to schools to promote effective teaching and learning.

Homophily: the tendency for individuals in a social network to associate with others based on their similarity or shared attributes.

National Council for Curriculum and Assessment (NaCCA): the body responsible for the setting, reviewing and leading the implementation of the national curriculum for pre-tertiary education.

National Inspectorate Board (NIB): the agency that monitors schools to ensure standards are in line with expectations set by the Ministry of Education (MOE).

National Teaching Council (NTC): the regulatory body with responsibility for the licensing and registration of teachers. It works with relevant institutions to set standards for the teaching profession as well as supports Colleges of Education to implement their pre-tertiary teacher education curriculum.

SNA: in the context of this study this is defined as a distinct method in the behavioural and social sciences that focuses on the exploration of relational concepts and processes, often deploying instruments associated with quantitative studies.

SNA with ethnographic sensibility: in this study this is conceived as an innovative method and a development of SNA so as to interrogate the values and meanings of a networked community based on their views and experiences (via what is said and done) and as such goes beyond the examination of the nature of network structures obtained solely from sociometric survey**.**

Sociogram: a graphical representation of inter-relationships among members of a social network also described as a network map.

Teacher Education Division (TED): the department in the GES with strategic responsibility for the training and development of teachers in government schools.

CHAPTER ONE: BACKGROUND TO THE STUDY

Introduction

This thesis is about how headteachers in the Sunyani district of Ghana build professional capital and harness professional knowledge in their peer network to support their practice. The study is set against recent developments in Ghana around headteacher capacity building and the need to find ways of supporting and developing school leaders in government basic schools where resources have been limited. There is now recognition that professional learning and development in education and indeed headship development are no longer an individual affair so organisational cultures that promote collective learning and collaboration are more desirable (Hargreaves et al., 2014; Day, 2000). It is through such collective action and collaboration that professional capital can be generated and shared among peers in support of professional development (Hargreaves and Fullan, 2012).

In Ghana, informal and collaborative relationships exist among headteachers which allows them to exchange information and professional advice to support their practice (Sofo and Abonyi, 2018; Addae-Kyeremeh, 2012). However, very little is known about the content of the information and professional advice exchanged and the extent to which headteacher interactions and social learning practices allow them to harness this form of professional capital in support of their professional development.

The conceptual framework of this thesis is that headteachers as agentive individuals and experts have professional knowledge pertaining to the day-to-day job of headship and through peer interactions create a learning community that fosters the sharing of valuable information and professional advice. As Hargreaves and Fullan

(2012, p. 102) posit, ‘It is about what you know and can do individually, with whom you know it and can do collectively, and how long you have known it and done it and deliberately gotten better at doing it over time’. For this reason, the content of professional knowledge is as relevant as the relationships that bind these practitioners together and make possible the exchange of this professional knowledge. Therefore, the study draws on the work of Hargreaves and Fullan (2012) relating to professional capital and social network theory (Borgatti, 2005, Wasserman and Faust, 1994). Professional capital in this study comprises headteacher human capital (which includes task-specific professional knowledge), social capital (which is embedded in their professional relations) and decisional capital (which is their capacity to make informed judgements by drawing on their human and social capital).

Social network theory provides a useful theoretical framework for understating the extent of professional capital embedded in the headteacher network and how they can access this network resource to support their professional development. Social network theory as applied to this study frames the learning and development of the headteachers involved as a socially constructed activity that enables the flow of information and professional advice through peer interactions and network ties (Borgatti, 2005). As headteachers interact with their peers, they build relationships that act as conduits for the transfer of resources (such as information, professional advice and support) and are conceptualised as professional capital in this study (Leithwood, 2018; Sofo and Abonyi, 2018; Moolenaar and Sleegers, 2015; Daly and Moolenaar, 2011; Penuel et al., 2010). The network of relationships that develop may offer opportunities or constraints that are worth exploring to better understand the work of these headteachers and to put forward recommendations that could enhance their work.

This study therefore extends the professional capital literature by focusing on the work of headteachers and exploring the content of professional knowledge they indicate as most valuable for their professional development as well as how their informal interactions and social learning practice with peers help them harness this professional knowledge and build professional capital.

The study is conceived as a two-phase sequential and exploratory mixed-methods design and conducted in the Sunyani district, a peri-urban area of Ghana. Phase 1 investigates headteacher views and experiences about their professional development and how they informally build professional capital through peer interactions. The empirical investigation undertaken provides evidence about the content (professional knowledge) associated with headteacher information- and advice-seeking interactions, an area that has barely been explored in Ghana. The study goes further in Phase 2 to explore the extent to which headteacher information-seeking and professional advice-seeking interactions are shaped by demographic characteristics (such as age, headship experience, gender, etc.), drawing on one education circuit in this district.

Social network analysis (SNA) is defined as a distinct method in the behavioural and social sciences that focuses on the exploration of relational concepts and processes, often deploying instruments associated with quantitative studies (Borgatti et al., 2013). This study does not set out to test any hypothesis as is often so with studies deploying SNA methods (e.g. Geeraerts et al., 2018; Leithwood, 2018). Rather, it provides evidence about the content of professional knowledge exchanged among headteachers that is often tacit and cannot be codified and made available in, for example the Ghana Education Service *Headteachers' Handbook* (Ghana Education Service (GES), 2010; 1994). The findings also explain how the

network interactions in one education circuit are shaped by some of the headteacher demographic characteristics (e.g. age, headship experience, etc.).

For the purposes of this thesis, the terms headteacher and principal are used interchangeably or sometimes together to illustrate a role within the school hierarchy. The headteacher or principal is used to denote the person who has ultimate leadership and management responsibility for a school, but the roles and responsibilities vary across countries. Further, a distinction is made among early-, middle- and late-career headteachers. These distinctions are purely to illustrate the number of years of experience for each of the headteachers involved in this study; they do not represent a standard classification in the Ghana education system.

My interest in this study stems from my experience in supporting leadership practice in a range of educational contexts (e.g. basic education, further and higher education) and a long-standing interest in researching headship development. Therefore, researching a context where I've had some practitioner experience and the opportunity to deploy new methods to investigate social learning and professional development provide the motivation for choosing this context and the topic. The empirical findings from this study have the potential to contribute to the understanding of how headteachers in Ghana and similar contexts build professional capital and the extent to which the learning that takes place in their peer-to-peer network could be contributing to their professional development efforts. This could impact on their educational policy by providing some evidence on approaches to headteacher professional development and peer support. This will help in the planning and delivery of professional development (PD) programmes for aspiring and practising school leaders.

The rest of this chapter is divided into five main sections. The first section gives a brief background on headteacher professional development across contexts and the increasing recognition of how headteachers build professional capital through informal and collaborative actions. The second section presents the professional development problem in Ghana and an outline of the main research question and three sub-questions. The third section is a brief explanation of my background and experience as an academic and practitioner. The fourth section explains the structure of the thesis. The fifth section provides an explanation of the Ghanaian context to help readers who are unfamiliar with the Ghanaian basic education system gain an appreciation of the context in which the study has been carried out.

Background to the study

Researchers, educationalists and policymakers recognise that headteachers in Ghana, like their peers elsewhere, occupy critical roles in schools (Fertig, 2012; Bosu et al., 2011) and that headteacher behaviours and practices can impact on student attainment and school improvement (Hargreaves and Fullan, 2012; Harris, 2011, 2010; Moorosi and Bush, 2011; Fullan, 2010a; 2010b; Bush, 2009; Harris and Townsend, 2007; Muijs and Harris, 2007). Although the precise nature of headship professional development programmes varies from country to country, there is general agreement that professional development provides a 'stock of knowledge, skills and learning for use in the workplace' and potentially for further career enhancement (Mackay, 2017, p. 140). It is now common to see what is perceived as valuable professional knowledge for headteachers 'codified' as good practice and presented in formal professional development training, workshops, books and university qualifications (see for example Hallinger and Lu, 2013). These formal programmes have often led to a focus on achieving professional and academic qualifications rather than equipping headteachers with context-specific professional

knowledge that is also relevant to the everyday tasks they encounter at the workplace (Bush, 2013).

Although there are currently no mandatory requirements to achieve professional qualifications in school leadership or licensing in Ghana, a recent Ministry of Education (MOE) policy development that impacts on the professional development of teachers and headteachers is the Pre-Tertiary Teacher Professional Development and Management (PTPDM) policy framework 2012 (MOE, 2012a). The policy provides the framework for organising in-service education and training (INSET) programmes at three levels of the education system:

1. District-based INSET: provided at district level and designed for headteachers and curriculum leaders with the aim of building capacity in leadership, management, subject matter knowledge and pedagogy.
2. Cluster-based INSET (CBI): designed for teachers following an assessment leading to quality improvement requirements in their schools and particularly aimed at improving teaching and learning standards. The education office for a cluster of schools (e.g. an entire education circuit) organises these centrally.
3. School-based INSET (SBI): organised by schools and designed for teachers following an assessment leading to quality improvement requirements in their schools and particularly aimed at improving teaching and learning standards.

The PTPDM 2012 framework document sets out the 'philosophy, vision, core values, goals, policy objectives, core policy statements and institutional structures and responsibilities for delivery of the kind of teacher or manager that will facilitate quality education' (MOE, 2012a, p. 7). It does not make any reference to school leadership preparation and development. In the myriad of activities stipulated for

district-based INSET, there is an expectation that district education officers (EOs) would support headteachers not only with leadership and management skills but also in providing professional development for their schools and clusters. In addition to formal training and workshops, the GES publishes guidance textbooks to support a range of leadership roles in the government basic school system. Of relevance to this study is a headteacher handbook (discussed in chapter two), which the MOE states provide information and professional advice on how to lead and manage the school. Even though the MOE stipulate that the *Headteachers' Handbook* (GES, 2010; 1994) contains the necessary knowledge and practical guidance required for school leadership practice, it is argued that it contains propositional knowledge about management practices and administration processes rather than task-specific professional knowledge, skills and support required to tackle the day-to-day job of headship.

Although propositional knowledge is not dismissed as irrelevant, it is argued that the practitioner's knowledge and social learning experiences should be recognised and valued. Indeed, social learning practices such as networking (Sofo and Abonyi, 2018; Kiggundu and Moorosi, 2012; McCormick et al., 2011) and collegial discussions (Bush, 2008; Zwart, 2007) are known to offer opportunities for participants to harness professional capital embedded in the social and professional relations that are formed. Through participant interactions, resources such as information and professional advice can be transferred among members of the networked community (Geeraerts et al., 2018). For example, Hite et al. (2010) highlight the importance of principals' support network and how their informal connections served as conduits through which principals accessed otherwise unavailable resources. Informal interactions among well-connected leaders create opportunities for knowledge generation but significantly 'reduce the gap between

abstract knowledge and knowledge that can be used in practice' (Leithwood, 2018, p. 176).

Bush (2008) emphasises that collegial discussions have the impetus to provide principals and headteachers with greater opportunity for reflective learning, which enhances their professional capital. He draws on examples from South Africa where a structured form of collaborative working was embedded in a school leadership development programme designated as 'cluster learning' that had impact on the learning and practices of participants. Similarly, Kiggundu and Moorosi (2012), on their evaluation of South Africa's Advanced Certificate in Education (ACE) School Leadership programme, also observe how informal collaborative learning events embedded in the formal headship development programme benefit participants.

Building professional capital through collegial discussions and collaboration has given rise to the emergence of professional learning communities in a range of settings (Stoll et al., 2006). Communities of practice and learning communities are now well-developed concepts in education and over the past two decades have been identified as important to leadership development. Wenger (2000), one of the proponents of learning in professional communities, argues that organisational success is dependent both on the strengths of its social learning systems and the ways in which participation in other learning systems beyond its own boundaries develop organisational learning.

Also, of significance in the professional capital equation is the experiential knowledge of the practitioner. Learning through experience while at work, hence developing professional capital, has a long history in work-based learning. Knowles et al. (1984) posit that adult learning and development in the workplace are mostly

informal, incidental and through acquiring knowledge and skills immediately relevant to work or practice. Through this process, they gain ‘socially defined competence’ and build on their professional capital (Wenger, 2000, p. 226). The task-specific knowledge and skills they accumulate through performing everyday duties also provide the capabilities and confidence to make informed decisions (Harris and Ramos, 2013; Gibbons and Waldman, 2004).

Professional development problem

Although some advanced education systems in North America, Europe and parts of Asia pay a lot of attention to formal aspects of initial professional development for headteachers and principals, the same cannot be said for Ghana. In their study, Zame et al. (2008) conclude that basic school headteachers are not being adequately prepared to perform their leadership roles; they point out the lack of initial professional development programmes for headship as a major contributory factor. Zame et al. (2008) criticise the promotion process that assumes that long service in teaching is adequate preparation for leadership; they conclude that such a system has a detrimental impact on headteacher capabilities. Similarly, in Donkor’s (2015) more recent study in another region in Ghana, he observes that educational rank and length of service of a teacher remain the primary requirements for headship. Therefore, headteachers were appointed to their roles without any formal training. This is consistent with an earlier study by Bush and Oduro (2006) in which they also report on the lack of adequate preparation for headteachers with education administrators relying on ad-hoc management training sessions.

These studies suggest the absence of programmes that ‘formally’ prepare headteachers for their leadership roles are somehow detrimental and incapacitating headteachers. The few studies on headship professional development have

focused on the presence or absence of formal headship preparation programmes and their weaknesses with little regard to the social learning and development that takes place informally among headteachers (Sofo and Abonyi, 2018). Indeed, in Ghana, many headteachers are known to occupy assistant headship roles before taking up headship and so are gradually socialised into headship. Yet the informal learning and development that occurs during this career phase and its contribution to their preparation for headship are often ignored.

On headteacher continuing professional development (CPD), Bush and Oduro (2006) observe that most headteacher development programmes in Ghana focus on short workshops often staffed by people with limited headship experience. These workshops offer few opportunities for headteachers to draw on their experience and perspectives on what works as they navigate the daily challenges of headship (Fertig, 2012).

In view of the background discussions on headteacher professional learning and development, it is evident that there is a considerable gap in headship development in Ghana stemming from criticisms that formal professional development and training programmes are either inadequate or insufficient. But there is growing evidence that headteachers in Ghana build professional capital through, for example, informal, unstructured and non-intentional experiences that often take place in their everyday professional lives (Sofo and Abonyi, 2018). In other education jurisdictions, teacher interactions and connections with peers are known to help build professional capital, yet they are rarely studied in the context of school leadership development. In recent years, social learning through connections with peers has emerged as a way of advancing professional development at the workplace and building professional capital (Hargreaves and Fullan, 2012). There

is also growing evidence about learning through informal dialogic conversations that are close to the practice setting allowing those involved to hone their existing skills while developing new ones through their collaboration (Rogoff et al., 2016).

Therefore, understanding how headteachers build professional capital to support their practice could provide the impetus that policymakers need to develop professional support systems that can better support headteachers. This study therefore seeks to answer the following question:

How do headteachers in the Sunyani district of Ghana build professional capital and harness professional knowledge in their peer network to support their practice?

To answer this question, which is of significance in the professional development of headteachers, three sub-questions were posed:

RSQ 1: What are headteacher views and experiences about their professional development and how they build professional capital in the Sunyani district of Ghana?

RSQ 2: What types of professional knowledge do these headteachers indicate as most valuable to their practice?

RSQ 3: To what extent do headteacher interactions allow them to harness this professional knowledge in support of their practice?

To address these three sub-questions and answer the main research question, the study was conducted in two phases (and described as a two-phase sequential and exploratory mixed-methods design) that draw on narrative accounts and numeric data sets collected separately (as explained in more detail in chapter three). As explained earlier (and in much detail in chapter three), the first phase arose out of

the need to capture headteachers' experiences, ways of building professional capital and generating understanding about the types of professional knowledge these headteachers indicate as most valuable to their practice. The second phase then draws on emerging themes from the first phase to explore headteacher network interactions in order to answer the third research sub-question.

About the researcher

My career spans about 18 years during which I have worked as a teacher in Ghana (albeit for a relatively short period), a further education lecturer in London, as well as taken up middle management and senior leadership roles in further and higher education institutions in England. As a teacher in a government JSS from 1993 to 1994, I was often frustrated with my headteacher for not responding to falling standards in the school. There was a culture of mediocrity in the school and, as a graduate, it was frustrating to see such low aspirations for students. It was evident even then that the headteacher's inactions stemmed from her own lack of leadership support and development, particularly on how to help ineffective teachers improve. My conclusion at the time was that although significant numbers of headteachers have the will to do a good job, they were often ill prepared for the leadership challenges required to improve teaching and learning standards.

I joined The Open University (OU) in 2011 as a lecturer in education and have worked across a range of masters degree courses in education studies. My appointment with the OU has also given me the opportunity to contribute to several teacher and headteacher development programmes in Ghana, India and Bangladesh. While working in these contexts, it has become evident that collaboration among headteachers is an invaluable asset for headteachers. In all these countries, headteachers have given tangible examples of the support they

have received from their peers and, more broadly, a community of educators with a common goal. The potential for headteachers to harness professional capital available within these communities in support of their professional development is immense yet hardly researched.

These experiences have heavily influenced my decision to research this topic and in a context with which I am quite familiar. I did not come to this study with preconceived ideas of what the result might be. Nonetheless I felt that the interviews and informal conversations with participants would reveal authentic voices of headteachers about the professional knowledge they deem relevant for their practice rather than relying on the codified knowledge presented in the *Headteachers' Handbook* (GES, 2010). Even though, in some cases, they would be expected to recall experiences that date back several years, it was important to explore their views. It was equally important to include education officer (EO) voices and perspectives because they provide another perspective based on their supporting roles in the education system. This empirical study was also an opportunity to deploy social network research in an informal professional development space in education, which was a challenging but worthwhile feat.

Research that aims to develop understanding of professional practice is often problematic to some degree and especially when the researcher is deemed an 'outsider' by the participants (Costley, 2019; Bridges, 2008). But exploring the insider/outsider dichotomy from a cultural perspective would place me as an 'insider' because I have very good knowledge of the cultural context, having lived in Ghana for 24 years and worked in the Brong Ahafo region as an educator. As Costley et al. (2010) contend, when researchers are considered insiders, 'they draw upon the shared understandings and trust of their immediate and more removed colleagues

with whom normal social interactions of working communities have been developed' (p. 2). However, from a phenomenological perspective, I can easily be considered an 'outsider' because I have limited current knowledge about the public school system in Ghana as well as practices of headteachers and circuit supervisors (participants) of this study. Commenting on the insider/outsider perspectives, Bridges (2008) argues that neither is superior in its own right. What is important is that the researcher develops an understanding of the human participants, their views and practices by listening empathetically and developing close association through openness, collaboration and trust, a research practice that has been adopted throughout this study.

Structure of the thesis

This thesis comprises seven chapters as illustrated in Figure 1.1.

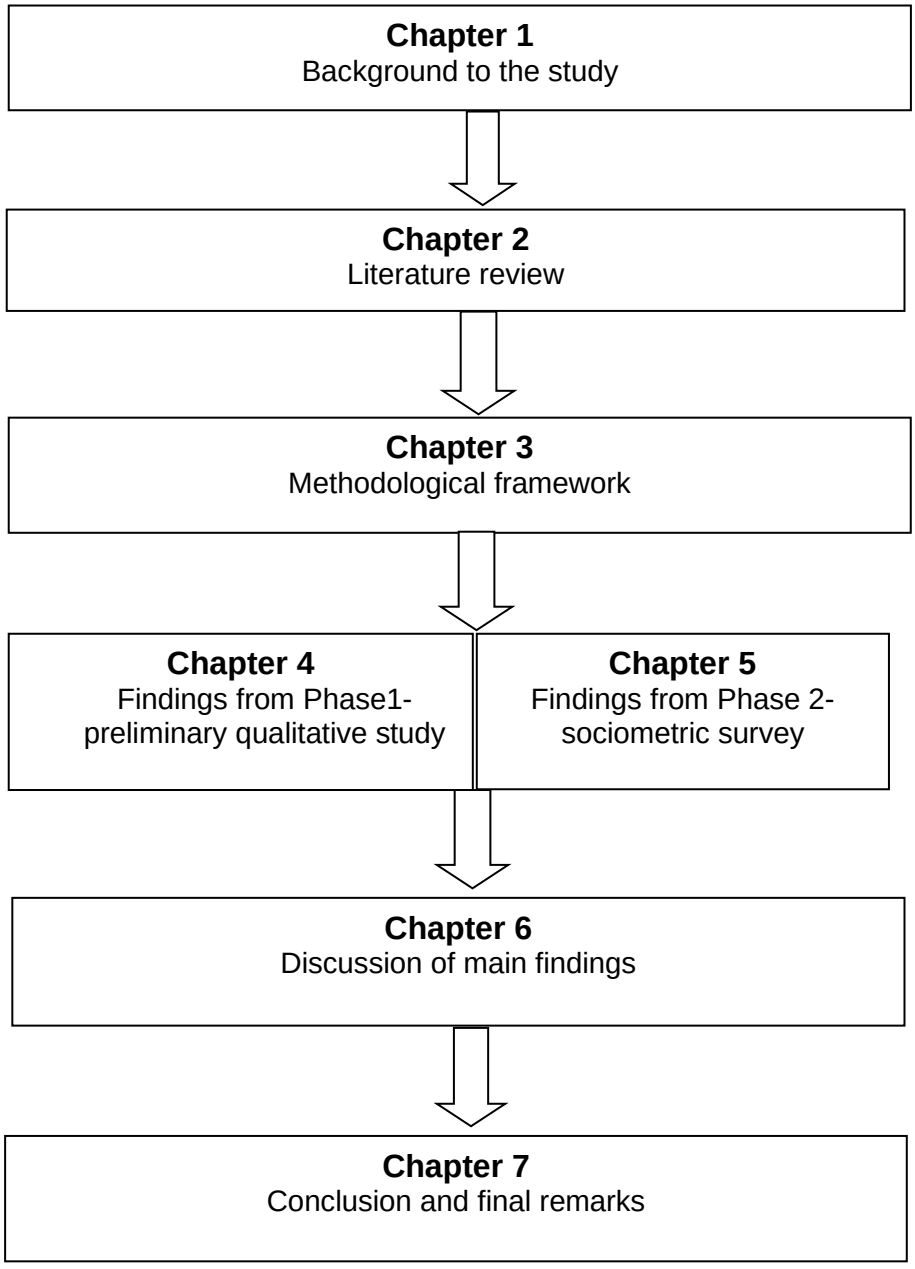

Figure 1.1: Structure of the thesis

The rest of chapter one explains the study context to help readers, particularly those unfamiliar with the Ghanaian context, understand the Ghanaian basic education system. The role of the government school headteacher and other educational leadership roles are explained together with recent policies impacting teachers and

headteachers. Chapter two is a critical appraisal of literature related to professional capital, social network theory and headteacher professional development. It presents a theoretical framework for researching informal interactions among headteachers in a networked community as they build professional capital. In chapter three, the methodological framework for this study is presented including a justification of data collection methods used. The trustworthiness of the study and the ethics involved for conducting this study are also discussed. In addition, the two phases of the study and the analytical framework adopted for the different type of data sets collected are explained in detail in this chapter.

The study findings are presented in the next two chapters. Chapter four relates to headteacher views and experiences of how they build professional capital to advance their practice. This includes headteacher views about the most valuable types of information and professional advice needed for headship practice. Chapter five then presents analysis of the extent to which the professional interactions among headteachers in one of the education circuits involved in the study provides opportunity for them to build their professional capital. Chapter six comprises a discussion of the main findings in relation to the three research sub-questions and scholarly literature reviewed in chapter two. Drawing on the evidence from the study, this chapter includes a discussion of ways in which headteacher professional development could be enhanced. In chapter seven, conclusions drawn from the study are summarised, and followed with discussions of study limitations and some implications for policy and practice. This final chapter also includes a discussion of areas of further research. It concludes with general reflections about personal experiences as an educational practitioner and researcher.

The Ghanaian context

Formerly known as the Gold Coast, Ghana was the first sub-Saharan country to gain independence from British colonial rule in 1957. The country became a republic in 1960 all under the leadership of one of the most influential African leaders at the time, Dr Kwame Nkrumah. However, the ensuing decades were marred with military coups, which led to political instability, ineffective leadership, tribal divisions and a degradation of Ghana's economy (Dartey-Baah, 2015). Consequently, the education system suffered with government reforms failing to reach the desired outcomes of free and compulsory basic education, regional equality, support for girls' education and reforms on special education. Nonetheless, since 1992, Ghana has enjoyed political stability with a growing economy and a national approach to tackling educational challenges, albeit with some difficulty.

Arguably the most radical educational transformation of pre-tertiary education in Ghana in recent years was the introduction of the junior secondary school (JSS) and senior secondary school (SSS) system in the 1980s. The first batch of students, who otherwise would have entered the traditional first year of middle school, were admitted into the new JSSs in 1987 to begin a three-year curriculum programme in vocational, technical and academic studies. They completed the Basic Education Certificate Examination (BECE) in 1990 and entered the SSSs the same year. Since, the teacher training system was not changed during the same period, this meant that teachers who were trained to teach in primary phase could from then on be required to teach the lower secondary curriculum.

All through the 1990s and early 2000s, the MOE embarked on other reforms that impacted on not only the structure of pre-tertiary education and school curriculum but also the structure and content of teacher education in Ghana. For example,

following on from the Free Compulsory and Universal Basic Education (FCUBE) programme 1996, the Ghana Education Reform 2007 was an attempt to consolidate gains from the previous initiative to implement Universal Basic Education comprising 11 years (2 years of kindergarten (KG), 6 years of primary and 3 years of JSS). But, the geopolitics and polarised nature of the two major political parties, the National Democratic Congress (NDC) and the National Patriotic Party (NPP), led to a range of significant changes in education strategic planning (Ampratwum, 2014). For example, the duration of pre-tertiary education (primary and secondary) has changed from 9 to 10 years depending on the government in power. As noted by Ampratwum (2014), 'education policy formulation has been wrestled from technocrats and education experts by the politicians who only focus on short-term rather than long-term changes that will drive up standards' (p. 3). Nonetheless the Education Act 2008 (Act 778) was passed and provides the legislative framework to enforce the free and compulsory basic education system. This policy led to an increase in school enrolment numbers in the basic education sector resulting in teacher and headteacher shortages as well as professional development challenges in some districts in Ghana.

The Education Strategic Plan (ESP) 2010–2020 was an attempt to implement a policy framework over a ten-year period. It was developed to consolidate several initiatives including decentralisation, the Medium-Term Expenditure Framework (MTEF), the Millennium Development Goals (MDGs), the 2007 Education Reform, the 2008 Education Act, government commitments and recent reviews, reports and studies on the education sector. The ESP 2010–2020 covered plans for the education sector; it emphasised the inclusion of KG in school basic education and set a target of having KG provision in at least 90% of schools by 2020.

Comparatively, there has been a steady growth in investment in education in the private and public sectors, particularly around access and teacher recruitment (MOE, 2013). In 2011, government spending on education was about 9% of gross domestic product (World Bank, 2011) and comparable to the expenditure of many middle- to high-income countries, such as the UK. One of the policies that has impacted on the basic education sector and particularly been described as problematic for many headteachers is the use of Ghanaian languages for instruction at KG and lower primary. This policy was a response to a national literacy and numeracy crisis (MOE, 2003). However, it has raised some challenges for students, teachers and, indeed, headteachers; it continues to be debated because the transition from mother tongue to English at upper primary is perceived as disruptive for many children (Ansah and Agyeman, 2015). For headteachers, they must ensure there are enough teachers available to teach these local languages and indeed support new teachers, even though they have no influence in the recruitment and posting of teachers to their schools.

The basic education system and curriculum structure

The government, through the public schools, provides the infrastructure as well as financial and human resources for most basic schools in Ghana even though many of these schools were initially set up by faith-based organisations (FBOs), such as the Catholic, Presbyterian, Ahmadiyya Muslim Mission, Seventh-Day Adventists, etc. On average, public basic schools (KG to junior high school (JHS)) account for over 75% of gross enrolment (MOE, 2013) with private schools accounting for the rest. Broadly there are three types of basic schools as described next.

1. Government or public

   These are schools that are managed and fully funded by the government through the GES. These include many faith-based schools most of which

were nationalised in the 1970s. Although they are managed and maintained by the government, faith-based schools have retained vestiges of faith and, in some cases, the FBOs have some influence on leadership of the school (Nsiah-Peprah, 2004). Public basic schools remain under-resourced with some running multiple shifts per day, which leads to shorter teaching and learning times per shift. In the poorer districts, these problems are compounded further with poor attendance, high pupil dropout and teacher absenteeism (World Bank, 2011). School leadership is seen as critical to help alleviate these problems with stricter monitoring and supervision support from municipal authorities.

2. Private

   These are schools that have been set up by entrepreneurs and offer a very diverse curriculum. Although students follow the Ghanaian national curriculum, there are also opportunities to follow international curricula (e.g. awarding bodies in the UK and international baccalaureates). Some of these private schools are described as international schools and offer only non-Ghanaian curriculum and qualifications.

3. Low-cost private

   These types of schools have emerged in the past decade or so and are a very important facet of the basic education system. Tuition fees are relatively lower than private schools (Akaguri, 2014) and, in many cases, they deliver the Ghanaian national curriculum only. They have become quite popular although there seem to be quality assurance procedural issues in many of these schools (IFC, 2010).

The aim of basic education, as stated by the GES in most of its publications, is to provide opportunities for children to acquire basic literacy, numeracy and problem-

solving skills as well as skills for creativity and healthy living. The medium of instruction in KG and lower primary is a Ghanaian language[1] and English, where necessary. From the fourth year of primary school, English replaces the Ghanaian language as the medium of instruction, and the Ghanaian language is treated as another subject on the timetable. In government schools and most private schools, basic education is co-educational with boys and girls attending together. Currently, basic education in Ghana comprises two years of KG, six years of primary, and three years of JHS. Table 1.1 explains the school phases, age range and summaries of the curriculum structure prescribed by the GES.

[1] There are 11 different possible state-sponsored languages: Ewe, Ga, Hausa, Dagbani, Gonja, Fanti, Konkomba, Akuapem, Asante, Bono and Adangbe.

Table 1.1: Basic education system and curriculum structure in Ghana

School phase	Age (years)	Curriculum structure
KG	4–5	KG is split into two stages, KG1 and KG2.
Lower primary	6–8	Children are encouraged to develop knowledge, attitudes and skills that derive from concrete experiences.
Upper primary	9–11	Children are encouraged to reflect, think creatively, find out things for themselves to satisfy their curiosity, ask questions, criticise, solve problems, observe, view information critically, and assimilate knowledge.
JHS	12–14	JHS education provides opportunities for pupils to discover their interests, abilities, aptitudes and other potentials. It introduces students to basic scientific and technical knowledge and skills; it prepares them for further academic work and acquisition of technical/vocational skills at the senior high/technical school level.

Unlike many advanced education systems (such as those in Singapore, Finland, South Korea, UK and USA), lower secondary (JHS) is integrated into basic education. This culminates in a national assessment known as the BECE, which is the entry examination to senior high school (i.e. upper secondary school).

Leadership, management and administration of basic education

The MOE has strategic responsibility at government level and is the national institution with the mandate for education provision from KG to tertiary. The GES is the national agency within the MOE that leads on pre-tertiary education policy implementation. It was established under the Ghana Education Service Act 1995

(Act 506) and has responsibility for the recruitment, professional development and promotion of teachers, headteachers and education administrators. Its mandate is delivered in collaboration with other institutions and agencies under the MOE, National Council for Curriculum and Assessment (NaCCA), National Inspectorate Board (NIB), National Accreditation Board (NAB), Ghana Book Development Council (GBDC), National Teaching Council (NTC), Ghana Library Authority (GLA) among others. The GES is accountable to the MOE and responsible for service delivery but has no direct mandate on salary and remuneration.

There are ten administrative regions in Ghana broadly clustered into a northern zone, a middle zone and a southern zone. These ten administrative regions are subdivided into 216 metropolitan, municipal and district assemblies (MMDAs) of which six are classified as metropolises, 49 as municipalities and 161 as districts. Each of the ten administrative regions has a director responsible for education who is appointed by the GES. Since the late 1990s, district education directorates have also been set up to localise administration, leadership and management. But as Oduro and MacBeath (2003) observe, this system remains hierarchical rather than devolved and distributed.

The government basic school headteacher

The recruitment and selection of headteachers is considerably different to the experience in the UK, USA and other high-income countries. In the government basic education system in Ghana, when a headteacher vacancy arises, potential candidates receive notification about their eligibility and are offered the opportunity to apply. Candidates are interviewed locally at district or municipal level and, where successful, posted to fill the vacant position. Owing to economic and social

constraints, most people are likely to accept offers to schools that are close to where they have established their family life.

Headteachers in the district of the study, like many parts of Ghana, work with qualified teachers, and with unqualified teachers (who are described as 'pupil teachers'). Qualified teachers are posted centrally by the GES post-graduation from their initial training, whereas unqualified teachers are recruited locally to fill gaps particularly in rural areas and smaller towns. The size of the teacher population and the quality of teachers vary from town to town and district to district within the region where the study was conducted. Table 1.2 provides the recent national profile of teacher (qualified and unqualified) resources in public schools.

Table 1.2: National profile of qualified and unqualified teachers and pupil–teacher ratio in public schools for 2014/15 school year

Education stage	**Qualified (%)**	**Unqualified (%)**	**Pupil–teacher ratio (PTR)**	**Pupil–qualified teacher ratio (PQTR)**
KG	61.7	38.3	35	56
Primary	75.0	25.0	34	45
JHS	87.8	12.2	16	18

Source: MOE (2012b)

Nationally, there are a significant number of teachers who are described as untrained because they do not hold a teaching qualification. This is particularly acute in the early years/childhood settings where only 61% of teachers are trained or qualified. The consequence is that the pupil–qualified teacher ratio (PQTR) remains very high; therefore many classes do not have access to a qualified teacher or are led by unqualified teachers – with potential consequences for learning outcomes.

Some government schools operate more than one shift to meet the high demands. A school that operates two shifts will usually have one headteacher and a deputy. In some of the municipal areas, there is more than one headteacher in a school, each with responsibility for a clearly defined area of work. For example, a school may have a headteacher for primary shift 'A' as well as a headteacher for JSS shift 'A'. Most headteachers have a teaching timetable although multiple-shift headteachers have seen a gradual reduction in their teaching workload over the past few years. Headteachers receive an allowance for the added responsibility of headship and are not remitted for the post itself.

Circuit supervisors (CSs)

School supervision is a key aspect of the management and administration of schools in Ghana. Government schools are grouped into clusters known as education circuits. Each district has circuit supervisors (CSs) with one allocated to each education circuit. The number of schools in an education circuit ranges from ten to 17 depending on the size of the district or municipal area and could be spread across a relatively large geographical area. The role of the CS is to monitor not only teacher attendance but also teaching and learning across their cluster of schools. Apart from their monitoring duties, CSs provide support to headteachers in various ways including how to tackle underperformance.

District training officers (DTOs)

District training officers (DTOs) are education administrators located at the district and municipal offices with responsibility for the professional development of teachers and headteachers. Their work involves many school visits to support school-based INSET as well as work with CSs to support cluster-based INSET. They are also responsible for cascading statutory training as prescribed by the GES

and partly responsible for the planning and delivery of a range of professional development activities for schools or groups of schools. In the Sunyani district where the study is being conducted, there are two DTOs.

School management committees (SMCs)

Promoting and ensuring good relationships between the community and the school system have been part of the school fabric of Ghana dating back to the 1970s. This school–community collaboration is achieved through a Parent Teacher Association (PTA), which provides the platform for parents and other stakeholders in the community to contribute to governance and decision-making in schools. Nonetheless, the government, under the Education Act of 1994, adopted the school management committee (SMC) system as an external governing body for all basic schools. This was aimed at strengthening community participation and ensuring the community played a part in the monitoring of quality of education. Although practices and effectiveness of the SMC vary across regions and districts, they remain part of the government basic education system.

Qualifications, training and employment ranks in the GES

In Ghana, there are three levels of teacher certification: the Certificate in Education (also known as Cert A); a Diploma in Education (DipEd); and a Bachelor of Education (BEd). Before 1987, students who entered a teacher training institution with General Certificate of Education (GCE) ordinary level pass grades were eligible to study for a three-year Cert A. In this same period, students who entered with GCE advanced level pass grades were eligible to study for a DipEd. Since the 1987 Education Act was passed, several progression routes have been created to allow easy access and progression for potential and practising teachers. For example, the advance teacher training institutions have all been combined to form the University

of Education, Winneba. Also, the teacher training institutions have been elevated to tertiary education status and are known as Colleges of Education. At the time of the field work 2014-2015 all government colleges of education were affiliated to the University of Cape Coast, which awards the DipEd. However, a new policy enacted in 2019 has led to the breakup of this monopoly with the Colleges of Education now divided between 5 national universities. It is worth noting that the Cert A has been phased out and most trainee teachers would either be pursuing a DipEd or BEd. In recent years, qualified teachers with a Cert A or diploma are now given the opportunity to pursue further studies to bachelor's degree level by undergoing further training described as 'top up'.

The type of teaching qualification achieved can influence a person's career trajectory as some officer posts require a minimum of a BEd. At the start of the study, there were eight officer ranks within the GES as described in Table 1.3.

Table 1.3: Officer ranks in the education service as at 2014

Rank	Description
Director (grade 1)	This is the most senior position within the education system and regional directors of education will usually be at this rank. The director-general of the GES will be selected from directors at this grade by the ruling government.
Director (grade 2)	This is the rank for most district and municipal directors of education.
Deputy director	
Assistant director (grade 1)	This is the ceiling for non-degree holders; therefore, headteachers who hold only a post-secondary diploma will not be promoted beyond this point irrespective of years of experience and/or performance.
Assistant director (grade 2)	
Principal superintendent	This is the beginning of the senior officer threshold and is the starting point for headteachers with at least a BEd/BA from a recognised higher education institution.
Senior superintendent (grade 1)	These two roles are referred to as junior officer roles and are the starting points for headteachers with a post-secondary diploma.
Senior superintendent (grade 2)	

At the time of conducting the study, headteacher selection was mainly based on educational rank with Director (grade 1) being the highest and Senior

superintendent (grade 2) the lowest. These ranks and career stages are determined by the number of years in service, which are counted from the completion of the college of education qualification and acceptance of a first teaching post. For example, a teacher with about ten years' post-qualification experience is likely to be at the rank of senior or principal superintendent and therefore eligible for consideration for headship.

Summary

This first chapter has provided the background to this empirical study as well as an explanation on why researching this topic and context is relevant and worthwhile. The recent policy context is also explained to help the reader understand some of the policies that impact on the headteacher role and potentially their professional development. The research problem has been discussed and the three sub-questions underpinning this empirical study have been outlined. The reader has been introduced to the Ghanaian context especially the basic education system, its structure and management. In the next chapter, a critical appraisal of literature relevant to this study is presented.

CHAPTER TWO: LITERATURE REVIEW

Introduction

This chapter critically reviews literature relevant to this study and is divided into four main sections. It begins with an exploration of professional capital. Drawing on the work of Hargreaves and Fullan (2012), this section critically discusses professional capital as a resource embedded in social relations as well as the significance of professional knowledge in the professional capital equation. The second section is a critical discussion of social network theory and its application to education, particularly teacher and headteacher professional development. Even though some of the literature reviewed focuses on teacher networks, parallels can be drawn from the social action underpinning these networks. It is worth mentioning that the limited research available on networking in Ghana has meant that some aspects of this review look to evidence from other education systems such as those in the UK and USA. Where possible, literature from other parts of Africa are drawn on as many of the school systems are similar. The third section considers an intersectionality of these concepts and how they informed the research design, methodology and analytical framework. The fourth section briefly looks at the literature on headteacher professional development in Africa and explores some of the practices and contemporary issues relevant to this study.

Professional capital: the human, social and decisional dimensions

For many years, human capital, in particular one's professional knowledge alone, was deemed the main determinant of professional competency and career progression, suggesting that progression is largely a function of the individual's hard work, education and training (Rosenbaum,1984). Therefore, in many professions,

including the work of headteachers and principals, we have seen a lot of emphasis placed on formal training, workshops and a range of programmes developed to build their individual capacity. The marketisation agenda introduced into education – underpinned by business capital models that seek to make quick gains on investment by reducing the cost of teaching – contributed to the focus on training and developing the individual with limited attention to collective action capacity (Fullan, 2007).

Beyond anyone's personal knowledge, professional interactions in trusted relationships at the workplace gives people access to other people's human capital; their professional knowledge and skills. Hargreaves and Fullan (2012) extend the theoretical benefits of collective action in professional contexts in their work *Professional Capital: Transforming Teaching in Every School* and propose a capital idea referred to as professional capital (emphasis added). This idea challenges long-standing views of marketisation of public education and its consequence for how teachers are trained and developed to deliver public education. Hargreaves and Fullan (2012, p. 3) posit that professional capital is an aggregate of three forms of capital: '*human, social and decisional capital*' and, by its true nature, an asset embedded in social relations.

Human capital refers to the talent, knowledge and skills about how to perform the everyday job and is therefore a capacity that resides in the individual. In the context of this study, headteacher human capital will include their professional knowledge, skills and expertise in how to perform the headship or principalship role. Social capital for Hargreaves and Fullan (2012) is the support and collaboration that reside in professional relations and allow them to work productively together. In practical terms, these concern 'how the quantity and quality of interactions and social

relationships among people affects their access to knowledge and information,' and other resources embedded in their professional network (Hargreaves and Fullan, 2012, p. 91). Unlike human capital, which is vested in the individual, social capital is vested in the group; thus, having relational access to knowledgeable others whose expertise can help the individual is desirable.

But Hargreaves and Fullan (2012) argue that a focus on building human and social capital alone is not even enough to bring about the desired transformation in schools. They propose a third form of capital in building professional capital and refer to it as decisional capital. Hargreaves and Fullan (2012) state that, in practice, decisional capital is acquired and accumulated 'through structured and unstructured experience, practice and reflection', which makes it possible for education practitioners to exercise professional judgement (p. 94). This form of capital is about agency and the ability to make professional and discretionary judgements based on experience accrued over many years of practice. Therefore, the education professional's capacity and confidence to exercise professional judgement can be mediated through peer-to-peer interactions because accumulated collective experience is much more desirable (Nolan and Molla, 2017). Although each of these forms of capital on their own is critical to successful organisations, it is worth emphasising the interdependent nature of all three forms in building professional capital.

Headteacher professional knowledge and skills (human capital)

As explained earlier, the human capital dimension of professional capital is about professional skills and knowledge of individuals. A lot of the work of professionals and indeed headteachers necessitates them dealing with complex situations that require using expert professional knowledge as well as exercising complex

judgements (Eraut, 2007). Much has been written about the types of proficiencies and competencies that headteachers in Ghana need to be successful (e.g. see Zame et al., 2008). These well-documented competencies are often presented in formal training and workshops. There is limited emphasis on aspects of professional knowledge that is not easy to codify in textbooks and manuals.

To be successful, practitioners draw on these different types of professional knowledge to tackle the challenges associated with the everyday job. Hales (1993) distinguishes between 'administrative' and 'technical' knowledge. Administrative knowledge relates to the processes through which an organisation runs. In the Ghanaian school setting, this would include managing school facilities, completing statutory forms and chairing meetings. Most of the content of the Ghanaian *Headteachers' Handbook* (GES, 2010) (discussed in more detail later in this chapter) focuses on domains of professional knowledge that could be considered administrative knowledge because they relate to processes and procedures of management and administration. Technical knowledge, on the other hand, as pertaining to headship is concerned with the primary tasks of teaching and learning in order to deliver the best learning outcomes for pupils. At least four forms of technical knowledge associated with school leadership would suffice for headship practice– pedagogic, subject, intuitive and incidental knowledge:

1. pedagogic knowledge, which makes it possible for someone to advise a colleague on an aspect of their teaching or planned learning activity independent of subject knowledge
2. subject knowledge, which makes it possible for someone to give professional advice to a colleague on a particular topic
3. intuitive knowledge so that pre-emptive action can be taken to avoid trouble using one's emotional and intuitive intelligence

4. incidental knowledge, which is acquired by chance through the process of doing something else.

Whereas pedagogic and subject knowledge are easy to codify in a structured and formal way to support practice, the same cannot be said of intuitive and incidental knowledge. Headteacher expertise developed intuitively and incidentally is often not easy to codify and make available in textbooks or formal training programmes because intuitive and incidental expertise are very contextual and have a large and important tacit dimension (Eraut, 2007; 2000). Therefore, the reliance on the Ghanaian *Headteachers' Handbook* (GES, 2010) as the source text for headship professional development cannot provide the holistic support required.

To explore the relationship between codified knowledge and its application to practice, Ogawa (2003) further distinguishes between knowledge, knowledgeability and capability. For example, it is possible to know how indiscipline might be dealt with, but not have the experience of having dealt with the problems (knowledge). Alternatively, having personal experience of indiscipline and knowing of ways to deal with it (knowledgeability) does not necessarily imply the person is able to put them into practice. Or, the person may be able to put that knowledge of possible actions into practice (capability). Although it is easy to codify and standardise 'knowledge' and make it available through development programmes, the same cannot be said for 'knowledgeability' and 'capability'. But through social relations with peers, such experiential, incidental and tacit knowledge can be harnessed to build social and decisional capital.

Headteacher social capital – a resource embedded in social relations

The concept of social capital is well established in the literature with contributions from the fields of business, sociology and psychology. Of relevance to this study are the works Bourdieu (1986), Coleman (1988) and of Lin (2001; 1999). Bourdieu, one of the early writers about social capital, emphasises the importance of social relations and how that can increase the ability of people within that social group to advance their interest. He asserts that 'the profits which accrue from membership in a group are the basis of the solidarity which makes them possible' (Bourdieu, 1986, p. 249). In this paradigm, social capital could be split into two constituent parts: (i) the social relations that promote access to and exchange of resources possessed by group members; and (ii) the amount and quality of those resources. So, unlike human capital, which is vested in the individual, social capital is vested in the group and becomes a resource for the individual and community at large. For headteachers in this study, connecting with peers and developing trusting relationships where people are willing to share information and professional advice is seemingly beneficial for their professional development. Also, of relevance is the quality of the network resource, in this case the content of information and professional advice Ghanaian headteachers indicate as most valuable for their professional development.

Coleman (1988) shares Bourdieu's (1986) view of social capital being a collective resource and that network participants will seek to utilise this 'resource' to advance their interest (i.e. social capital is goal oriented). However, these two theorists differ in that Coleman, unlike Bourdieu, sees social capital as a public good; therefore, direct contribution from network participants will benefit the whole group. Coleman's (1988) formulation of social capital is that it is a productive mechanism where professionals can achieve particular ends through association with others but not

without it. Hargreaves and Fullan's (2012) view of embeddedness of professional capital stems from the work of Coleman (1988) and illustrates the importance of headteacher collective knowledge and expertise in developing themselves professionally and advancing their practice. Drawing on similar concepts of social capital, research has also demonstrated that the collective ability of education practitioners to affect change is influenced by the knowledge, expertise and resources embedded in their social relations and social structures (Daly, 2010; Moolenaar et al., 2010; Penuel et al., 2009).

Lin (1999) adds that 'if it is assumed that social capital attempts to capture valued resources in social relations, network locations should facilitate, but not necessarily determine access to better embedded resources' (p. 36). Thus, focusing on depth and breadth of connections with peers (ie the number of network connections) and individual standing in the community (ie headteacher locations in the network) offers a good opportunity to assess the potential of each headteacher to mobilise information and professional advice. Also, their standing in the community could facilitate or constrain their chance of mobilising professional capital. In the work of headteachers, Penuel et al. (2010) illustrate how social relations and resource sharing among school leaders and teachers support the distribution of expertise in a system undergoing change.

Another facet of social capital embedded in the group beyond professional knowledge is the feeling of friendship and camaraderie that develops through collaboration and can help improve working relationships and confidence in decision-making (Nolan and Molla, 2018). This type of social capital includes headteacher sense of belonging to a professional community and 'a feeling that members matter to one another and to the group, and a shared faith that members'

needs will be met through their commitment to be together' (McMillan and Chavis, 1986, p. 9). This is important for initial professional development of Ghanaian headteachers, and particularly the early years of headship or principalship, where mentoring from more experienced colleagues is deemed useful. Further theoretical justification for social relations in support of individuals and groups has its origins in Durkheimian concepts of, first, 'anomie', which Muijs et al. (2010) suggest can be experienced by stressful underperforming schools and alleviated by connecting to others, and, second, 'moral purpose' for education, a factor identified in strong leaders (Sergiovanni, 1998). Muijs et al. (2010) emphasise the importance of collaboration because it offers schools and individuals, who feel isolated and purposeless, the opportunity for reintegration. As Baker-Doyle (2015) argues, no teacher is an island, therefore building and sustaining connections with peers is a positive attempt to improve teacher quality.

Another view on building social capital through networking is presented by Nasta (1993), who argues that in communities or systems where there has been stagnation, networking and collaboration offer the opportunity for new ideas to be generated and cascaded. This is in line with Riggins-Newby's (2004) argument about changing people's pattern of work and behaviours by getting them to collaborate. She argues that when institutions have deeply entrenched ways of working, they become inward-looking. Therefore, networks offer opportunities for headteachers and principals to share experiences and practices to improve themselves; the social capital that is generated can be beneficial to the school and the wider community.

Headteacher agency and decisional capital

An important aspect of professional practice is reflection and making informed judgements. Hargreaves and Fullan (2012) argue that headteachers as experts in their fields should be given the opportunity and responsibility to exercise discretionary judgement over the issues of teaching, curriculum and school climate. This is exemplified by Hite et al. (2010) who highlight the importance of headteacher agency and a support network in their study of school leadership networks in Uganda. They emphasise the importance of informal interactions and the extent to which connected relations serve as conduits through which principals' access otherwise unavailable resources. Fertig (2012, p. 404), commenting on the headship situation in Ghana, argues that when headteachers are given the space and support network, they demonstrate agency and capabilities of tackling the day-to-day challenges of headship rather than remain 'a functionary performing the bureaucratic demands found in the headteacher manual'. The achievement of agency is always informed by experience – and, for headteacher agency, this concerns professional and personal experience (Priestley et al., 2014). In practice, agency emerges from the transactions between individuals within their environment at a given time and place; therefore, context and relationships are very important (Biesta and Tedder, 2007).

But making informed decisions requires practitioners to be reflective and critical of their own practice. A commonly accepted fact is 'practice makes perfect' but as Day (2000, p. 125) argues, successful headteachers and principals are those who 'take the business of reflective practice seriously', because throughout their career they will be expected to make 'informed choices concerning the kinds and purposes of reflection necessary to challenge and support their professionalism, and the processes which will enable them to engage in them most effectively'. Reflecting

individually as well as doing so with others offers headteachers the chance to sharpen their decisions and it is through this mediation that decisional capital is formed and refined (Hargreaves and Fullan, 2012).

In conclusion, it is argued that the development of both social and decisional capital is directly dependent on headteacher professional interactions. Although these theorists approach their capitalisation concept from different perspectives, an underlying view is that it is the relations between members of the network that make possible the production and maintenance of this real or perceived social asset (e.g. professional knowledge about headship). Therefore, in any professional environment, the capacity to mobilise and use professional capital has potential to improve professional capacity and effectiveness. Although human capital resides in individuals, professional interactions provide opportunities to access knowledge that the individual may not possess, emphasising the significance of social interaction in the formation of task-specific human capital (Gibbons and Waldman, 2004). Therefore, social network theory is helpful in developing our understanding about building professional capital because it frames the learning of professionals as a social activity that allows the flow of information through network ties.

Social networks

There are a few definitions of the word ‘network’ that apply to human and non-human settings. Hornby and Wehmeier (2000) define a network as:

> 1. a complicated system of roads, lines, tubes, nerves, etc. that cross each other and are connected to each other.
> 2. a closely connected group of people, companies, etc. that exchange information.
>
> (Hornby and Wehmeier, 2000, p. 854)

But a network need not be such a large and complicated system with many interlinked parts. In fact, the simplest network could contain only two objects with just one relationship linking them together; for example, two roads connected by a bridge to enable an efficient transportation system. The bridge could allow access in a one-way direction or it could be a two-way bridge allowing access in both directions. The relationships could be directional or non-directional as well as symmetrical or asymmetrical. There are examples of networks in modern history (such as radio, television, computers, etc.) that explain the evolution of human social networks. The emergence of social media and social network platforms such as Facebook, LinkedIn, etc. in this technological era might seem to suggest they are a recent phenomenon. Indeed, human social networks have been studied in various ways and date back centuries.

Social network theory builds on sociological theories that see individuals as nested in communities made up of multiple sets of relations and ties among members. Wasserman and Faust (1994) posit that four fundamental principles suffice in modelling social network theory:

- Actors and their actions are viewed as interdependent rather than independent, autonomous units.
- Relational ties (linkages) between actors are channels for transfer or flow of resources (either material or nonmaterial).
- Network models focusing on individuals view the network structural environs as providing opportunities for or constraints on individual action.
- Network models conceptualise structure (social, economic, political, and so forth) as lasting patterns of relations among actors.

(Wasserman and Faust, 1994, p. 4)

Drawing on these principles, two key aspects of social network theory suffice for exploring headteacher practices in this empirical study. The first is their position in the network in relation to their peers. The position any headteacher occupies in the network is relevant because stronger ties are deemed more beneficial than weaker ones (Borgatti, 2005; Wasserman and Faust, 1994). Stronger ties offer opportunities for the movement of greater volumes of network activity (e.g. information, advice, support, etc.) from the resulting higher number of connections. Therefore, for headteachers in a knowledge-based network, their structural position could determine the amount of information they can access.

The second is about social capital (discussed earlier) and relates to social resource theory (Lin 1991). This focuses on embedded resources such as information, professional advice, support, etc. within a network rather than on the strength of ties and ensuing relationships. These two aspects of social network theory have informed the conceptual framework of this study because whereas network locations help to examine the connections among network participants, the capitalisation argument helps to explore the network resources and the extent to which members are able to mobilise resources such as information and professional advice to support their practice.

Figure 2.1 is an illustration of a social network and a few characteristics that explain the social structure of a social network.

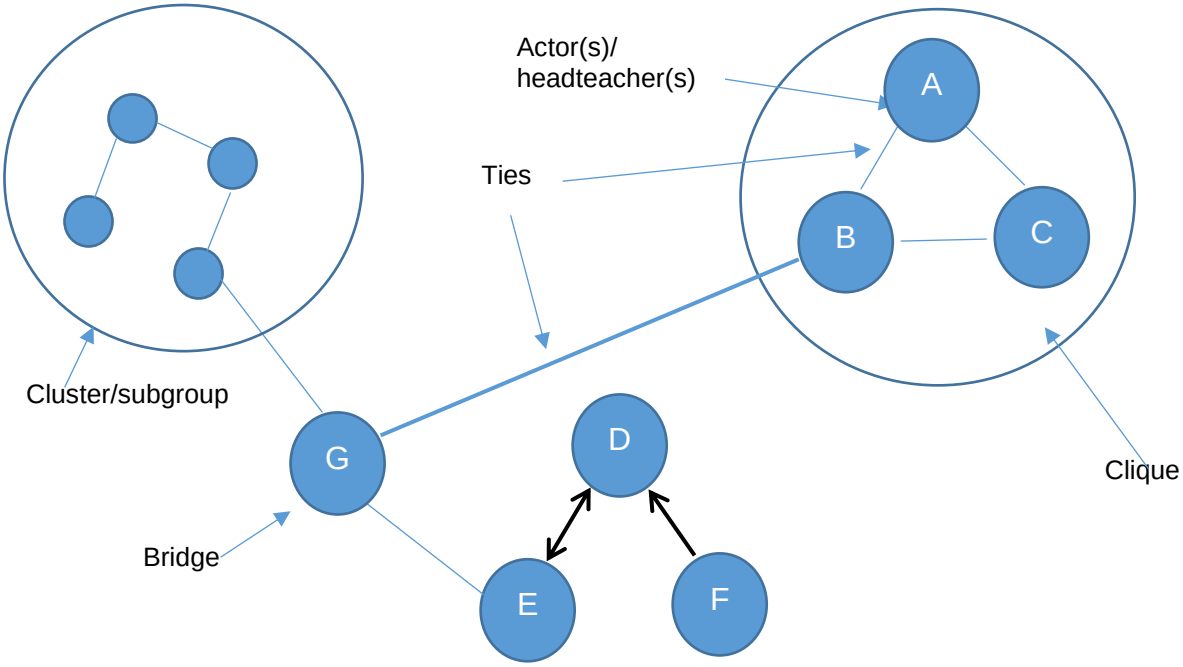

Figure 2.1: Characteristics of social networks

In Figure 2.1 network ties are used to represent relationships between the headteachers. These ties can be directed or undirected depending on the objectives of the study. Undirected ties are often one way (e.g. headteacher 'A' knows headteacher 'B'). Conversely, directed ties can be one way (e.g. headteacher 'F' seeks advice from headteacher 'D' but headteacher 'D' does not seek advice from headteacher 'F') or two way. Network ties can be reciprocal implying both headteachers seek advice from each other as indicated by the double arrow between headteachers 'D' and 'E'. Other characteristics of social networks include cliques, clusters and bridges. Cliques in social network research refer to a subgroup of the network with all possible ties present and therefore represent a maximally complete subgraph as described in graph theory (see Borgatti et al., 2013).

Clique membership is illustrated in Figure 2.1 by the relationship between headteachers ‘A’, ‘B’ and ‘C’, where a tie exists among all members implying no headteacher will be cut off should a member of the group leave. A cluster, on the other hand, is also a subgroup but may not necessarily be a clique because not all possible ties exist among all members as represented in Figure 2.1. Bridges in social network methods involving people refer to individuals who, for some reason, are central connections between two or more different groups of the network. In this headteacher network, bridges could potentially provide connections to new ideas, innovation, etc. because they occupy strategic positions that give them access to ideas (within the network) that are not necessarily available to everyone in the wider network.

Types of social network studies

Although network theories and associated concepts have recently been introduced in education to improve standards in schools (Evans and Stone-Johnson, 2010; Katz and Earl, 2010; Hargreaves and Shirley, 2009; West-Burnham and Otero, 2004), they have been widely researched in business studies, sociology and psychology (Putnam, 2002; Strang and Macy, 2001; Lin, 2001, 1999; Portes and Sensenbrenner, 1993; Burt, 1992; Davis, 1991; Coleman, 1988; Bourdieu, 1986; McMillan and Chavis, 1986), and the benefits can be at individual and group level. For example, network theories have been used to examine resources, real or potential, that emerge out of collective action (Putnam, 2000; Lin, 1999; Coleman, 1988) as well as knowledge sharing tendencies among educational leaders and practitioners (Leithwood, 2018; Moolenaar and Sleegers, 2015; Hite et al., 2010). The interactions between members of a network make possible the production and maintenance of a ‘social good’ or ‘asset’, which is collectively owned and accessible to members of the group (Lin, 1999).

Social network theorists broadly classify network studies into three categories: egocentric, sociocentric and open-system networks (Kadushin, 2012). Egocentric networks are those networks that relate to a single node or person. In such studies, the focus is on relationships between the person described as the ego and their immediate partners also described as alters as well as the relationships among alters. For example, it is possible to explore all the network relations of a headteacher in an education circuit in Ghana, or all primary schools that send pupils to one secondary school.

Sociocentric network studies, sometimes described as ‘whole-network’ studies, examine a given set of actors and the ensuing structures that link all actors together within a bounded group (Robins, 2015; Kadushin, 2012). For example, a study consisting of all connections between children in a classroom or headteachers in a bounded organisation could be considered a whole-network study. In whole-network studies, an underlying assumption is that the entire network exists but, as Borgatti et al. (2013) argue, this can be complex as a person’s true network may stretch beyond any bounded community especially in informal networks. As a result, defining group boundaries in whole-network studies is critical if any concrete analysis and conclusions are to be derived from the associated data sets. In open-system network studies, the boundaries are much harder to define clearly; for example, the number of people influenced by a person’s connections on Twitter or Facebook. They are often difficult to study because they involve large data sets and rely heavily on mathematical modelling supported by sophisticated software applications.

In network studies involving people, networking goes beyond the presence of connections. Networking in human environments refers to ‘a system of trying to meet and talk to other people who may be useful to you in your work’ (Hornby and Wehmeier, 2000, p. 854) and therefore is not just about the connections between people and groups. To be ‘networking’ implies the network must contain not only names of people or organisations, but also available information about the connections between these people and/or organisations and what flows through them; otherwise, there is no network to analyse. In principle, a person with many colleagues or professional contacts on whom she or he can count is said to have a large ‘network’. This network cannot be discussed in social networking terms unless there is information and knowledge about whether and how these people relate to one another (Borgatti et al., 2013). It is obviously one thing to have a supporting network in which most people know one another and a very different matter if the people are unknown to one another.

Educational networks as learning communities

In education, the term ‘networking’ has been widely used in the change and school reform discourses and often promoted as a successful approach to school improvement (McCormick et al., 2011; Katz and Earl, 2010; Katz et al., 2009; Earl et al., 2006). The relationships and ensuing collaborations that emerge from networking have been described in the literature as ‘professional learning communities’ (Stoll et al., 2006) and ‘networked learning communities’ (Jackson and Timperley, 2006). Some of these relationships are voluntary between and among people, schools and their communities. However, in many instances, they have been established by educational authorities purposely as part of school improvement strategies in the UK, USA, Singapore and elsewhere (McCormick et al., 2011).

The idea of professional learning communities promoting networking and knowledge sharing has been an influential and well-developed concept in the literature over the past two decades or so. Proponents of professional learning and development in structured communities as a way of formulating, advancing and sharing knowledge include Wenger (2000), who suggests that 'socially defined competence is always in interplay with our experience' (p. 226); therefore, context is an important consideration. He further argues that organisational success is dependent on not only the strengths of its social learning systems but also the ways in which participation in other learning systems beyond its own boundaries develop organisational learning. Stoll et al. (2006) suggest networking among professional communities is key to building capacity: these networks enhance motivation, develop cultural expectations, and provide that underlying support structure to develop and sustain capacity building for educational improvement and enhancement. They also state that the word 'learning', as placed between 'professional' and 'community', is of conceptual significance. This is in recognition that education professionals must work together to create new knowledge and share these new insights for purposes of professional growth.

Even though the terrain has changed in the past two decades or so with the recognition of teacher collaboration and networking as outlets for professional development, the same cannot be said for headteacher networks. Some of the few studies on networking among school leaders involve headteachers/principals and others within the organisation rather than among just that peer group. But Bush (2008) emphasises that group learning has the impetus to provide principals and headteachers with greater opportunity for reflective learning. He draws on examples from South Africa where a structured form of collaborative working was embedded

in a school leadership development programme designated as ‘cluster learning’ that had impact on the learning and practices of participants.

Drawing on evidence from a formal leaders’ network, Leithwood (2018) confirms that effective leadership networks have great potential to contribute to the development of individual and collective leaders’ professional practice. Similarly, in their study of school leaders in Ghana, Sofo and Abonyi (2018, p. 528) observe that formal meetings among headteachers ‘served as a platform where they engaged in discussions on how to improve teaching and learning in their schools’. The focus on many, the professional community, rather than on an individual is of significance to the professional learning and development of headteachers in Ghana. It emphasises not only collective learning that aims to advance professional knowledge and practice (human and social capital), but also the supportive relationship that makes possible the production of new knowledge to inform decision-making (decisional capital).

But networking does not need to be formal relationships or only between schools as suggested by some of the studies discussed so far. Informal networking among practitioners is known to facilitate knowledge creation and sharing and serves this purpose well for those who choose to participate (Cole, 2008). Indeed, in their study of school leadership networks in Uganda, Hite et al. (2010) emphasise the importance of informal ties and the extent to which densely connected relations serve as conduits through which principals’ access otherwise unavailable resources. Kiggundu and Moorosi (2012), on their evaluation of South Africa’s ACE School Leadership programme, also observe that collaborative events with mentors and facilitators impacted positively on completion rates on the programme. They

emphasise how networking was mainly used as a learning approach even on a formal training programme.

For example, in the context of Ghana, collaboration can offer headteachers the opportunity to work and learn together, and therefore benefit from collaborative learning. Penuel et al. (2010) exemplify this with their illustration of how social networks can support the distribution of expertise in a system undergoing change. Their contributions to this discourse are that people occupying a bridging position in an informal network are critical to the change reform as well as the value of subgroups within the network, both of which ensure innovation is sustained. The notion of resource sharing and relations in a networked environment are therefore important to this study.

Professional capital and networking

Headteacher professional knowledge, collaboration and community have become valued elements of professional development due to new evidence on leadership learning and development, and the potential for networking to support this (Leithwood, 2018; Finnigan and Daly, 2010; Penuel et al., 2010). The intersection between these concepts and their relevance to this empirical study is that practices that involve collaboration with peers, consulting others, as well as experience gained by performing everyday duties can all be influenced by the knowledge, expertise and resources embedded in social relations and social structures. Three issues emerge that are relevant to this study: (i) the content within the information and advice network, (ii) the locations of headteachers and how those impact on their capacity to mobilise network resources (i.e. information and professional knowledge) and (iii) the significance of demographic characteristics of the

headteacher population and how that could potentially impact mobilisation of professional capital.

Significance of content within information and advice network

The nature of the content that headteachers indicate as most valuable to their practice (e.g. information and professional advice) is of significance because social networks are shaped by the content of the social resources exchanged among network members (Wasserman and Faust, 1994). Indeed, in social network studies involving educators, especially teachers, age (for example) is known to influence information- and advice-seeking behaviours. Geeraerts et al. (2018) posit that the exchange of information and professional advice about technical knowledge, such as the use of ICT in teaching, was highly influenced by generational differences. They observe that strong homophilic relationships exist among cohorts of teachers based on their age. They conclude that younger teachers turn to each other for information and professional advice about subject-matter knowledge whereas older teachers consult each other for information and professional advice relating to matters such as classroom management.

In the context of the Ghanaian headteacher network, connecting to other headteachers offers opportunities to access valuable information and professional advice that is relevant to their professional development. The network connections between people become very important for ease of flow of network activity (White, 2002; Podolny, 2001). However, understanding the nature and content of the information and professional advice exchanged overcomes the deficit narrative associated with network studies that focus on general information and advice among practitioners (Meredith et al., 2017; Spillane and Hopkins, 2013; Cross et al., 2001). For example, it is possible to assume that the exchange of information and

professional advice among Ghanaian headteachers could vary depending on the type of content knowledge (i.e. pedagogic, subject, intuitive or incidental knowledge) yet that may not be so. Therefore, knowing who goes to whom for information and professional advice is as important as what the interaction is about.

Network locations and resource mobilisation

Although there is very little contention about embedded resources as a valid measure of social capital, there remains some contention among scholars and practitioners about network locations as measures of social capital (Lin, 1999). One line of argument is that the position any actor occupies in the network is significant as stronger ties become more beneficial than weaker ties because they offer opportunities for the movement of greater volumes of activity from the resulting higher number of channels and connections. For headteachers in this study, their position in such a network can, to a large extent, determine the amount of information and professional advice they can access. However, differences in the positions of individuals within the network can generate inequality of access to network resources (Geeraerts et al., 2018). These inherent inequalities could therefore predispose network participants, who occupy differentially advantageous positions in the network, to compete as each member strives to access available but scarce network resources. In this study, an indicator of prominence or popularity is the situation in which a headteacher is chosen by others more often as someone they go to for information and professional advice. Such an actor is described as occupying a central position in the network structure.

Another line of argument is that nodes that bridge between different parts of the network or access to these bridges 'facilitates returns in actions' (Lin, 1999. p. 38). This argument is premised on the notion that social capital is a function of brokerage

opportunities (Burt, 1992; 2000). Bridging denotes connections to other individuals or groups that lie outside a closely knitted group. Therefore, in an information and knowledge network, individuals (or groups) occupying a bridging position are deemed to be in special locations that affords them brokerage advantages, hence greater social capital. In this study, bridges could also refer to headteacher(s) who occupy positions that allow them to connect individuals and/or groups who would be isolated otherwise. This is of particular importance to this study because bridges could be providing an avenue for cascading information, new ideas and innovation within the network that are not necessarily available to individuals or cliques within the network.

Social capital to explain group behaviour

Relationships are a fundamental concept in social networks as it provides the theoretical framework to examine the nodes and connections that are present or absent. Relationships may exist in a number of ways between headteachers involved in this study. For example, relationships between headteachers could be non-directional or directional, and if directional, they could be reciprocated demonstrating a degree of their mutuality or not. Also, relationships could be based on sharing a network attribute (e.g. similar age) or one in which there is a flow between nodes. These attributes can be used to describe relationships between nodes at all levels of social analysis. Borgatti et al. (2013) distinguish between relational state and relational events. Relational states refer to those relationships that are continuous or persistent and are sustained over a considerable period although that relationship could be ended. Relational events, on the other hand, are considered to be discrete events such as, say attending a six-month headship development course with someone.

Knowledge sharing is a multifaceted process, and in bounded network communities, it develops at two levels: subgroups or whole-network level (Burt, 2000). At the subgroup level, it is easy to see cliques and clusters formed based on a range of network characteristics such as homophily. In social networks involving professionals, cliques can create a sense of safety and inclusion for members who may otherwise feel isolated from the wider network (McMillan and Chavis; 1986). Because tacit knowledge is difficult to codify and transfer via formal and structured ways, sharing professional knowledge and expertise at clique and subgroup level is feasible (Bouzdine and Bourakova-Lorgnier, 2004). At the whole-network level, prominent individuals emerge as information-rich people to whom people connect. Such an individual can be a strategic broker and influence group behaviour in the sense that connections among other actors' flow through that given actor or by virtue of their high level of connections in the network. For example, in information-based networks such as this study, headteachers who are close to colleagues deemed as 'information rich' can easily share information and ideas about an issue with those colleagues than with others who may be several connections away. Proximity to information and professional advice is therefore considered to be useful; the assumption is that headteachers who are identified by most of their peers as the 'go to' people for information and professional advice are the 'information-rich' individuals. These strategic brokers in essence have a degree of control over the flow of social capital in the network and therefore are considered to wield informal power (Bonacich and Lloyd, 2001).

Burt (1992) emphasises the significance of the collective in the capitalisation argument in social networks. He argues that social capital, unlike other forms of capital (e.g. human and decisional), is owned jointly by the parties involved. In essence, no one person in the social network has exclusive rights to ownership of

the capital that is generated through network relations. Therefore, if the network is terminated, the capital that is created dissolves with it. But if the network is active, there are opportunities for the social capital that is created to impact on other forms of capital including human and decisional capital (Portes, 1998; Portes and Sensenbrenner, 1993). In the Ghanaian context, where headteachers are sometimes transferred from one circuit to another or indeed to another district, the creation of professional capital that is available to the entire group might be of paramount importance. Building sustained relationships means that the transfer of any one individual may have limited impact on the social capital embedded in the network.

Headteacher professional development in sub-Saharan Africa

Professional development is a term widely used to describe a range of concepts related to learning that enhances a person's capabilities to perform a professional role (Eraut, 2007). Hence, professional development binds together human, social and decisional capital within professional contexts. Therefore, instead of focusing on independent practice, collaboration among practitioners and long-term situated learning are valued over one-off workshops and training programmes (Baker-Doyle and Yoon, 2011). This is in recognition that not all types of professional knowledge can be easily codified particularly those that are tacit in nature. For this reason, headteacher informal interactions that promote social learning become desirable ways of formulating and sharing information and advice. As Heck (2003) contends, through professional and organisational socialisation, headteachers improve their understanding of the requirements of headship and develop context-specific knowledge related to what they experience on a day-to-day basis as a school leader. Adler (2000), who, using the teacher as a unit of analysis, argues that teacher learning 'is usefully understood as a process of increasing participation in the

practice of teaching, and through this participation, a process of becoming knowledgeable in and about teaching' (p. 37).

Notwithstanding these developments, studies about headteacher preparation and continuous professional development in parts of Africa are often positioned within a deficit discourse, with many researchers bemoaning current practices as insufficient (see Donkor, 2015; Okoko, 2015; Zame at al. 2008). For many years, informal social learning practices of headteachers in Africa have been ignored in favour of formal and prescribed professional development programmes as a way to embed lasting leadership development (see Bush and Glover, 2016). For example in Ghana, educational rank, which is based on years of experience as a teacher, continues to be the main criterion for headship preparation and selection. Zame at al. (2008) argue that the promotion process that assumes that long service in teaching is adequate preparation for leadership is unsatisfactory and concluded that a formal and structured process be put in place to prepare individuals for headship. Donkor (2015) agrees with Zame at al. (2008) and also advocates for the development of formal qualifications and licensing for headteachers, corresponding with arrangements in parts of the USA. Criteria for newly appointed headteachers in Nigeria also appear to be based on their teaching experience rather than a prescribed preparatory certificate or licence (Arikewuyo and Olalekan, 2009). In Nigeria, it is also common for appointments to be based on contextual issues such as ethnicity, religion and other social criteria rather than educational leadership skills (Ofoegbu et al., 2013).

A recent study in Kenya by Okoko et al. (2015) also revealed the reliance on experience and rank, as a prerequisite to promotion to headship. At the higher levels, rank here was based on around 20 years of post-qualification experience.

Okoko et al. (2015) report that principals 'considered seniority as a factor in their eligibility for leadership' (p. 286) because experience was the most critical factor for leadership preparation. In their conclusion, they summarise headteacher perceptions about the preparation for headship:

> majority of principals perceived their preparation processes, which were largely experiential in nature, to be adequate and yet many reported ongoing problems with a range of leadership responsibilities including: managerial duties, school and teacher improvement efforts, building positive relationships with their staff and school community, and with personal leadership aspects, such as, feeling credible and confident as the leader, managing their time and maintaining a work–life balance.
>
> (Okoko et al., 2015, p. 296–7)

Yet Okoko et al. (2015) also report that their 'participants wanted the Kenyan education system to mandate formal leadership preparation in the form of university degrees in leadership and administration' (p. 297). On one hand, there is overwhelming agreement of the importance of context and experience in the preparatory phase yet, conversely, there seems to be a demand for centrally organised certification and accreditation, similar to what is promoted in some Western countries.

Although these approaches inevitably raise questions about whether headteachers have been fully prepared through appropriate pre-service professional development, for their new responsibilities, they fail to recognise the significance of learning while at work through experience and with others. Even though experiential and collaborative practices are promoted as plausible means for building professional capital, such approaches are somehow positioned as deficit when it

comes to practices of headteachers in Africa. Indeed, informal learning modelled on ideas of apprenticeship where experienced practitioners support newly appointed headteachers has the capacity to contribute to effective leadership development (Earley, 2009). However, the notion of 'the western size fits all' is sometimes presented as a way forward in headship preparation for school leaders in Africa. Is this a question of what Eacott and Asuga (2014) describe as 'reproducing the global north' (p. 924), where some African countries have looked to previous colonial models and sought to replicate them? As Pansiri (2011, p. 763.) argues, a paradigm shift is needed, and away from 'uncritically borrowed management and leadership policy agendas that are monoculturalistic and nationalistic' to a situation where context and culture is valued and reflected in the design and support of professional learning, particularly in Africa.

The situation with headteachers continuing professional different is not different in terms of how they are presented in some of the literature on headship development in Africa (Bush and Oduro, 2006). For example, there seems to be a focus on what headteachers should know, based on practices located in Western contexts and scholarship rather than how headteachers in African context build professional capital through practices that may be sociocultural relevant. For example, practices that draw on what they know as individuals, their collective knowledge and social learning experiences and how that helps them individually and collectively in decision making as educational leaders (Hargreaves and Fullan, 2012). Although propositional knowledge is not dismissed as irrelevant, the practitioner's knowledge is recognised and valued. Headteacher perspectives of types of professional knowledge, skills and ways to achieve them are very important; they are often driven by internal motivation (Knowles et al., 1984), self-determination and the need for career self-management (Harris and Ramos, 2013) and not what policy dictates.

Although teachers' engagement with learning and development is increasingly framed in constructivist terms, with much attention given to the interrelation between their ideas and their experiences, it is alarming that these terms are far less evident in programmes targeted at headteachers initial and continuing professional development. The push for formal training and reliance on trainers outside the school systems continues to be pervasive. In Ghana this is compounded by the reliance on the headteacher handbook as the rule book for headteacher support. The *Headteachers' Handbook* (GES, 2010; 1994), issued by the MOE, states that it provides information and professional advice on how to manage the school and therefore has the following objectives:

- explain your role and duties
- apply basic management techniques to the running of your school
- keep all the records required by the GES
- provide in-service training for your teachers
- improve school-community links
- communicate better with pupils, teachers, officials and community members
- increase your school's intake and attendance rates.

(GES, 1994, p. xi)

In 2010, the *Headteachers' Handbook* was revised to include two more sections on objectives: (i) provide leadership for learning and (ii) assess the teachers' and pupils' performance. The *Headteachers' Handbook* remains an authoritative source of information and professional advice; therefore, all headteachers are issued with a copy following their appointment. It is written as a reference document and also a training manual that includes activities to be undertaken by the headteacher

independently and some to be undertaken with teachers and other stakeholders. The sections and units in the *Headteachers' Handbook* (GES, 2010) are described in Table 2.1.

Table 2.1: Themes and units in the *Headteachers' Handbook* (GES, 2010)

Section	**Units**
Basic education in Ghana	Legal framework of basic education in Ghana Basic education system in Ghana Security and safety in basic schools
Managing your school	Managing people Managing instructional time Managing co-curricular activities Managing teaching/learning resources Managing school finances
Improving the quality of learning	Strategies and guidelines for improving learning Increasing school intake and attendance Assessing pupil performance Assessing teacher performance Staff development Improving relationships between school and community

But arguably the content of the *Headteachers' Handbook* (GES, 2010) comprises codified propositional knowledge on management practices rather than task-specific professional knowledge, skills and support required to tackle the day-to-day job of headship. Critics such as Eraut (2011) argue that there is limited evidence to suggest that the emphasis on codifying professional knowledge for delivery in structured professional development programmes yields the best results. Indeed,

not all kinds of knowledge are easy to capture and codify for sharing in formal training, workshops and textbooks especially when the professional knowledge concerned is tacit in nature. For example, tacit knowledge that resides in a person's head and guides them in decision-making in everyday practice is difficult to codify because it can be contextual, sensitive and incidental (Leithwood, 2018). Although the value of propositional knowledge presented through formal training and workshops is not dismissed per se, there is evidence that suggests practitioners build their professional capital through a variety of means beyond formal training, workshops and reading manuals.

Professional learning and development that locate learning beyond what merely exists in people's minds and emphasises the significance of context and relationships are underpinned by social constructivism and connectivism. Social-constructivist approaches to professional learning and development rely on diversity of viewpoints that is best realised through peer-to-peer interactions (Vygotsky, 1978). In this paradigm, the context within which a headteacher's learning and development take place is as important as the interaction with their peers because there is recognition that knowledge is constructed through social interaction and it is a shared rather than an individual experience. Interactions such as seeking information and advice from peers have shown to be beneficial among education practitioners (Geeraerts et al., 2018). Also, organisational cultures that promote collective learning and collaboration are known to help headteachers and principals improve because by engaging in reflection and critical conversations, they can construct meaningful solutions to their challenges (Day, 2000).

Beyond social constructivism, social learning through connections with peers has also emerged as a way of advancing professional development at the workplace,

yet it is rarely studied in the context of school leadership development. Described as connectivism, Siemens and Conole (2011) argue that this process of learning and development involves building networks of information, resources and contacts that help resolve everyday problems encountered by the network participant. Although Siemens and Conole's (2011) work has mainly focused on technology-based networks, the concept still applies to this study. A connectivist approach to building headship professional capital focuses on building and maintaining connections among headteachers such that they can exchange information and advice in relation to their everyday job. Therefore, connectivism assumes the availability of a professional knowledge base and that a network participant's role is not to know everything but to have the capacity to find and apply knowledge when and where it is needed. Network connectivity provides opportunity for frequent interactions among network members be it formal or informal, and through these connections local knowledge can flow (Leithwood, 2018; Borgatti et al., 2013).

In conclusion, it is argued that headteachers task-specific professional knowledge alone or over-reliance on trainer-led formal workshops are not enough to support headteacher professional development. The study positions headteachers as agentive individuals and active participants in their professional community who, interact with peers for purposes of sharing knowledge, information, professional advice and expertise. It is within this construct that the content of information and professional advice that headteachers indicate are most valuable to their practice becomes critical. Hence, the conception of professional capital in this study is premised on valuable information, professional advice and support embedded in the relations of a group of headteachers who through their network connections are able to access and harness this embedded resource. Building and maintaining network connections are important for headteachers professional development because

they are not expected to know everything but to have the capacity to access information and professional advice and apply knowledge when and where it is needed.

Summary

Through its critical literature review, this chapter has examined headteacher professional development and argued that codified professional knowledge is not sufficient to build professional capital. The notion that headteachers as agentive and knowledgeable experts through peer interactions create and share professional capital – has been presented as a plausible way of advancing headteacher professional development. The chapter has also argued that social capital and network theory provide theoretical frameworks to examine social phenomena that do not exist at the individual level. Therefore, the process of building professional capital to support headship development can be examined by tracking the content and flow of information and professional advice – and be interpreted through these social interactions. Studying these elements of professional learning and how headteachers build professional capital can be challenging due to the complexity of human interactions and relationships. Therefore, evaluating and understanding these practices and the extent to which they contribute to professional development require new methodologies that reveal not only the complexities of interactions but also the content of the information and professional knowledge exchanged. In the next chapter, the pragmatic position adopted for this study and associated methodological framework are discussed. A social network method described as *Social network analysis (SNA) with ethnographic sensibility* is presented as a plausible and innovative method and discussed in detail.

CHAPTER THREE: METHODOLOGICAL FRAMEWORK

Introduction

This chapter explains the methodological framework underpinning this empirical study. As explained in chapter one, the research aim is to explore how headteachers in the Sunyani district of Ghana build their professional capital by harnessing professional knowledge in their peer network to support their practice. It is addressed by posing the following question:

How do headteachers in the Sunyani district of Ghana build professional capital and harness professional knowledge in their peer network to support their practice?

To answer the research question, which is associated with a real-life problem three sub-questions were generated:

RSQ 1: What are headteacher views and experiences about their professional development and how they build professional capital in the Sunyani district of Ghana?

RSQ 2: What types of professional knowledge do these headteachers indicate as most valuable to their practice?

RSQ 3: To what extent do informal headteacher interactions allow them to harness this professional knowledge in support of their practice?

This chapter is divided into seven main sections and starts with a discussion of the pragmatic beliefs underpinning this study. The second section describes the field site where the study was conducted and also includes an explanation of the sampling strategy. In the third section, the social network method adopted for this study is explained and justified. The fourth section outlines the access arrangements and ethical considerations explored and implemented. The fifth section discusses

and explains the data collection instruments and how they were used in the field to solicit information and generate the data for analysis. The approach to the coding and analysis of the data generated from the instruments is justified in the sixth section. The seventh section explains the trustworthiness of this empirical investigation and discusses the extent to which the findings can be generalised.

In seeking to answer main question and the three sub-questions, four key considerations inform the methodological choices. Firstly, the research questions drive the methodology, therefore, it is about instrumentalism. Secondly, a recognition of the importance of context and connections, and that people's actions and behaviours cannot be separated from the situations and contexts in which they occur. The study assumes social reality in a network study should be primarily conceived and investigated from the view of the properties of relationships between and among the network participants as well as properties of the participants themselves. Thirdly, recognition that the headteacher is knowledgeable and agentive; therefore, their actions and experiences are best uncovered through a participatory approach that examines their personal experiences and takes a realist social ontological perspective. Fourthly, a focus on the impact of actions with a consideration of consequences and the generation of new knowledge about behaviours and social action in a bounded community.

Pragmatic beliefs underpinning the study

Undoubtedly, the two polarised research traditions – scientific and naturalistic (also described as foundationalist perspectives) – have dominated social science research and are often deemed incompatible because they are underpinned by different ontological and epistemological theories (Guba and Lincoln, 2005). For some educational researchers, as well as researchers in other fields, the knowledge

that research produces is scientific and positive, i.e. based on systematically collected and analysed data or evidence; therefore, its validity has a high level of certainty and equates or approximates to that of the physical sciences (Cohen et al., 2012). Notwithstanding the dominance of scientific tradition over the years, today, relatively few social and educational researchers would make such a strong claim. Indeed, there are those who would strongly dispute that research knowledge can lay claim to any kind of superior validity over knowledge derived from other sources. This arises in part from philosophical arguments about the doubtfulness of all knowledge claims or, specifically, of claims concerning social phenomena. Whereas the scientific tradition has mainly been associated with numeric approaches to knowledge generation, the naturalistic tradition has been associated with narrative approaches.

However, since the 1990s the binary argument and the idea that scientific and naturalistic belief systems have incompatible methodologies in what has been described as the ‘Paradigm Wars’ has been challenged by several researchers (see Tashakkori and Teddlie, 2010; Woodhouse, 1996). There is growing recognition in the social and behavioural sciences that research is often multifaceted and a ‘what works’ tactic could allow the researcher to address questions that do not necessarily sit comfortably within a wholly scientific or naturalistic tradition. Such an approach to empirical research is underpinned by pragmatic beliefs that research questions are the principal determinants of the research philosophy rather than a commitment to a scientific or naturalistic view at the start of any enquiry (Ercikan and Roth, 2006; Teddlie and Tashakkori, 2003).

Pragmatism as an alternative belief system has its origins from three American scholars: Charles Pierce (1839–1914), William James (1842–1910) and John

Dewey (1859–1952). Without going into too much detail about their perspectives and the variations in how they have presented pragmatism to the world of philosophy and education, what is common in their arguments is that the meaning of actions and beliefs are found in their consequences which is about instrumentalism. Therefore, in place of questions about the nature of truth, pragmatists like to focus on outcomes of action. This view emphasises the nature of experience as opposed to the scientific view that stresses the nature of reality; therefore, pragmatists lay emphasis on outcomes of actions rather than seeking the philosophical nature of truth (Plowright, 2012). In this belief system, the researcher rejects the view that objective truth can be assigned to any action because the consequences of any act would depend on the situation in which it occurs (Morgan, 2014). Justified true belief is therefore determined by agreement among a community about what works, and knowledge is only justified if it is practical or has some utility (Plowright, 2012).

Dewey's concept of research as inquiry has influenced the pragmatist position adopted for this study. This pragmatist position is also based on the argument that research aims and questions are the principal determinants of the research methodology and that paradigm positions (and not philosophical constructs) are chosen to justify the research methodology (Morgan, 2014; Plowright, 2012). Thus, in this study, headteacher views about what is valuable professional knowledge with regards to their practice is of significance. Also, headteacher interactions and collective action have consequences and provide some knowledge and understanding about how they are building professional capital.

The epistemological position for this study is that what constitutes valuable professional knowledge among a group of practitioners in a bounded and networked

community and how they harness this professional knowledge could only be gained through exploring personal experiences and beliefs of the practitioners. This epistemological position emphasises the 'conditions of action' as well as the structure that either facilitates or constrains action (Sibeon, 1999, p. 142). Therefore, a social network method described as *SNA with ethnographic sensibility* was deemed appropriate for this empirical study and described later in this chapter. This social network method makes several important conceptual advances possible for studies that seek to explore social relations and embedded practices and is explained in detail later in this chapter. A major strength of SNA in the behavioural and social sciences is that it is a distinct methodology that provides a framework to examine social phenomena that do not exist at the individual level (Borgatti et al., 2013; Wasserman and Faust, 1994).

Field site boundary and sampling

The 'field site' for the entire study comprised two education circuits taken from one municipal district. Each circuit had 17 headteachers, making a total of 34. The meaning of 'field site' in this study is adapted from (Howard, 2002), and instead of choosing a territorial field site, a community was chosen from which important groups in the social network were selected as the field site. In this case, the field site is not a socially significant physical place, although all the participants are in one geographic region in Ghana. It was particularly important that the social events selected for investigation (i.e. networking) were prevalent and the people in the population were taking part within the identified field site. However, it was also important to specify a boundary to allow the researcher to conduct this study within the constrained time of completing the thesis.

The choice of field site for the entire study was influenced by five key issues:

1. *Ease of access to the district and respondents*: this was very important because the fieldwork was conducted within a short window of opportunity of two weeks. As a whole-network survey, it was important to reach all the participants and to ensure all responses were obtained before the researcher left the field site. Although there was sustained communication with participants, it was important for the researcher to collect all survey responses to guard against non-response errors.

2. *Whether there were characteristics of the phenomenon under study*: whole-network data offers the opportunity to gather rich information about social relations among a population that cannot be achieved by other network methods. It was therefore important to select a population where professional networking among headteachers occurs. To identify this population, the researcher relied on his knowledge of the population, contacts in Ghana and experiences from the pilot study conducted in the region in 2013.

3. *High degree of ecological validity*: to be able to generalise the findings and analysis of the study beyond the field site investigated, it was important to consider the ecological validity of the population. Conducting a whole-network analysis of an education circuit provides a high degree of ecological validity because the demographic characteristics of one education circuit reflect what is in place across Ghana. Even though the views and experiences may vary from one education circuit to the other, the diverse demographic profile is similar to what can be expected elsewhere.

4. *Logistics*: the selected district has urban and rural characteristics although it is classified as a municipal district. This distinct feature made it a good choice because surrounding villages are easily accessible.

5. *Financial*: although whole-network studies allow for powerful description and analysis of social structures, they can be expensive, and the associated data can sometimes be difficult to collect. Obtaining information from all headteachers in the district, the full headteacher population, would have been very expensive; having each member rank or rate each member as defined in the survey instrument would have added more layers of sophistication for a study with limited resources such as this. Also focusing on the municipal district meant travelling expenses were less costly than if conducted in another district.

The selection of the participants for Phase 1 of the study was based on a combination of purposive and convenience sampling. It was purposive because the researcher identified participants who had experiences relevant to the aims of the study (Flick, 2007). In this case, they were headteachers of government schools in a peri-urban area who share information and professional advice through network collaboration. Also, this phase of the study aimed to establish participant views about valuable professional knowledge for headship practice; therefore, it was important to ensure the sample reflected a demographically diverse group of headteachers, which could be described as a typical headteacher population (Ary et al., 2017). Consequently, criteria of gender, age, type of school, number of years as headteacher and highest academic qualifications were deemed relevant here (Rea and Parker, 2014).

Sampling in Phase 1 also involved an element of convenience given the limited time available to the researcher for the fieldwork. After discussions with education administrators, 12 headteachers were deemed suitable based on the five criteria

explained earlier. They were narrowed down to six headteachers drawn from two education circuits as their schools were located within the same town. In addition to the headteacher sample, four educational officers were deemed relevant to the study and purposefully chosen as informants. Their duties as officers located in the district office with remit for either supporting professional development in schools and/or supporting headteachers meant that their views and insights about headship professional learning could be useful for the study.

A saturation sampling technique (Lin, 1999) was deployed in Phase 2 to map out a defined professional network for one of the education circuits involved in Phase 1. In SNA, this involves soliciting data from all participants (i.e. headteachers in one education circuit) representing a whole-network and their relationships identified and measured (Lin, 1999). This allows the deployment of a full set of network concepts and techniques making it possible to analyse every network location as well as embedded resources being investigated (Robins, 2015; Borgatti and Offem, 2010). However, whole-network studies can be expensive and time-consuming due to the volume of data that are collected and generated. Therefore, one of the two education circuits involved in Phase 1 was chosen for the whole-network survey as discussed later in this chapter. This comprised 17 headteachers and is described as an organisational unit.

The sequential mixed-methods design: SNA with ethnographic sensibility

In this study, rather than emphasising the dualism of the qualitative and quantitative approaches and problematising their differences, the aim was to produce something of value to the participants and policymakers; therefore, the methodological choices were driven by the three research questions focusing on ‘what works’ for answering them (Tashakkori and Teddlie, 2010; Scott and Morrison, 2006). Adopting such an

instrumentalist view meant that a mixed-methods approach was more appropriate to answer the research questions.

Researchers who adopt a mixed-methods approach often justify their approach in one of two ways. The first justification advocates ‘a *pragmatic* rather than a *principled* approach, arguing that decisions about design and methods should be driven by the aims, objective and research questions’ (Biesta, 2012, p. 148). In other words, from a practical viewpoint, ‘mixed methods can and should be applied if, in combination, they provide the best opportunity to address the research problem set’ (Scott and Morrison, 2006, p. 155). Others justify their mixed-methods approach by either separating each of the methodologies into discrete stages of the study, with each stage adhering to different philosophical underpinnings, before comparing and contrasting the results of both stages of the study; or they adopt an ‘embedded mixed methods design’ (Creswell, 2014), where the whole study is framed within one particular worldview, and thus the study is not a mixing of methodologies (and associated philosophical assumptions) but rather using multiple methods. Mixing methods can help increase data accuracy as the researcher refines and redevelops other instruments by building on data generated from different instruments. For example, a survey may be used during a preliminary study to determine a suitable sample for a further in-depth ethnographic study involving interviews. Conversely, ethnographic approaches may be used in a preliminary study to help shape the research question(s) and define the broader parameters and characteristics that may be used in a later quantitative driven survey instrument.

SNA in the behavioural and social sciences is a distinct method that focuses on the exploration of relational concepts and processes (Wasserman and Faust, 1994). Despite the utility of SNA to provide methodological tools for exploring and

examining network interaction and collaborations, there remain a few limitations to this approach including the inability to expose sufficiently the nature of 'incommensurate yet meaningful relationships' embedded in the network (Ball and Junemann, 2012, p. 13). This suggests the need for additional sources of insight. One possibility is to complement the collection of social network data with other narrative data on social interactions in order to gather a more complete picture of the social interactions.

Network ethnography is an emerging method where SNA and associated instruments have been 'mixed' in a systematic way with ethnographic instruments to explore headteacher perceptions, relationships, network interactions and information flow among a group of network participants (Berthod et al., 2017; Howard, 2002). Although some ethnographers are known to spend a significant amount of time in the field, in recent years it is common for ethnographers to observe parts of the lives of their participants and their settings in short spates compared to what was common fieldwork practice among anthropologists, who often spent several weeks and months with participants (Hammersley, 2018; 2006). Although Howard (2002) posits using ethnographic methods on field sites selected after a sociometric survey, the opposite position was adopted for this study because it was important to establish initially headteacher perspectives about building professional capital and to identify some domains of professional knowledge that headteachers indicate as most valuable for their professional development. These domains of professional knowledge then formed the basis for the follow-up quantitative survey and the evaluation of professional capital embedded in one of the education circuits. This new approach is described as *SNA with ethnographic sensibility*.

Although mixing ethnographic techniques with SNA may not be a new approach in social network research, adopting ethnographic sensibility in SNA meant effort was made to study headteachers in their practice setting, using a range of information-gathering techniques and documenting what goes on (Hammersley, 2018) and using the participants authentic views to explore their network interactions. In this study SNA with ethnographic sensibility is conceived as a new and innovative method that extends what can be achieved by sociometric surveys alone. It emphasises the need to create opportunities to understand values and meanings of the community being studied based on their views and experiences (Polin and Keene, 2010). As argued by Henderson (2016), adopting an ethnographic sensibility position in social network research creates opportunities for the researcher to understand values and meanings based on what is said and done and goes beyond the nature of network structures. The ethnographic sensibility approach deployed opened the opportunity for the researcher to build relationships with the participants, which subsequently helped to build the level of trust required for such an intrusive research process (Henderson, 2016).

In this study ethnographic sensibility is also used to emphasise a supplementary and complementary approach to the core method, the sociocentric whole-network analysis. The study was therefore divided into two phases. In the first phase, it was necessary to establish what headteachers indicate as valuable professional knowledge (information and advice). Then in the second, headteacher views of valuable professional knowledge provided the basis for exploring how such professional capital is harnessed to support professional development. Hence, analysing professional capital as a dependent variable allowed for an understanding of how headteacher characteristics and relations with peers facilitate or constrain professional capital formation and access. Although the study does not seek to

establish causality, it assumes that network interactions influence beliefs and attitudes as well as behaviours, actions and outcomes. The mixed-methods strategy adopted for this study is a two-phase sequential and exploratory design (Morgan, 2014) as illustrated in Figure 3.1.

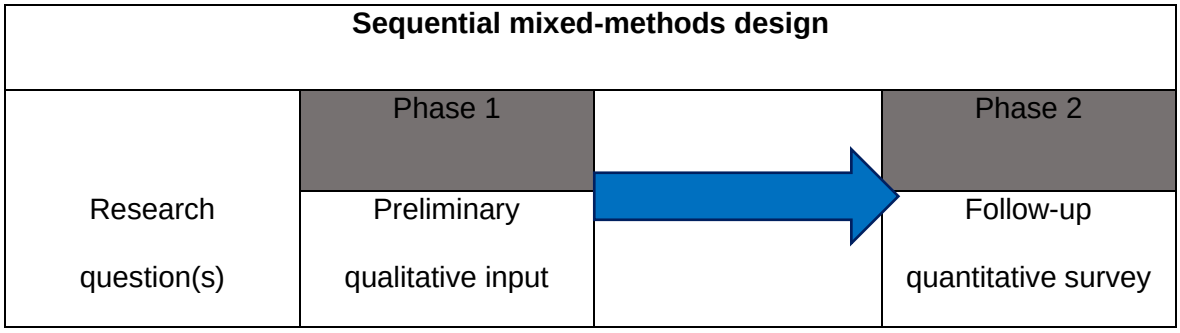

Figure 3.1: A two-phase sequential and exploratory mixed-methods design (adapted from Morgan, 2014)

Phase 1: preliminary qualitative input

As explained earlier, Phase 1 arose out of the need to understand headteacher perspectives about building professional capital and to identify domains of professional knowledge that headteachers indicate as valuable for their professional development. Therefore, an ethnographic approach was used at the start of the study and in keeping with what Morgan (2014) describes as discovery-oriented qualitative input design. This involved interviewing headteachers, visiting the school setting and collecting descriptive accounts (from headteachers) about specific moments in their professional lives relevant to the aims of the study, and informal conversations with education officers, In this design, a preliminary ethnographic method contributes a set of subjective and contextual strengths to a core method. In this study, the types of findings that emerged from the preliminary study formed the basis for the evaluation of social and decisional capital in one of the education circuits in Phase 2.

Phase 2: follow-up quantitative survey

Sociometric analysis has been used to study a range of collective action problems in educational settings for some time (see, for example, Leithwood, 2018; Moolenaar et al., 2010; Leithwood and Jantzi, 2008; Hite et al., 2007). Often researchers are interested in the structure and relationships in the network and how those affect information sharing, capital formation, communication and a myriad of network outcomes. Phase 2, the core method in this study, entails a sociocentric method involving headteachers who are represented as the nodes or actors in the social network. However, in another situation, the nodes could have represented ideas, events, objects and various variables. For this study, actors represent headteachers in one education circuit. These headteachers have characteristics that help distinguish them. Their characteristics (such as age, gender, years of experience, type of school they work in, etc.) are typically described as attributes in the SNA. The relationships between actors also have characteristics and are described as ties that in this study represent a connection to indicate they either give or receive information and advice from another headteacher; these are discussed later.

Access arrangements and ethical considerations

Within social network research, access is a continual process that involves continuous consultation and consent to access the field site and participants. Walford (2008) points out that access involves a process of building relationships with people, such that participants learn to trust the researcher to the point where they are prepared to allow themselves to be observed with few restrictions and be open about their beliefs. For this study, an initial visit was made to the municipal area in Ghana for a discussion with the municipal director about the research aims, participants and the date for the fieldwork. Following this meeting, an official letter

was then submitted to the municipal director for consideration. The municipal authorities in Ghana granted formal permission by issuing an official letter (Appendix A), which also served as the clearance certificate. A full ethics application was subsequently submitted to the OU research ethics committee, which was also granted (see Appendix B) before the fieldwork was undertaken.

Ethical considerations

Conducting research in educational settings in developing world contexts can be challenging ethically, partly because the researcher may be operating in a country that holds very different academic and cultural views about research ethics. For example, in Ghana, participants required for educational research tend to comply immediately if a senior officer has granted official permission to the researcher. Nonetheless, formal consent (see Appendix C) was sought from each participant before any engagement in discussion or interview. Participants were provided with full details of the research aims and processes and were informed about their rights to withdraw. Further access was sought at different times between September 2013 and November 2015. Therefore, access was never total; rather it was incremental and continuous, starting from the initial permission to access the field sites and gradually moving to a series of developed and trusting relationships with various research participants. The school visits were carefully planned with the municipal directorate because circuit supervisors (CSs) are required to accompany researchers and to introduce them to the school and headteacher. Given that data collection involved unique instances where people express personal opinions and divulge sensitive matters, it raised some important questions about ethics such as informed consent, anonymity and incentives.

Informed consent

Although large data sets generated from numerical analysis can easily be aggregated to avoid traceability, this is often difficult to achieve with narrative data sets and, particularly, small-scale studies. Although participants were willing to take part in the study, some were apprehensive about how their data would be used. A meeting with the municipal director on the first day of the fieldwork was an opportunity to emphasise that data collected would be guided by the Data Protection Act 1998 in the UK. Before any interview, participants were provided with full details of the research aims and processes and were asked to sign a consent form. All participants were duly informed so that they understood the processes, the probable outputs of their contribution and how these would be reported. It was explained that the data would be the property of the researcher and would be used for the doctoral thesis and possible academic publications. It was emphasised that all audio files and transcripts would be destroyed afterwards.

Anonymity

In studies that involve participant voices and narrations, researchers often use pseudonyms to help overcome anonymity especially in cases where participants have made it clear that their voices must remain as such. However, in some cases the nature of the study may make some participants identifiable by inference. In such cases, it is very important to have a thorough discussion with participants about how the data will be reported and the possible implications (British Educational Research Association (BERA), 2018). As explained earlier, formal written consent was obtained from all interviewees (see example in Appendix C) before any interview and conversation with further assurance that all responses would remain with the researcher for the purposes of this project.

To ensure anonymity and protect the identity of interviewees, pseudonyms have been used throughout this study (Cohen et al., 2012). Although all participants have been given pseudonyms, the CSs for the two circuits where the headteachers were selected have privileged knowledge of the participants but they will not know who said what. This ethical issue was fully discussed with the municipal director and the participants who were comfortable with the arrangement because it was usual for researchers to be accompanied by a CS or an EO for such purposes. The potential outputs of this study were fully discussed with all participants, who have agreed that no further permission would be required before publication of the thesis or any ensuing journal publication. However, where participant voice is identifiable, the researcher has only indicated the gender of the headteacher rather than their pseudonym.

Incentives

Incentivising research participants to encourage participation remains a challenge and an ethical dilemma. Although the BERA discourages payment for participation in educational research, it recognises that in some contexts that may be challenging. For example, in Ghana, Oduro and MacBeath (2003) warn against the expectation that the researcher will provide a token gift in exchange for the participant's time. This is often so with large-scale multinational research programmes in Ghana. Where this is an expectation, the BERA suggests that care is taken 'to ensure this is commensurate with good sense, such that the level of incentive does not impinge on the free decision to participate' (BERA, 2018, p. 19). The challenge reported by Oduro and MacBeath (2003) was not encountered in this study as neither any demands were made, nor any payments issued. The purpose of the study was clearly conveyed as being part of a doctoral thesis rather than a multinational research project where it is usual for participant input to be rewarded.

Data collection methods and instruments

There were two separate visits to the field site, one in each phase. Figure 3.2 shows the operational field map that was developed to guide the fieldwork.

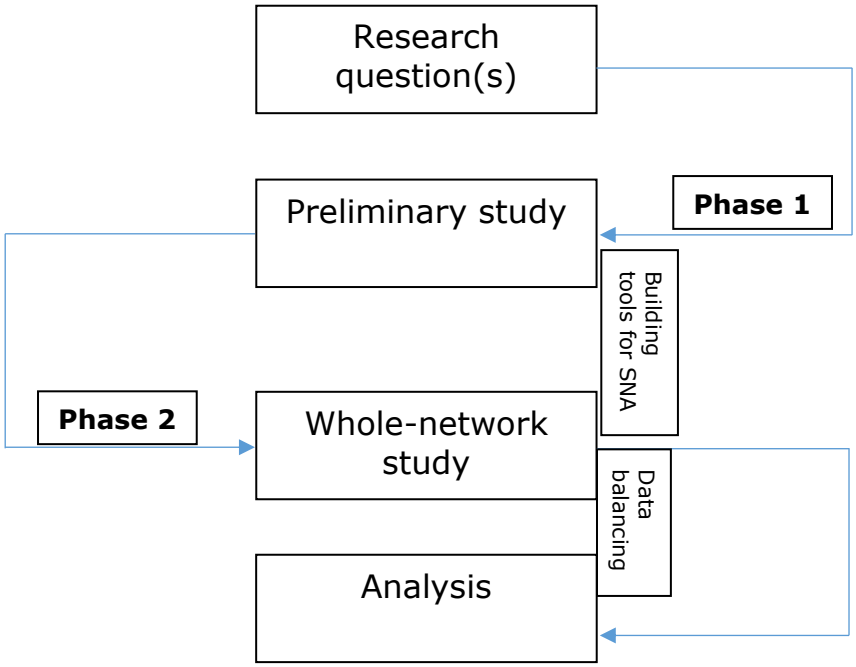

Figure 3.2: Operational field map

Each phase comprised different data collection strategies to generate the necessary information to help answer the three research questions. The sociometric survey instrument was developed after the preliminary study as expected in discovery-oriented qualitative input research design (Morgan, 2014). Data balancing occurred between the two field trips, which helped construct 'plausible accounts' (Berthod et al., 2017, p. 314) of how the headteacher experiences and practices explain the results produced from the network survey. Berthod et al. (2017) describe the data balancing in mixed studies as the process where the data generated from the narrative accounts and SNA are integrated towards a joint analysis of the network under study. In this study, this was deployed differently, and it involved checking and comparing data from Phases 1 and 2 to capture a better picture of the network and improve data quality. It also involved checking all questionnaires were fully

completed on the field site, ensuring all questions were fully understood and asking follow-up questions, where necessary, as in a series of informal exploratory conversations that were undertaken with 4 of the 17 headteachers.

Interviews

Research that involves gathering perceptions, opinions and individual narratives will often include using an interview schedule. Interviews allow exploration of the research questions more fully than could be achieved from a questionnaire or observation. Creswell (2014) points to the usefulness of interviews in research design and explains that although questionnaires have a wider reach, interviews allow detailed interrogation of respondents to achieve more depth. Although time-consuming, interviews provide the opportunity to probe further for explanations of responses provided by participants (Hammersley, 2013). In effect, the questions asked are often invitations to talk about an issue relevant to the research, although subsequent questions can be more directive and may even challenge what the interviewee has said. However, it is important to balance this with the need for a coherent data set because if too much adjustment is made for an individual interviewee, the coherence of the overall data may be skewed.

Interview choices include a semi-structured, open-ended or structured approach. Semi-structured interviews often begin with a predetermined set of questions but allow some latitude in the breadth of relevance as the conversations evolve (Cohen et al., 2012). For example, it is possible to find that the issues guiding the initial research questions must be refined or even changed comprehensively after the statements given by the interviewees (Freebody, 2003). Open-ended interviews are further along the continuum in which perhaps only a few highly general questions or issues are put to the interviewee, who is free to answer and lead the conversation

(Hammersley and Atkinson, 2007). Structured interviews restrict the domains of relevance of the conversation to a predetermined set of questions, and thus, by inference, a set of possible answers. Even though it helps focus the conversations around the research problem, it misses the opportunity to explore other avenues that the researcher may not have considered before the interviews. Hammersley (2006, p. 9) suggests that in ethnographic studies interviews should serve as:

> a source of witness accounts about settings and events in the social world that the ethnographer may or may not have been able to observe her or himself; and supplying evidence about informants' general perspectives or attitudes: inferences being made about these from what people say and do in the interview situation.

This approach was deemed appropriate and adopted throughout this study because the informal conversations and semi-structured nature of the interviews allowed for deeper conversations about headteacher practices that are not easily observable. A semi-structured interview schedule (see Appendix D) was used for the face-to-face sessions in Phase 1 with headteachers because it provided both structure and flexibility during the conversations. This helped establish some core issues to be covered but at the same time left the sequencing quite flexible (Freebody, 2003). It was emphasised to participants that there was the need to capture everything that was said during the meeting to get a true reflection of the interview, which meant their consent for recording was required before each interview. All participants obliged. A compact digital voice recorder was used to capture the interview in MP3 format. This was easy for playback when it was transferred to the researcher's computer as there was no need to convert the files into another format suitable for the computer's media player. The recording was complemented with

note-taking to pick up body language and to highlight feelings towards specific questions and/or responses.

Observations

The second type of data collection instrument consisted of written text kept in a field notebook and described as field notes (Appendix I). The data comprised descriptive accounts of specific episodes and moments either reported by participants (headteachers and education officers) or observed through shadowing of circuit supervisors during the fieldwork. This is in line with Hammersley's (2018; 2006) position on field ethnography, emphasising the importance of capturing descriptions of observable episodes and explanations that have relevance to the investigation and not just relying on straightforward answers from respondents. The stories and significant episodes add to the rich context-specific information and help explain why certain events may have taken place. These personal accounts can also prove to be useful for corroboration of responses. For example, a headteacher may describe how they introduced an innovation into their school because of their interaction with another headteacher. A different headteacher may indicate how they have developed professional skills in school leadership because of their peer-learning network.

Questionnaires

Questionnaires are widely used in studies involving a large sample or population where the aim is to ask all respondents the same questions, all which enable comparison to be made over time and between individuals and groups (Cohen et al., 2012). Nonetheless, questionnaires can also be deployed on smaller samples in social network studies with the intention of describing the nature of existing conditions or determining the relationships that exist between specific events. In

social network surveys, census questionnaires are a useful way to capture aspects of peer relations that help build the structure of the social network. It is important to recognise issues around ‘clarity, burden, sensitivity, and cognitive demand’ (Borgatti et al., 2013, p. 50). Although clarity of questioning is important in any study that uses questionnaires, it is more so in social network studies because the respondent may be asked to recall aspects of their behaviour(s) they may not readily remember or be expected to reveal their ties with people, which may evoke emotional responses. Borgatti et al. (2013) contend that these challenges are often easily alleviated by conducting some background ethnographic research as was the case in this study.

Like interviews, the survey questionnaire can be highly structured, less structured or open ended. However, Cohen et al. (2012) suggest that more structured approaches are used for larger sample sizes and less structured and more open approaches used for smaller samples. This is mainly due to the volume of data that can be produced when questionnaires are involved that adds to the sophistication of the data analysis. Data produced from structured questionnaires can be presented in various ways in terms of the frequency of types of event or feature of opinion, and which indicate the degree, level or amount of some property or perception. Equally, ‘open-ended’ questions, which invite the respondent to write a free comment, can yield opinions and perceptions.

A closed-ended questioning format was chosen for the social network survey because the boundary of the study was clearly defined, and each participant was known and listed on the instrument. Each headteacher had an equal chance of being selected and there were fewer concerns about respondent recall. An open-ended format would have been more cumbersome and prone to recall errors; it would also have removed the possibility of each participant having an equal chance

of being selected, all very important considerations for this study. Table 3.1 illustrates the two formats.

Table 3.1: Examples of open-ended and closed-ended network question formats (adapted from Borgatti et al., 2013)

Close question example	Who do you go to for advice on how to improve student discipline in your school? Headteacher 1 ☐ Headteacher 2 ☐ Headteacher 3 ☐ Headteacher 4 ☐
Open-ended question example	If you wanted advice and information about how to improve student discipline in your school, how would you go about this? (Please list anyone you may call for advice and help.) _____ _____ _____

Once the choice had been made to use a closed-ended format, another consideration was whether to use a repeated roster or a multi-grid approach (Borgatti et al., 2013). In a repeated roster format, the same list of members in the network are listed after each question. Respondents can then select the appropriate name(s) in response to the question. The multi-grid format places the lists in a series of columns with each column associated with a relational question. In the same way as the repeated roster, the respondent can then choose the names associated with each question. The repeated roster was chosen over the multi-grid approach, mainly because it is presented in a simple way and less cognitively demanding.

Another questionnaire format used to investigate social phenomena involves numerical scaling, one of the best known of which the Likert-type scale is (Cohen et

al., 2012). In this type of rating, respondents are given a statement and asked whether they agree or disagree with the statement and for the strength of their response – for example, whether they: strongly agree; agree; neither agree nor disagree; disagree; *or* strongly disagree. Rating scales can be used for the measurement of various identified features, but the absence of descriptors defining each point in the scale in the situation means that respondents are likely to use the scale differently. For example, some headteachers may have strong disagreements about a question presented; however, the strength of their feelings cannot be claimed to be the same as each one of them may view the term 'strong disagreement' differently. Some researchers prefer to adopt a four-point scale claiming many respondents simply select the middle 'neutral' category. Others seek a finer distinction between responses and have a longer scale with more points. This may give an indication of the range of perceptions – but, again, interpretation will lie with the respondent (Borgatti et al., 2013).

Another consideration is that headteachers may answer differently depending on such contextual factors as the immediate relevance of the question, the time they take to think before selecting their answer, or a recent experience. They may also answer at a particular point in time, and so their response may not be the same as the one they might give on the following or preceding day. All these contextual issues may affect the data that emerge and hence impact the validity of the research findings. Therefore, care must be taken with the design, accompanying instructions and administering of the questionnaire (Robins, 2015).

The questionnaire used in this study comprised three parts (Appendix E). The first part elicited biographical information from headteachers in the education circuit selected for the Phase 2 study. The five types of biographical data are: age, gender,

the type of school they work in, number of years as a headteacher, and their highest academic qualification. These formed the actor attributes investigated in this study. The second part of the questionnaire consisted of five close-ended network questions related to types of information and professional advice headteachers indicated from Phase 1 as being most valuable for their professional development.

Each question required headteachers to indicate which headteachers they go to for a specific type of information and advice. To help with expediency and consistency with name generation, all names of headteachers in the education circuit were provided on the questionnaire. As argued by Robins (2015), this name-generation process also helps overcome respondent omissions. For each network, headteachers were also asked to indicate the frequency of that interaction using five Likert-type indicators. The third part of the questionnaire comprised four statements and focused on headteacher views about how their professional discussions with other colleagues in their network contributed to their own professional development. Using a Likert-type scale ranging from strongly disagree to strongly agree, headteachers were asked to rate the extent to which they agreed with some statements. Headteachers were given approximately 35 minutes to complete the questionnaire, all of which were then visually checked for any omissions.

Coding and analysis of narrative data

A standardised interview protocol meant that questions were framed around specific ideas in relation to the three research questions. The audio recordings from Phase 1 interviews were transcribed promptly by hand on paper while the responses were still fresh. During the transcription process, where an interviewee had provided a response to a question that was an answer to a different question, this was transferred to the appropriate question. Even though it was a time-consuming and

laborious process, it was more appropriate than asking someone else to transcribe. In this way, comments about the interview were added during transcription, particularly the individual's body language such as their facial expression and emphasis. Also, it was easier to recall unclear responses in the recording, which then were promptly inserted. With only six participants being involved in the interviews, manual open coding of the responses was deemed an efficient approach. As Cohen et al. (2012, p. 561) suggest, this involves 'breaking down segments of text data into smaller units' for further examination and analysis.

This process started with reading and rereading the transcripts with the aim of isolating segments of text that were meaningful and relevant to the aims and objectives of the study. The next stage was to extract meaningful segments of text from the narrative accounts and group them together for further analysis. This was followed with the generation of initial codes that highlight a collection of ideas embedded in the data. For this extraction process, patterns that emerged from the data segments were listed following principles of thematic coding (Flick, 2007). For example, 'learn_peer_support', refers to building professional capital through peer support. Other codes included 'learn_workshop' which refers to learning and development through workshops and 'learn_mentoring' which refers to learning and development through mentoring.

The next step involved searching for themes by sorting the different codes into potential themes and subthemes for further analysis. The final stage comprised reviewing and refining all themes and subthemes and capturing the essence of what each theme represents. For example, 'developing headship proficiency through experience' emerged as a theme. Finally, the themes were mapped into categories that relate the literature pertinent to this study. Table 3.2 is a sample thematic

analysis and coding of the data gathered from the headteacher narratives about their professional development experiences about and how they build professional capital. It shows how the analysis inductively proceeded from identifying meaningful segments of text from the narrative data to building subthemes and then themes around the literature discussed in chapter two.

Table 3.2: Sample thematic analysis of narrative data

Segments of text relating to headteacher experiences and perceptions about how they develop their professional capital	**Themes**	**Categories (HtPC*)**
I didn't attend any preparatory workshop or do any preparatory reading, but I was confident that I could do the job. I was already acting headteacher, so I didn't have to do much preparation. (Ht2_Phase 1)	Developing headship proficiency through experience	Professional knowledge (task-specific human capital)
You cannot be taught at a workshop on how to discipline children, so your best bet is to exchange ideas with other headteachers because we all want the same for our children. (Ht2_Phase 1)	Collegial discussions and support	Professional expertise and support embedded in headteacher network (social capital)
I later devised my own strategy, which we call 'mma nkomo' [(conversations among ladies) …translated from Twi language by researcher] in my school to tackle attendance and progress for girls because that was a particular problem in my school. (Ht3_Phase 1)	Exercising professional judgement	Headteacher agency (decisional capital)

Note: * HtPC = headteacher professional capital; see Appendix F for more details

Coding and analysis of sociometric survey

Coding of questionnaire data

The questionnaire data collected in Phase 2 were collated and input into a Microsoft Excel file. The first part comprised demographic data (i.e. type of school, gender, age, headship experience and highest academic qualification) described as participant characteristics. Responses generated from the second part of the questionnaire about information- and advice-seeking behaviours were represented in adjacency matrices in Microsoft Excel, a mathematical representation based on graph theory (Borgatti et al., 2013). Each tie was coded as 0 or 1 to represent the absence or existence of a tie, respectively, between any two headteachers (dyad). So, for any two headteachers *i* and *j*, a value of 0 represents the absence of a network relation for that specific information and advice. Conversely, a value of 1 represents an interaction. In this study, interactions are directional indicating who asks who for advice and information. So, if headteacher H1F indicated that she seeks information and advice from headteacher H2F, the tie from H1F to H2F would be coded 1. However, this information- and advice-seeking behaviour may be reciprocated when H2F also indicated she goes to H1F for the same information and advice, in which case both would be coded 1. Where the relationship is not reciprocated, one of the ties would be coded 0. Table 3.3 is an illustration of the coding principle.

Table 3.3: First matrix row of matrix table for information and advice about teaching and learning

	H1F	H2F	H3F	H4M	H5M	H6M	H7M	H8M	H9F	H10M	H11F	H12M	H13M	H14M	H15M	H16F	H17M
H1F	0	1	1	0	0	0	0	0	0	1	0	0	0	1	1	0	0

In the first matrix row, headteacher H1F has indicated that she seeks this type of information and professional advice from headteachers H2F, H3F, H10M, H14M

and H15M, hence, the relationship is coded as 1. The absence of ties for all other headteachers in this scenario are coded as 0.

Following the data coding, the responses were represented in a 17 × 17 matrix table for each of the information and advice types. Two matrix tables were generated for each sociometric question representing information about headteacher relation with and without tie strengths (see Appendix G). Matrix tables 1a, 2a, 3a, 4a and 5a represent network relations without tie strength. As a one-mode data set, the columns and rows are the same. The first column and row represent the node labels (i.e. pseudonyms for headteachers) whereas the values in the remaining columns and rows represent their response with 1 indicating the presence of a network tie and 0 its absence. Matrix tables 1b, 2b, 3b, 4b and 5b represent network relations with tie strengths.

For each sociometric question, headteachers were also asked to indicate how often they seek any particular type of information and advice from their peers using the following scale: 0 = do not go to this person for advice; 1 = rarely does this (only when there is any major issue); 2 = moderately does this (once to three times a term); and 3 = frequently does this (more than three times a term). Therefore, the matrix tables have values that range from 0 to 3 to reflect the strength of the relationship. The questionnaire responses for the five types of information and professional advice (networks) under study were coded in this format because UCINET (see Borgatti et al., 2013), the statistical software package that includes a sociogram program, is compatible with spreadsheet applications such as Microsoft Excel where each datum is stored as its own spreadsheet cell.

The two software programs UCINET (Borgatti et al., 2002) and NetDraw (Borgatti, 2002) are used to develop quantitative analysis and social network maps (sociograms) that allow further qualitative descriptions. UCINET offers the opportunity to import Excel spreadsheet files where the data have been coded as adjacency matrices. This makes it easy because it reduces the amount of time required to re-input the data as required in other software. Conversely, the NetDraw program allows the user to import files from UCINET for drawing social network maps. The generated visualisations allow the researcher to analyse qualitatively any patterns in the structure of the network. The resulting sociograms not only provide visual maps but also help spot any possible miscoding.

For example, an unusual pattern may prompt the researcher to cross-check the data before any mathematical modelling or simulations are conducted on the data. It is worth mentioning that in these tables, the columns have been treated as the dependent variable (i.e. the existence or absence of asking information and advice between any two headteachers) whereas the rows are the independent variable. That ensured the direction of effect in the UCINET and NetDraw software programs capture the notion of ‘who goes to who’ for information and professional advice (i.e. demand side). Network attributes (such as age, gender, type of school and number of years’ experience) have been treated as independent variables in later analysis.

As explained earlier, the third part of the survey questionnaire comprised four statements to solicit the extent to which headteachers indicated they have improved their practice because of their network interactions. This information was coded and inputted in an Excel spreadsheet for further statistical analysis.

Analysing the sociometric survey

As discussed in chapter two, relationships are a fundamental concept in social networks as they provide the theoretical framework to examine the headteachers and any connections among them. In this study, the relationships are directional in the sense that headteachers were asked to identify peers they go to for specific types of content-related information and advice, therefore signifying a direction of flow. The information and advice may be reciprocated when headteachers have identified each other as a source of a type of information and advice. For each information type, headteachers have also indicated how often they go to a person, signifying the strength of a connection or relationship. Such analysis gives an indication of frequency of interaction between any two headteachers as well as their overall engagement in the professional network. To examine the social capital embedded in this headteacher network, measures associated with cohesion, cliquishness and centrality have been considered.

Cohesion

In SNA, cohesion is used to describe the extent to which members of the network are 'knitted' together and provides a characterisation of a network's structure. Network density and average degree are often used as measures to evaluate the level of cohesion. Density is defined as the number of ties present in the network expressed as a proportion of the total number of potential connections (Robins, 2015; Borgatti et al., 2013). Density is useful in comparing networks against each other because it provides some evidence about the possible sociological cohesion, in this case, around information- and advice-seeking behaviours. However, as Borgatti et al. (2013) explain, care must be taken in the use of such a measure because for surveys that generate a negative response, such as 'who hates who', a higher density will imply low sociological cohesion. Here, lower density

demonstrates lower sociological cohesion. Because density is prone to misinterpretation, average degree has been used to evaluate the level of cohesion and connectedness. Also known as the average links per node, it provides a better measure of cohesion by computing the number of links and dividing them by the total number of nodes. So, a network comprising *X* nodes that has a total of *Y* links (ties) joining the nodes has *Y*/*X* links per node. This represents the potential number of headteachers accessible to each member of the network.

Degree centrality

The concept of centrality has been extremely important in network studies and has been applied extensively, though there are several different ways of measuring it (Borgatti and Foster, 2003; Freeman, 1979). Generally, the centrality of any node is about the contribution that node makes to the structure of the network. It indicates the structural importance of the node in relation to other nodes in the network. For example, a headteacher might be important because of the number headteachers who contact them for information and professional advice. On the other hand, a headteacher may be structurally important because removing them from the network may disconnect the network or cut off others from the network. Therefore, centrality covers a range of concepts one of which is considered for this study i.e. degree centrality.

Degree centrality is a measure that helps to evaluate an individual's position in relation to other members of the network and indicates how close they are to others. Freeman (1979) postulates that in an undirected network, the degree centrality *di* for an actor *i* will be given as:

$$di=\sum_j Xij$$

where X*ij* is the (*i, j*) entry for the adjacency matrix. For a directed network such as this professional network, a distinction is made between ‘indegree’ and ‘outdegree’ centrality. These two measures help to examine the number of headteachers a person seeks out (outdegree) in comparison to the number of headteachers that seek out a particular person (indegree) who is described as the major source of that type of information and advice within the peer-learning network.

Degree centrality helps to evaluate the potential access any headteacher may have to information and professional advice embedded in the peer network. This application of the degree centrality measure in this investigation shows the position a headteacher occupies arguably can impact on their access to their network peers. Stronger ties are more beneficial than weaker ones as they offer opportunities for greater access to resources and activity from the resulting higher number of channels and connections. In information-based networks, such as this study, the headteacher that others most nominate as a person they go to is equally important as they may be performing other functions such as informal mentoring in the peer network. A headteacher’s indegree centrality represents the number of other headteachers who indicated seeking information and professional advice (headteacher in-coming tie) from that headteacher. This measure is often interpreted as ‘popularity’ for the network being investigated. In this study, it will represent headteacher popularity for any given information and professional advice type. Conversely, a headteacher’s outdegree centrality represents the number of how many headteachers from whom they seek information and advice. Thus, in this study, outdegree centrality reflects the number of headteachers to whom a headteacher turns for advice. As such, the outdegree centrality measures may be interpreted as a headteacher’s self-reported participation level in the information and professional advice network.

Cliquishness

Cliques in social network research refer to a subgroup of the network with all possible ties present and therefore represent a maximally complete subgraph (Borgatti et al., 2013). In graph theory, completeness implies every node within the group (in this case the clique) has a tie to each other (i.e. is adjacent to each other). This is significant because it is easy to see groups and clusters in a network structure where completeness may not exist (illustrated in Figure 2.1). In applying cliquishness to social network studies, the minimum number of actors/participants is often set at three because normally couples or single actors will not be considered as groups. For this reason, the minimum clique membership set for the headteacher network in this study is three.

Cliquishness is considered important in this headteacher network because it reveals a number of structural properties of any network. For example, it reveals the number of subgroups that may exist in the wider group and therefore provides further evidence of cohesion and bonding on a much smaller scale within the network (Robins, 2015). Clique formation can also be used to obtain a measure of association between any pair of actors. If one headteacher is in multiple cliques that include another headteacher, it is reasonable to assume that these two headteachers are closer associates within the wider network.

In social networks where there are many cliques, it is often possible to see individuals occupying strategic positions that connect two or more cliques together. In such situations, these individuals are referred to as bridges because they are central connections between two or more different cliques. In this headteacher network, those occupying bridging positions could potentially be providing a network link or connection to new ideas, innovation, etc. because their strategic positions

give them access to ideas and people (within the network) that are not necessarily available to everyone in the wider network.

Quadratic Assignment Procedure (QAP) correlation and regression

The QAP correlation procedure in UCINET, correlates any two matrices and computes an ordinary measure of statistical association between them such as Pearson's *r* (James, et al., 2017). Although QAP correlation is generally used in studies involving hypothesis testing, it has been used in this study as a measure of 'observed correlation' between any two of the five networks investigated (Borgatti et al., 2013). For example, in this study, it is necessary to compare types information and advice headteachers indicate as valuable and to establish similarities and differences in the information seeking behaviours on the headteachers.

In SNA, the QAP correlation value is always between –1 and +1. Negative values are interpreted as a downward relationship between the two sets of matrices being compared whilst positive values are interpreted as upward relationship between the matrices (James, et al., 2017). A correlation value of –1 is interpreted as a negative (downward) but perfect linear relationship which means, whilst one variable is increasing the other will be decreasing. A correlation of –0.5 will be interpreted as a negative (downward) but moderate linear relationship between the two sets of data. A correlation of 0 implies a non-linear relationship between the two data sets being compared. For positive correlations, a positive value, say 0.5, will be interpreted as an upward but moderate linear relationship between the two sets of data whilst a correlation value of 1 is interpreted as an uphill and perfect linear relationship.

QAP regression also known as multiple regression QAP (MRQAP) is used in SNA to model the values of a dyadic dependent variable such as information and advice

seeking ties using multiple independent variables (e.g. age, gender, etc.) (Borgatti, et al., 2013). A negative regression coefficient means that high values of one variable are associated with low values of the other (Borgatti et al., 2013). Therefore, as one variable increases the other decreases. A positive regression coefficient will be interpreted as a linear and upward relationship between the variables compared.

Frequency and percentage

To further examine how headteachers network interactions have helped them improve their practice, four statements were posed based on a Likert-type scale ranging from strongly disagree to strongly agree (see Appendix E Part C). The coded data were analysed using frequency tables and percentages to illustrate strength of the agreement with the statements posed.

Trustworthiness of the study

Consideration of data validity and reliability

To assure data validity and reliability, a few decisions were taken during the design of the instruments and the collection of information and data. Firstly, it was necessary to guard against possible disruption during the face-to-face interviews to avoid multiple breaks during conversations. It was agreed with the participants a day in advance to find a slot in their diary where we could use their office or staff room (where they didn't have their own office). This worked well in all instances apart from one where the school was undergoing some renovation work. The interview had to be carried out in a corridor on the school premises, which prolonged the interview because of constant interruptions from students and staff. Four of the headteachers had the opportunity to see the interview questions a day in advance to prepare their responses. This helped facilitate their interviews as they came prepared with their responses. Secondly, interviewees agreed for all discussions to

be audio-recorded so that their data could be captured in its original form (Cohen et al., 2012). Also, having audio recordings of interviews made it easier to cross-check any aspect that was unclear and ensure it correctly represented headteacher views (i.e. respondent validation). This cross-checking process was done with two interviewees because their responses to a particular question were unclear during the transcription process.

In social network surveys conducted through print questionnaires, it is common for respondents not to return their questionnaires, so a third consideration was to address the issue of response rate. This was particularly important because, for a whole-network study, a 100% response rate is required. This was done by physically administering all the questionnaires and immediately collecting them on completion (about 35 minutes). This took place at one of the circuit meetings rather than travelling to every school. However, the disadvantage was that the researcher was held up in Accra until the CSs provided the dates for these meetings. The fourth consideration was guarding against respondent inaccuracy and missing data (Borgatti et al., 2013) either because the respondent has misunderstood a question and/or provided the wrong response or omitted their response to a question. Again, having a face-to-face meeting with all the respondents gave the researcher the opportunity to explain all the questions carefully. However, this approach may not alleviate respondent inaccuracy completely as was experienced in this study. To resolve omission, the researcher took the contact details of all the respondents and was able to contact them via telephone to follow up on any response that was missing. In addition to these strategies, the questionnaire items were scrutinised by an academic colleague and two headteachers from the sample. Each item was explained to the participants to ensure that they understood and responded appropriately. These two actions helped improve data quality and reliability.

Generalisation

Generalisation usually refers to making inferences and drawing conclusions from a sample that can be applied to a population, a position often described as statistical generalisation (Cohen et al., 2012). However, this is not always easy to achieve in educational research that involves people's perceptions and behaviours in a bounded community; here, the researcher cannot identify, define and measure all the variables that affect the events under study (Bassey, 2000). The sociocultural orientation of this study implies the focus is on 'moments in action' (the emergent), which are shaped by the headteacher views of what counts as valuable professional knowledge and their interpretation of who in their peer network would provide them with such valuable professional information and advice, hence building their professional capital. Therefore, unlike most quantitative studies involving SNA, this study does not seek to establish cause and effect or test any hypothesis. The findings give an empirical statement of what has been discovered about actual headteacher situations and events. Findings from the sociometric aspect of the study provide evidence in support of conceptual generalisation; in this case, the value of professional capital. Any predictions that emerge from the analysis of the findings is a fuzzy generalisation, which extrapolates these findings to similar people-events-situations and suggests that similar findings may be discovered elsewhere (Bassey, 2000).

Summary

In this rather lengthy chapter, the pragmatist beliefs underpinning this study have been explained including a justification of mixing methods as an appropriate research approach. It has been argued that the mixed-methods approach adopted for this study offers a stronger evidence base to answer the three research questions; the survey allows the collection of a wider breadth of information about

professional development perspectives of headteachers from a larger sample, whereas the narrative instruments offer an opportunity for in-depth studies (Johnson and Onwuegbuzie, 2004). The sequential research method, *SNA with ethnographic sensibility*, has been explained as a method that offers the potential to provide a more complete picture of the phenomenon under study compared to what could have been achieved from either the survey or ethnographic instruments on their own. An explanation of the sampling strategy and the boundary of the population has been given. The approach to data analysis has been discussed with a justification of the social network metrics being used to examine participation levels of headteachers and their potential to access professional capital embedded in their peer network. Some of the challenges associated with data quality and ethics in research of this kind have been discussed with a clear explanation as to how these issues have been identified and mitigated. In the next chapter, findings and analysis of the initial exploratory study are presented and analysed.

CHAPTER FOUR: PHASE 1 – PRELIMINARY STUDY

Introduction

This chapter is the first of two chapters that present the findings and analysis from the study. It focuses on the first two research sub-questions: *RSQ1: What are headteacher views and experiences about their professional development and how they build professional capital in the Sunyani district of Ghana?* and *RSQ2: What types of professional knowledge do these headteachers indicate as most valuable to their practice?* The chapter is divided into four main sections. The first section explains how information and data were collected in Phase 1. The second section is about headteacher qualifications and training. The third section presents the findings on the first research question; it draws on the narrative data (interviews and informal conversations) collected. The fourth section presents the findings and analysis for the second research question; it focuses on themes that emerged from the data about types of information and advice that headteachers indicated as most valuable for headship practice.

All interviews with headteachers and informal conversations (recorded during shadowing of education officers) were conducted in English; therefore, direct quotes are used in places to represent their voice. Occasionally, headteachers used phrases in the local language, Twi, during their interviews as they were more confident expressing themselves in that way. I have translated these statements into English with a few exceptions where it has been difficult to find a direct expression of the Twi word or terminology in English.

Data collection

As explained in chapter three, the initial field site comprised two education circuits taken from one municipal district with 17 headteachers in each circuit making a total of 34. Six headteachers were selected from these two education circuits out of the possible 34. The data collection took place over a 12-day period during which a total of six headteachers were interviewed. The questions covered specific themes drawn from the three research sub-questions with each interview lasting approximately 45 minutes. Overall, there were three headteachers each from the two education circuits. Headteachers Ht1, Ht2 and Ht3 worked under one education circuit and headteachers Ht4, Ht5 and Ht6 worked in another. There were three headteachers from basic schools (primary + JHS) and three from JHS only. Five headteachers indicated that they were above 45 years of age.

Providing headteachers with the questions before meetings proved invaluable for three reasons. Firstly, it helped guard against significant divergence from the focus of the interviews. Secondly, headteachers came to meetings well prepared in advance and therefore seemed more confident in their answers. Some had written their answers down and referred to them when they were unsure. The two headteachers who didn't receive the questions in advance seemed less confident and their interviews took much longer. However, it is worth noting that the lack of prior preparation for these two headteachers did not hinder their ability to provide appropriate responses during the interviewing. Finally, after the interview, the written responses provided an opportunity for cross-referencing with the notes taken. This interview protocol enabled capturing as many divergent views as possible in the key areas that headteachers were consulting each other for information and support in performing their duties.

In addition to the questions in the interview guide, there were follow-up questions based on the concepts introduced by the headteachers. These gave more insight into the meanings that they attached to their perceptions of professional development and networking. The follow-up questions were specific to the comments that the interviewees made, and these were pursued via telephone conversations. In some cases, probing had to be done to keep the interviewee on track to complete an idea, fill in the missing piece or requested clarification of what was said and ask for examples (Hammersley, 2006). Probing and follow-up questions helped to get 'depth, detail, vividness, richness, and nuance' (Rubin and Rubin, 2012, p. 129). In this study, context is important, so it was necessary to ensure that participant voices, experiences and views informed the survey instrument.

Education officers such as circuit supervisors and training officers have a range of leadership responsibilities in the district that relate to the aims of the study. Through informal conversations and observations, views of four education officers about headteacher professional development and social learning practices were deemed relevant and recorded in the field notebook (Appendix I). But because their distinct roles within the education office can be identifiable if specified, their identity is protected by describing all of them as education officers.

Table 4.1 represents the demographic profile of participants involved in Phase 1 interviews, informal conversations and shadowing.

Table 4.1: Demographic profile of participants in preliminary study

Activity	Role	Pseudonym	Gender	Years' experience as headteacher	Type of school	Age (years)
Semi-structured interview	Headteacher	Ht1_Phase 1	M	10+	JHS only	45+
Semi-structured interview	Headteacher	Ht2_Phase 1	M	0–5	Primary + JHS (basic school)	36–40
Semi-structured interview	Headteacher	Ht3_Phase 1	F	0–5	JHS only	45+
Semi-structured interview	Headteacher	Ht4_Phase 1	F	10+	Primary + JHS (basic school)	45+
Semi-structured interview	Headteacher	Ht5_Phase 1	M	0–5	Primary + JHS (basic school)	45+
Semi-structured interview	Headteacher	Ht6_Phase 1	F	10+	JHS only	45+
Informal conversation	Education officer	EO1	F	–	–	–
Informal conversation	Education officer	EO2	M	–	–	–
Informal conversation	Education officer	EO3	M	–	–	–
Informal conversation	Education officer	EO4	F	–	–	–

Note: JHS is junior high school; basic school is a much bigger school that has both primary and JHS located in one compound

For headteachers, it shows the method used to solicit information from them, their role, pseudonym, gender, employment status, years' experience as headteacher, type of school and their age range (years). For education officers, it shows the method used to solicit information from them, their role, pseudonym and gender. These pseudonyms are used in any quotes taken from their interview transcripts and relevant notes made in my field notebook.

Headteacher qualifications and training

Four of the six headteachers in Phase 1 have a bachelor's degree in education, one headteacher has a master's degree in education and one holds a Teacher's Diploma that is on the old framework for teaching qualifications. Although limited, there was some evidence that indicate formal CPD workshops and training programmes are available in this district. For example, the official CPD plan for the 2012/13 academic year (see Appendix H) covered a range of topics such as:

- one-day generic workshop on professional development
- orientation for headteachers of basic schools on staff rationalisation
- headteacher training on school report card
- headteacher training on school census.

Evidence from the 2012/13 CPD plan suggests that most training and workshops are held in the regional office. They covered a range of activities for various roles in the school including updates on new initiatives and using new reporting templates, which were mainly for headteachers. Informal conversations with education officers (EOs) about headteacher training and development confirmed the CPD opportunities but also revealed other opportunities for professional development (see Appendix I for sample extracts recorded in the field notebook). For example, one of the education officers (given pseudonym EO1) explained that her regular visits to schools and clusters of schools is an opportunity to update teachers and headteachers about new national initiatives and to '*answer any questions*' they may have. EO1 further explained how professional development programmes, particularly school-based INSET (SBI), are organised and promoted:

> *Poor standards in science results in one particular school may trigger an SBI that will be facilitated by a district or municipal officer with that subject*

specialism. At the cluster level, curriculum leaders for all primary schools or all headteachers may be invited to training sessions when there are changes to the curriculum, textbooks or reporting tools. These sessions were all delivered during instructional hours and are face-to-face; therefore, SBIs are often difficult to arrange. [An] *SBI for remote schools remains a huge challenge for us for a number of reasons including transportation.* (EO1)

An incomplete visitation record sheet obtained from the education office provided some evidence about the formal arrangements available to support schools, teachers and headteachers (not included as an appendix to preserve anonymity). From the record sheet, it is evident that there is a system in place where EOs make regular support visits to schools to provide information and advice. For example, on this record sheet, there was evidence that the school-based INSET (SBI) and cluster-based INSET (CBI) were being organised even though the schools involved had not been specified. According to EO1, SBI programmes mainly focused on maths, English and science instructional methods and were predominantly funded through capitation grants whereas the CBI focused on much broader initiatives, such as 'girl child education'. These were formal programmes offered to headteachers and teachers.

It was also explained that all workshops were organised during 'instructional hours', which impacted on attendance because headteachers who have teaching responsibilities sometimes struggle to find cover for their classes. Another EO (given pseudonym EO2) explained the challenges of formal and centrally organised workshops:

You see sometimes headteachers located in fairly distant towns from the district capital don't send staff for workshops because they can't cover

classes in their absence or sometimes can't even find enough money to cover the transportation cost. (EO2)

EO2, however, mentioned that they deploy a '*cascade model*' of CBI workshops. This means headteachers or other delegates who attend these workshops are expected to cascade the information and knowledge to other schools within their circuit and therefore sometimes help overcome some of these difficulties.

Another EO (given pseudonym EO3) opined that headteacher training and development should focus on government priorities. He also recognised the role played by 'external donor agencies' (e.g. DFID, JICA and USAID) who often sponsor professional development programmes in schools:

It is very important for professional development programmes to focus on specific aims of government and donor agencies who sponsor these centrally run programmes. For example, the workshop on 'school-based girls' facilitators' was sponsored by a donor agency working with government to improve the access and support for vulnerable girls while in school. School coordinators are designates appointed by the headteacher to oversee this initiative. (EO3)

The contribution of external donors to teacher and headteacher professional development is common across Ghana and has been previously reported in some studies including Bush and Oduro (2006).

Views and experiences on professional development and building professional capital

As discussed in chapter two, headteachers, as agentive and knowledgeable experts, are known to collaborate, interact and share information and advice in various ways by drawing on their collective experiences and knowledge of their professional context. This results in the creation of a form of capital, an asset embedded in their professional relations and accessible to all participants. This form of capital – conceptualised as *professional capital* in this study – represents headteacher professional knowledge and expertise (task-specific human capital), some aggregation of the professional information, advice and support embedded in the headteacher network (social capital), and their capacity to make informed decisions based on knowledge and advice gained from their peer-to-peer interactions (decisional capital). The rest of this section presents the findings and analysis from the interviews with headteachers, focusing on their professional development experiences of how they build professional capital.

Developing headship proficiency through experience

The experience of the six headteachers involved in Phase 1 ranged from those in their first headship role to more experienced. For the purposes of this study, three headteachers, Ht2, Ht3 and Ht5, are considered early-career headteachers (0–5 years' headship experience), and the other three, Ht1, Ht4 and Ht6, described as late-career headteachers. Headteachers from both education circuits confidently expressed their capacity to take up their headship posts due to the wealth of experience they had gained from their length of service in education. Two late-career headteachers, Ht1 and Ht4, who belonged to different education circuits, emphasised the importance of their teaching experience. Headteacher Ht1 recalled his experience:

I was very elated and proud to be appointed as a headteacher. Although I had no formal preparation to take up the job, I was confident that I could do the job. After several years of teaching, you always feel you have to progress at some point to headteacher. (Ht1_Phase 1)

This view was shared by headteacher Ht4:

It was a 'good feeling' to be appointed a headteacher. I felt great because I was selected through a competitive process. I'd been teaching for a very long time in KG, primary and middle school (old system) and then JHS in the new system. I didn't do any prior reading or preparation. But I was expected to get on with it because I have many years' experience in education you know. In our system that is very important because I had developed good relationships with staff all through those years, so I feel that was good preparation. Even though I didn't do any formal preparations in the early days, official support was provided by the district office. (Ht4_Phase 1)

It can be inferred from these headteacher views that they believed length of service was very important. Headteacher Ht4 emphasised the significance of her teaching experience and how that had been valuable preparation for headship.

Another headteacher, Ht2, described the absence of formal leadership training and preparation before taking up his post as headteacher. Nonetheless, he also felt he had the necessary capabilities to lead and manage a school. Like headteachers Ht1 and Ht4, headteacher Ht2, who had been working as a teacher for a significant number of years and an acting headteacher before his appointment, also placed a lot of value on his wealth of experience. He recounted his experience:

It was great to be appointed a headteacher I was so excited and even cried. […] I didn't attend any preparatory workshop or do any preparatory reading, but I was confident that I could do the job. I was already acting headteacher, so I didn't have to do much preparation. (Ht2_Phase 1)

His excitement was also evident from his body language during the interview as he recalled the joy and pride of that moment, when he received the good news about his appointment. For another headteacher, Ht6, she had been acting as assistant headteacher before her appointment. However, contrary to others, she mentioned that she received some training as assistant headteacher but emphasised that was not about preparation for headship. Headteacher Ht6 recalled her experience:

*I felt ready because I'd worked as assistant head previously for a number of years. I didn't take part in any 'self-training' to prepare for headship. There is normal INSET for assistant heads but that is not necessarily prep*aration *for the headteacher role. Based on my previous experience as assistant head, I was very familiar with systems and administration. I had also worked as acting head in the same school. I also believe my experience in leadership roles in the church help me face the leadership challenges in the school, although they were not necessarily the same. After my interview, there was an introductory workshop about leadership roles and particularly headship.* (Ht6_Phase 1)

Like others, headteacher Ht6 believed her teaching and assistant headship experience were adequate preparation for headship.

For headteacher Ht5, promotion to headship served as validation of his effectiveness as an outstanding teacher. In his opinion, there was no need for further

leadership development as he understood his schools and has built very good working relationships with the teaching staff over the years as teacher and assistant headteacher. He explained that he had served in various roles and risen to the rank of 'director II', which validates his capabilities and therefore eligibility to be a headteacher:

> *I had been a teacher for a long time and then later as an assistant headteacher so when I reached the rank of director II, I became eligible to be interviewed as headteacher. I remember the CS telling me about a vacancy that had come up in another school and whether I was interested. […]. I was interviewed and appointed but had to go to another school. I was elated and my whole family was proud of me. I didn't do any preparatory work. But during the first month of my appointment, I attended INSET via* [the] *education office. I was taken through the requirement of being an effective headteacher. I have subsequently attended four workshops (how to help teachers prepare lesson notes, learners' statistics, good use of textbooks, effective use of learning materials). Bear in mind I've only been doing this for four months so maybe there's more training planned for me. In the meantime, I read the* Headteachers' Handbook *very often for ideas on how to deal with some of the everyday challenges.* (Ht5_Phase 1)

These findings show that headteacher experiences and beliefs about their preparedness for the school leadership role is consistent across the two education circuits involved. Headteachers in both circuits indicate their teaching experience provides significant task-specific knowledge and skills that could not be attained through workshops. Purposively choosing headteachers in the early phase of their career as well as those described as late-career headteachers offered the opportunity to compare views about the value of experiential learning and

development in building task-specific professional capital. Views expressed about the value of long service and experience were similar for early-career headteachers (Ht2, Ht3 and Ht5) and late-career headteachers (Ht1, Ht4 and Ht6). Similarly, there was no discernible difference between the views expressed by the female and male headteachers. Although there are no formal initial professional development programmes for headteachers, all interviewees were confident about their transition into headship.

In this study, experience gained as a teacher, and assistant headteacher in most cases, is deemed by headteachers and EOs as significant in building professional capital. This informal, experiential and on-the-job learning makes possible the development of task-specific human capital. The EOs and headteachers involved in the study indicated teaching experience and leadership of activities directly impacting teaching and learning were the most critical ingredients for headship, and therefore, a valuable way of building professional capital. Even though these headteachers placed high value on their experience and its contribution to preparing them for headship, the lack of formal preparatory programmes is sometimes positioned in the literature on school leadership in Ghana, and much broadly Africa, within a deficit narrative. For example, Zame et al. (2008) argue that long service and teaching experience is not adequate preparation for headship and conclude that a structured and formal process be put in place to prepare individuals for headship. This view contradicts the experiences shared by the headteachers involved in this study. Gibbons and Waldman (2004) argue that workers promoted into a position that requires supervision of others should have capacity to perform the tasks of the workers being supervised. The reason is that knowledge of those tasks, task-specific human capital, is likely to be useful in helping the promoted worker be a better supervisor.

The significance attached to teaching experience and its contribution to building professional knowledge was also a view shared by the EOs during our informal conversations recorded in the field notebook (see Appendix I). EO1 and EO2 indicated as that significant experience as a teacher provides the stock of knowledge required to work effectively as a headteacher. EO1 explained that, in her view, headship preparation is a continuous process for all headteachers who aspire to take up leadership:

> *In my view, an effective school leader is someone who understands the fulcrum of the job which is teaching and learning. This means he or she should be a very good role model as a teacher and be able to inspire others to achieve greater heights. Their leadership skills overall are developed over time as they engage in a range of activities while being a teacher. As for the administration side of things, everyone can pick them up when they are appointed. The activities and support infrastructure in the district and municipal office is there to help teachers and headteachers. That's how our system works so for me headteacher preparation is a continuous process for all teachers who have that aspiration. Some teachers don't end up being headteachers you know … they rather become* [education officers (job title used for anonymity)] *like me and are expected to provide support and leadership to schools, teachers and headteachers.* (EO1)

This view from EO1 suggests technical knowledge developed through practice as a teacher and active experimentation that is situated in their everyday practice provide the necessary professional knowledge base and skills for school leadership (Eraut, 2011; 2007; 2004; Knowles et al., 1984). This view was shared by EO4, who also

explained that the experience and understanding of teaching and learning and how to support others to do that well are fundamental to the headship role in Ghana:

> *You know every headteacher wants his or her school to be the best in the district and the best way to do this is to focus on teaching and learning. At the end of the day, it is the results that count. And how do you become good at teaching and learning? It is by practising and having an open mind. Many years of teaching and doing this well is the best preparation for headship and even my role. It is not uncommon to become a circuit supervisor without headship experience.* (EO4)

In both statements, the EOs seemed to provide a rationale and justification for the absence of a formal and structured programme in the 'Ghanaian system'. They emphasised some complexity in developing one; however, most importantly, both opined that headship preparation is a continuous process, which is founded on developing good technical knowledge about teaching and learning as well as how to help others develop their teaching practice.

Collegial discussions and collaboration

All six headteachers interviewed expressed that it was very important for headteachers to get together to share their problems and solutions. These sentiments were expressed in various ways. For example, headteacher Ht6 highlighted the paucity of training available but acknowledged that she drew on other headteachers' experiences. She described how important it was to work very closely with other headteachers:

> *There are very few training programmes available for headteachers so for me the best way for us to improve, as headteachers, is to work closely and support one another. Most important of all, there should be greater dialogue*

with headteachers about their learning and development, I mean training needs analysis. […]. I feel we learn better when we get the opportunity to chat about our challenges and how we have managed to resolve everyday problems. (Ht6_Phase 1)

The views of this late-career headteacher in relation to collaborative learning were similar to views expressed by headteachers Ht4 and Ht5, who belong to the same education circuit. Headteacher Ht5 explained:

To be honest, most of my leadership development has been 90% through my own efforts. I believe headteachers learn and develop best when they work with other headteachers. Group work and cluster collaboration is the way forward. (Ht5_Phase 1)

Some headteachers mentioned that they were sharing all sorts of ideas about teaching and learning to advance not only their own practice but also that of their teacher colleagues. For example, one of the early-career headteachers, Ht1, explained:

We occasionally meet together with our CS [circuit supervisor] *and although this is informal, we discuss issues openly and we* [headteachers] *all come out with something. I mean we acquire new knowledge and sometimes we pick up things we can try in our school as well*. (Ht1_Phase 1)

This demonstrates a willingness and commitment to collaboration and information- and advice-seeking to improve themselves and their schools. Another headteacher emphasised how formal training and professional development could not provide the necessary professional knowledge for dealing with student discipline.

Headteacher Ht6 emphasised the importance of networking and how that provided the best way of soliciting information and advice on student discipline:

> *We all want to make sure our students and teachers are disciplined and demonstrate good moral and social behaviours. But you see, you don't get training on such issues. So, your best bet is to find out from other headteachers or your circuit supervisor about what others have tried in their school.* (Ht6_Phase 1)

In summary, headteachers explained that their problems are common across their schools and communities; therefore, brainstorming challenges and finding pragmatic solutions as a group were more valuable than attending workshops. One group of headteachers cited instances where their circuit supervisor had facilitated meetings and events for sharing good practice as well as sharing problems. Others indicated that they learn from other headteachers through informal chats and discussions, which often take place in their informal meetings as a group.

Informal mentoring and peer support

Although all the headteachers expressed strongly their capacity to lead a school because of their teaching experience, most of them had also acted as assistant headteachers before their appointment to substantive heads. There was evidence that suggest practices of informal peer mentoring and apprenticeship, as advocated by Earley (2009) where potential headteachers learn from headteachers before 'transitioning' into headship. For example, headteacher Ht1 expressed how she had to rely on other '*seasoned headteachers*' for advice routinely during her transitioning into headship:

> *There was no official support from the municipal education office. I had to rely on other seasoned headteachers for advice initially and I continue to do*

so. I have some good friends who are more experienced headteachers. (Ht1_Phase 1)

According to headteacher Ht3, she was expected to learn while at work and do so very quickly. She explained that there were administrative tasks that had to be completed for auditing purposes as well as day-to-day management tasks that all proved quite challenging. Nonetheless, she didn't think she required any specific training and development before her appointment because in her words '*it was a straight transition*'. Like other headteachers, she emphasised the help she received from peers:

Other headteachers and the circuit supervisor were very helpful during and after my interview. For example, a colleague spent a few hours explaining how to manage capitation grant and how to do the School Improvement Performance Plan (SIPP). (Ht3_Phase 1)

Headteacher Ht2 described the support received from peers as mentoring from the previous headteacher in his school:

The support available in terms of preparing me for the headship was mainly the mentoring I received from the previous headteacher. It was the best form of development I could have hoped for. We worked through real challenges at work and he was always available to advise. (Ht2_Phase 1)

Headteacher Ht5 also mentioned the support received from the CS after appointment and being allocated a mentor, thus illustrating support among headteachers:

After my interview, the CS took me through what was expected from headteachers and arranged for me to be given a Headteachers' Handbook

and introduced me to another headteacher who could mentor me. (Ht5_Phase 1)

The remarks about mentoring and support from peers add to the importance of relationships that have been built up among headteachers and evidently with assistant headteachers too. The most experienced headteacher from the sample of interviewees expressed her views:

There's a lot of collaborative learning among headteachers in each circuit. In my circuit, there are lots of experienced headteachers like me so there should be opportunities for new headteachers to learn from more experienced ones. There are many ways to do this apart from asking individuals, we can learn from each other via headteachers' association meetings. (Ht4_Phase 1)

Exercising professional judgement through active experimentation

In Hargreaves and Fullan's (2012) professional capital equation, the practitioner's capacity to make discretionary judgements that produce results is as important as the talents and skills (human capital) and the social capital they have access to. As Hargreaves and Fullan (2012) argue, having the agency and confidence to act differentiates professionals from amateurs. Indeed, sharing good practice and honing their skills are necessary for every headteacher but in education systems that are poorly resourced, such as the district involved in this study, making incisive decisions are critical to success. Headteachers shared examples about how they have picked up ideas from their peers and adopted them in their schools to make significant improvements. For example, headteacher Ht6 spoke about how she adopted another headteacher's strategy and used that to drive improvements in her own school:

Circuit supervisors meet with headteachers in their circuit to share good practice. This is of particular importance in our system in addition to these training workshops which often focus on supervision and monitoring skills. For example, we had support from a colleague about effective use of school report cards. This helped me to collect data about each class and performance indicators on the core subjects. I know the class averages and the percentage of children performing below the average in certain subjects. This gives me important information to discuss with class teachers as we plan remedial action for those underperforming. (Ht6_Phase 1)

Another headteacher Ht4 gave a tangible explanation of actions he has taken as a result of learning from his peers:

I have developed my own induction programme for new teachers based on what I have learnt from other headteachers and previous meetings. I develop my leadership practice through daily engagement with the job and referring to the headteacher handbook, which I think, is an invaluable resource. (Ht4_Phase 1)

Headteacher Ht3 explained a tangible example of how she had adopted and adapted ideas from another headteacher to address a very important challenge in her school:

During a discussion at one of our cluster meetings, one headteacher mentioned an approach they were using to tackle absenteeism particularly for girls. I then arranged to meet him in his school to learn more. I later devised my own strategy, which we call 'mma nkomo' [(conversations among ladies) …translated from Twi language by researcher] *in my school to tackle attendance and progress for girls because that was a particular problem in*

my school. This involves after-school informal sessions with all girls in JHS who are at the vulnerable age where they can get pregnant easily. Since then we have seen improvement in attendance and progress of girls, and teenage pregnancy in my school has been curtailed in the last two years. We involve all the female teachers in these discussions, which make the girls comfortable. (Ht3_Phase 1)

The example from headteacher Ht6 demonstrates opportunities created in the education circuit to help headteachers develop their knowledgeability (Ogawa, 2003). But as Ogawa (2006) contends, being able to convert knowledge into practice is what improves capability and the extracts from headteachers Ht4 and Ht3 (who belong to different education circuits) show how they have taken up ideas from their peers and successful adapted and implemented them to good effect in their school.

Further evidence of exercising professional judgement was illustrated by headteacher Ht2, who gave an example of how he has used his own initiative to solicit funds for an infrastructure project:

I can use myself as an example… Like you see, currently, the uncompleted project that is going on, it's from my own initiative. I've never had support from anywhere. Though I've written letters out… I've written; I've published it in the dailies, soliciting for assistance, [chuckles] which I'm yet to hear something… For now, I've not heard [anything]… But I will make sure I complete this project before I'm transferred […] (((Ht2_Phase 1)

These extracts point to headteacher agency and capacity to deal with some of the challenging and demanding tasks of school leadership and management, by drawing on their network for support that may not be easily available from the *Headteachers' Handbook* (Fertig, 2012).

Professional knowledge required

As the headteacher knowledge base is critical in the professional capital equation, it was important to explore the content of headteacher interactions, particularly the types of information and advice that they deem valuable professional knowledge (Geeraerts et al., 2018). Two main categories emerged from the data, those that relate to technical and instrumental support and those that were affect-laden (Finnigan and Daly, 2010). Technical or instrumental support refers to the flow of information and advice that relate to organisational goals. The types of information and advice that emerged under this category are pedagogic, subject and administrative. Pedagogic knowledge and advice are those that make it possible for a headteacher to advise a colleague on an aspect of their teaching, classroom practices and curriculum delivery. Subject knowledge and advice are those that make it possible for a headteacher to give advice to a colleague on a topic of a subject. Administrative information and knowledge are for tasks that are not directly related to pedagogic and subject knowledge but are required to be undertaken, such as completing statutory forms and communicating with stakeholders. Table 4.2 summarises themes and categories of professional knowledge and advice that headteachers indicated as most valuable for their practice.

Table 4.2: Categories and types of information and advice exchanged in support of professional development

Category	Theme	Types of technical task-specific information and advice
Technical/instrumental	Teaching and learning	New ideas about how to teach lessons better (6) *
		How to teach complex topics (4)
	Helping others improve on their practice	Supporting 'ineffective' teachers often NQTs (6)
		Coaching skills so I can provide holistic support on curriculum delivery (3)
		Developing my ICT skills so I can support others (2)
	Dealing with student discipline	Exchanging ideas about handling student discipline (6)
	Delivering the national curriculum effectively	Information and advice on how best to structure timetable, ensure there are enough textbooks, etc. (6)
		Communicating with stakeholders about curriculum (4)
Affect-laden	Career progression	Sharing information and advice about future career opportunities (4)

* Numbers in brackets indicate the number of headteachers who indicated that type of information and advice as being valuable to their practice.

The categories and themes that emerged from the data are discussed next.

Technical information and advice

The main types of task-specific information and advice headteachers indicated they value the most were grouped under four themes: (i) new ideas about teaching; (ii) helping others improve on their teaching (often newly qualified teachers (NQTs)); (iii) dealing with student discipline; and (iv) how to deliver the national curriculum effectively.

Teaching and learning

Soliciting new ideas about teaching and learning emerged from all the headteacher interviews as a very important aspect of their information- and advice-seeking interactions. All six headteachers indicated that they seek or give information and advice about teaching and learning. Headteachers specifically indicated that they were always interested in new ideas about how to teach their lessons better. For example, headteacher Ht6 expressed this:

> *We can all learn new things about how to teach our lesson much better. I always ask other headteachers about new ideas especially around ICT so that I can integrate some of them into my school.* (Ht6_Phase 1)

An informal conversation with EO2 recorded in the field notebook suggests that some CSs create opportunities for headteachers to share good practice via workshop sessions. EO2 explained:

> *An effective headteacher is one that is able to bring all his/her teachers on board to pursue the school's academic and social agenda to the benefit of all the stakeholders in the school setting. And my job is to ensure there are opportunities for headteachers to come together and learn from each other. My focus is on how to improve learning and teaching across all schools including lesson preparation, marking of assignments, assessment of pupil performance and other issues headteachers bring up.* (EO2)

Other types of information and advice exchanged that relate directly to information and advice about teaching involve how to teach complex topics. Three headteachers indicated that they frequently turn to colleagues for this type of

information. For example, one of the less-experienced headteachers described how she had accessed support from peers on how to teach complex topics:

> *One of my priorities as a headteacher is to ensure that my children pass their exams … which means they have to be taught well, so I frequently ask the CS and other experienced teachers about how certain complex topics have been taught in other schools. We also spend a lot of time on revision so the more ideas we have from* [each] *other, the better.* (Ht3_Phase 1)

Helping ineffective teachers improve on their practice

According to the headteachers, one of their biggest challenges was dealing with ineffective teachers. Some headteachers referred to helping NQTs, who they perceived were not fully prepared for their first teaching appointment. Headteacher Ht5 expressed this concern:

> *As you know, the system is that teachers are posted to our schools, so we don't have much control over who we appoint so sometimes you get a teacher who cannot perform. This is difficult because you cannot sack them yourself. I therefore ask other headteachers about how they tackle such issues when I get the opportunity.* (Ht5_Phase 1)

This theme runs through all the interviews as headteachers also expressed their concern about poor attendance by some teachers as well as lateness in returning marked work. The CSs and headteachers mentioned this as one of the main challenges of the job because some teachers posted to their school may not have the subject specialism required. Headteacher Ht4 described this:

> *There are always problems with new teachers when they arrive at our school. Some are not confident and some I would say have not grasped their training properly* [and] *therefore find the job challenging. I still have to work with them*

and support them. I remember raising this issue with other headteachers who also said they faced the same challenges. (Ht4_Phase 1)

All headteachers interviewed held a similar view that many NQTs start teaching with very limited classroom experience, because of the few hours spent in the classroom during their initial teacher training at college, and therefore lack confidence. However, they agreed that support was available at district level and often organised by the district training officer. Unfortunately, the timing and distance from the district office, transportation cost, and other factors meant that some NQTs could not easily access this support. Therefore, headteachers need to work with their peers collectively to find appropriate ways of helping ineffective teachers. But the issues that emerged were not always about poor training or confidence but also about systemic issues around teacher postings. For example, headteachers reported that a qualified teacher in early years could be posted to a school where there is no vacancy for their subject area, so they could end up teaching mathematics, English, etc. All these impacted on headteacher workloads and because the issues were common across schools, they believed in seeking solutions from peers.

Dealing with student discipline

Student discipline was also mentioned by all six headteachers as the type of information and advice they will seek from peers. This is arguably founded in the religious and cultural beliefs that respect and discipline are the foundations of success. Therefore, ensuring that students are well behaved during the school day is important for every headteacher. Headteachers explained that managing morning duties effectively, ensuring morning assembly is well attended, and students demonstrating respect to teachers and elders in their communities all form part of student education. Headteacher Ht3 stated:

> *As a church* [name of church anonymised]*, we take student discipline very seriously. And even though I'm seen as a disciplinarian, I'm always seeking advice on how to improve standards in my school.* (Ht3_Phase 1)

Headteacher Ht2 shared similar sentiments and expressed his view on student discipline and why he sought advice from his peers about this issue:

> *Every teacher and headteacher wants their children to be described as the most disciplined in this city* [name of city anonymised]*, so I take this matter very seriously. And you see, you cannot be taught at a workshop on how to discipline children, so your best bet is to exchange ideas with other headteachers because we all want the same for our children.* (Ht2_Phase 1)

For these headteachers, student discipline was very important culturally, religiously and academically.

Delivering the national curriculum effectively

Ideas about curriculum delivery emerged as a valuable type of technical information and advice sought or given. Collectively, this refers to types of information and advice on understanding how best to structure the school timetable and subjects to ensure staffing resources are effectively maximised. Headteachers spoke about several initiatives being introduced by the Ghanaian government and other development partners and how these impact on the limited time available to cover their syllabus. Headteachers in the JHS only schools mentioned the importance of working closely with headteachers in primary schools and their CSs to ensure they are not covering a lot of work that should have been covered in primary, i.e. remedial activity. For example, headteacher Ht6 explained:

In my school I work very closely with the headteacher in primary phase to ensure all the children are taught well and the whole syllabus is covered. If we don't do this, we have to cover a lot of ground when the children arrive in JHS. In our case, this is easy because we share the same compound. (Ht6_Phase 1)

Headteacher Ht3 bemoaned the lack of support available from the education authority and expressed how some training workshops perceived as being important might not be that necessary:

A significant number of workshops focus on supervision and monitoring skills. This is of particular importance in our system but may not be what headteachers need in my opinion. In addition to these training workshops, we want to know how to structure the timetable and cover the entire syllabus so our children can perform well in their BECE. We have to ensure every child has access to a textbook and when they don't arrive on time, we have to devise plans to make sure the children can share. This is not easy at all. I rely on other headteachers for tactics on how to deal with some of these challenges. (Ht3_Phase 1)

Some headteachers talked about the new school league table and the need to ensure their school achieves very good results; therefore, spending too much time on remedial activity in JHS reduces the amount of time available to cover the whole syllabus.

Affect-laden information and support

Although technical or instrumental information and advice can contribute to an effective career and can overlap with affect-laden information, affective information

and advice in this study is seen specifically as forward-looking rather than dealing with the everyday job. All headteachers explained how they had progressed through the ranks in the GES. Indeed, one headteacher, who was very close to retirement, explained how she had relied on career advice from other headteachers and CSs throughout her teaching career. Headteacher Ht2, for example, asserted that he was ambitious and interested in gaining as much knowledge and experience as possible, so he can transform his schools:

> *The current workshops for headteachers are infrequent and do not meet my current needs in terms of making me the type of leader I want to be. I want to be able to transform the schools that I lead and be able to inspire people to take on school leadership and the best way to do this is to seek counsel from my experienced and successful colleagues. Since my appointment [long pause] I have been able to solicit funds to start the new structures you see over there. This is through my own efforts and I had to tap into my own networks to do this.* (Ht2_Phase 1*)*

In conclusion, the findings from Phase 1 of this empirical study have revealed that, although there are no formal preparatory programmes for headteachers, all participants were confident about their transition into headship. All headteachers mentioned that they were ready to take up their leadership position and pointed to their experience as assistant headteachers as enough preparation. There was no evidence to suggest any variation on headship preparation among the interviewees from the two education circuits. Headteachers indicated that teaching and learning and being able to demonstrate leadership in teaching and learning were the most critical ingredients for headship; therefore, the best way to develop this expertise is through practice. Although personal experiences varied among the demographic

characteristics (i.e. gender, age, experience, etc.) considered for this study, there was no evidence of significant differences between the two education circuits.

In addition to experiential learning and development, this study has shown that headteachers build professional capital by connecting with peers and exchanging information and professional advice. There is evidence to suggest headteachers in both education circuits have developed collaborative learning and information-sharing practices that give opportunities to create and disseminate professional knowledge and social capital, as well as generate decisional capital.

Although all sorts of information and professional advice are generated through their collaborative actions, five types of professional knowledge emerged from the data as most valuable to headteachers: (i) information and advice on how to improve teaching and learning, (ii) information and advice on how to help ineffective teachers improve on their practice, (iii) information and advice on how to improve student discipline, (iv) information and advice on how to deliver the curriculum effectively, and (v) information and advice on career development and progression. These types of professional knowledge are arguably contextual in nature and not easy to codify and present in the Ghana headteacher handbook. Therefore, it is regular interaction and social learning acts such as networking, collaboration, mentoring that could create opportunities for headteachers to learn from each other and find answers to some of these routine challenges.

Summary

This chapter has presented the findings and analysis from the narrative data collected in the Phase 1 preliminary study. Experiences of headteachers and views of education officers in relation to headship capacity development have been presented and analysed. Collegial discussions, informal mentoring, peer support,

and collaboration emerged as some of the ways in which headteachers build professional capital. It is through these social learning and development processes that decisional capital is generated and realised as professional development. On the types of professional knowledge headteachers indicate as most valuable to their practice, five main types emerged which formed the basis for exploring the headteacher network further and to answer the third research sub-question. In the next chapter, a sociometric analysis of the peer network is presented using SNA metrics based on these five types of information and advice.

CHAPTER FIVE: PHASE 2 – SOCIOMETRIC SURVEY

Introduction

This chapter presents findings and analyses in relation to the third research sub-question: *RSQ3: To what extent do informal headteacher interactions allow them to harness this professional knowledge in support of their practice?* It mainly draws on the numeric data generated from the Phase 2 study. The chapter is divided into four main sections based on the three parts of the sociometric survey. It starts by explaining how data were collected in one of the education circuits. It then analyses Part A of the sociometric survey – the demographic profile of the participants. The third section analyses Part B of the sociometric survey and relates to headteacher responses to five sociometric questions. The fourth section analyses Part C of the sociometric survey and relates to headteacher responses to four key statements about how their network interactions have impacted on their professional practice.

Data collection

As explained in chapter three, the network survey was conducted in one education circuit (rather than the two originally intended circuits) over a two-week period in November 2015. There are 17 headteachers in this education circuit and all were involved in the Phase 2 survey as required by whole-network studies (Robins, 2015; Borgatti et al., 2013). As explained in chapter three, the survey questionnaire comprised three parts (Appendix E). Part A elicited biographical information from each of the 17 headteachers. The five types of biographical data are: gender, their highest qualification, number of years as a headteacher, type of school where they work, and their age. These formed the actor attributes investigated in this study and are summarised in Table 5.1.

Table 5.1: Sample of headteachers involved in whole-network sociometric study (n=17)

Headteacher pseudonym	Sex	Highest qualification	Years' experience as headteacher	Type of school	Age (years)
H1F	F	BA	0–5	KG only	41–45
H2F	F	MA	6–10	Primary only	45+
H3F	F	BA	0–5	JHS only	45+
H4M	M	BA	0–5	Primary + JHS	45+
H5M	M	Teacher's Diploma	20+	JHS only	45+
H6M	M	Teacher's Diploma	0–5	Primary + JHS	41–45
H7M	M	BA	0–5	Primary only	45+
H8M	M	Teacher's Diploma	20+	Primary + JHS	45+
H9F	F	BA	0–5	KG only	45+
H10M	M	BA	0–5	Primary + JHS	45+
H11F	F	BA	0–5	Primary + JHS	41–45
H12M	M	BA	0–5	Primary + JHS	45+
H13M	M	BA	0–5	Primary + JHS	41–45
H14M	M	MA	0–5	Primary + JHS	36–40
H15M	M	BA	0–5	Primary + JHS	45+
H16F	F	BA	20+	Primary + JHS	45+
H17M	M	Teacher's Diploma	11–15	Primary only	45+

Part A: Demographic analysis of network participants

Tables 5.2 to 5.6 represent summaries of the demographic data of headteachers involved in the network survey broken down by type of school, gender, age,

headship experience and highest academic qualification. These are also described as headteacher ‘attributes’ in the SNA.

Table 5.2: Headteachers by type of school

Type of school	Number of headteachers	Percentage (%)
KG only	2	12
Primary only	3	17
JHS only	2	12
Primary + JHS	10	59
Total	**17**	**100**

From Table 5.2, it is evident that most (10 of 17) headteachers in the circuit work in schools that have both a primary and JHS provision on the same site and are described as ‘basic’ schools in the Ghanaian context. Such schools are much larger with student populations almost twice that of a primary only provision and therefore have more staff compared to the other two types of school. However, in some cases, the three school phases (i.e. KG, primary and JHS) are co-located on the same physical site but headed by different people. This was so for one classification in this education circuit where there are three different headteachers, with one assigned to each school phase.

In this circuit, there are more male headteachers (11) than females (6). This is not significantly different to the other education circuit involved in the Phase 1 study that comprised 10 male and 7 female headteachers. Table 5.3 is the gender breakdown for the Phase 2 education circuit.

Table 5.3: Headteachers by gender

Gender	Number of headteachers	Percentage (%)
Male	11	65
Female	6	35
Total	**17**	**100**

The six female headteachers are spread across the three school phases (see Table 5.1). The two KG schools in this education circuit have female headteachers. For the primary schools, two have male headteachers and one has a female headteacher. The ten basic schools (primary + JHS) have eight male headteachers and two female ones. For the two JHSs only, each has a male and female headteacher. These data suggest that although the KG schools are led by only female headteachers, the rest of the school phases have a fair representation of female headteachers in this education circuit (i.e. two at KG, one at primary, two at basic (primary + JHS) and one at JHS only).

From Table 5.4, the data indicate that five headteachers are aged between 36 and 45 years. Most of the headteachers (12 of 17) are 46 years or older.

Table 5.4: Headteachers by age

Age range (years)	Number of headteachers	Percentage (%)
36–45	5	29
>45	12	71
Total	**17**	**100**

In a system where appointment to headship significantly depends on teaching experience and long service, it is no surprise that most headteachers are above 45 years. Four of the six female and seven of the 11 male headteachers are 46

years or older. Again, there is no significant variation among male and female headteachers.

Table 5.5 classifies headteachers by years of experience and aims to identify early-, mid- and late-career headteachers. The data suggest most headteachers (12 of 17) have only been in post in the past five years and therefore can be as described as early-career headteachers. One headteacher could be considered a mid-career headteacher whereas the remaining four would be described as late-career headteachers.

Table 5.5: Headteachers by headship experience

Years of experience	Number of headteachers	Percentage (%)
0–5	12	71
6–10	1	6
>10	4	23
Total	**17**	**100**

There is no significant variation between gender and headship experience, but there are more males than females in this education circuit as explained earlier. The headteacher classified as a mid-career headteacher is female whereas those headteachers classified as early- and late-career headteachers comprise a mixture of male and female (see Table 5.1).

Table 5.6 shows all headteachers are qualified teachers and hold an appropriate minimum teaching qualification.

Table 5.6: Headteachers by highest academic qualification

Highest academic qualification	Number of headteachers	Percentage (%)
Teacher's Diploma	4	23
Bachelors	11	65
Masters	2	12
Total	**17**	**100**

Most of the headteachers (11 of 17) hold a bachelor's degree whereas two hold a master's degree. Interestingly, four headteachers still hold the Teacher's Diploma, an old teaching qualification issued to teachers on completion of a teacher training college course.

The overall demographic profile of this education circuit suggests a very mixed group of headteachers in terms of age, gender, headship experience, type of school and academic qualifications. This is important for the analyses that follow in the next sections because it is possible to explore the potential for any of these network attributes to constrain or facilitate the headteacher's capacity to harness social capital embedded in their peer network.

Part B: Sociometric analysis

Evidence of collaboration and levels of interactions

As discussed in chapter two, networks where participants collaborate and share network resources offer greater opportunity to create and use professional knowledge. Therefore, the sociometric survey of one of the education circuits sought to explore evidence of greater collaboration, which headteachers expressed in their interviews in Phase 1 of this empirical study. To do this, five network measures have

been used: number of ties, isolates, average degree, dyad reciprocity and cliquishness. The number of ties represents the number of network connections that exist in each of the five networks under investigation. These ties may or may not be reciprocated but indicate actual connections out of a possible 272 (i.e. n*(n–1)). Isolates in this study signify the number of headteachers who are completely disconnected from the rest of the group for any of the five types of networks. These isolated headteachers do not ask for information and professional advice from their peers and vice versa. Although density is often used to measure cohesion, average degree is considered a better measure of connectedness in this study as explained in chapter three. Average degree is an expression of the average number of ties that each headteacher has within their peer network. This is computed by dividing the total number of ties by the total number of nodes (i.e. headteachers involved in the study).

Reciprocity is used in this study to examine peer-to-peer collaborative activity because it demonstrates network relationship and ties that are mutual. In SNA, dyad and triad reciprocity are often used as measures to evaluate levels of collaboration and mutuality. Because of the size of this network, dyad (two-way) reciprocity was chosen as the measure of mutuality and collaboration. Cliques in social network research refer to a subgroup of the network with all possible ties present and therefore represent both closeness and mutuality. Table 5.7 summarises these five network measures for the five content-related information and professional advice networks.

Table 5.7: Overall network effects – number of ties, isolates, average degree, dyad reciprocity and cliques for the five types of information and professional advice

Networks		**Network measures**				
		Number of ties	**Isolates**	**Average degree**	**Dyad reciprocity**	**Cliques**
Network 1	Improving teaching and learning	60	0	3.53	0.25	15
Network 2	Helping ineffective teachers improve their practice	59	0	3.47	0.16	17
Network 3	Dealing with student discipline	62	0	3.65	0.38	16
Network 4	Delivering the curriculum effectively	52	0	3.06	0.30	17
Network 5	Career development and progression	57	0	3.35	0.27	17

Notes: n=17 with 6 females and 11 males. Total potential ties/connections for each network = n*(n–1) = 272

Connectedness (number of ties, isolates and average degree)

The data indicate that the number of ties for the five networks under investigation range from 52 to 62 (see Table 5.7). The network with the greatest connectivity is ‘information and advice on dealing with student discipline’ (Network 3) with 62 ties present. This greater level of connectivity suggests a higher level of cohesion compared to the other four networks. The network with the least connectivity is ‘information and advice on how to deliver the curriculum effectively’ (Network 4) with 52 total ties. The difference in ‘number of ties’ between the remaining three networks are not significant, therefore, can be argued that the level of cohesion is comparable across those networks.

In each of the five networks, there are no isolates. This demonstrates that headteachers collaborate and share information and professional advice albeit at varying degrees as some are more participative than others. An average degree of 3.41 (range: 3.06–3.65) for all five information and advice networks suggests each headteacher on average has three connections to other headteachers.

What these three network parameters have revealed so far, is a group of headteachers who collaborate and by doing so make possible the flow network resources (e.g. information and professional advice) among participants (Podolny, 2001). The narrative accounts from Phase 1 of this study (e.g. quotes from Ht1_Phase 1, Ht5_Phase 1 and Ht6_Phase 1; pp. 116–118) reinforce the collaborative ethos that allow headteachers to access each other for information and professional advice in support of their professional development.

To visually illustrate the level of connectedness, the NetDraw program has been used to generate network maps, also known as sociograms (see Figures 5.1 to 5.5). In each of the sociograms, the nodes represent headteachers using their pseudonyms. The first two alphanumeric characters in the pseudonym represent the headteacher's assigned code and the last letter F or M (female or male, respectively) represents the gender of the headteacher. So, node H3F indicates headteacher H3, who is female. The headteachers are further classified in the sociogram by their type of school: diamond = KG; triangle = primary; square = primary and JHS (basic school); and circle = JHS only.

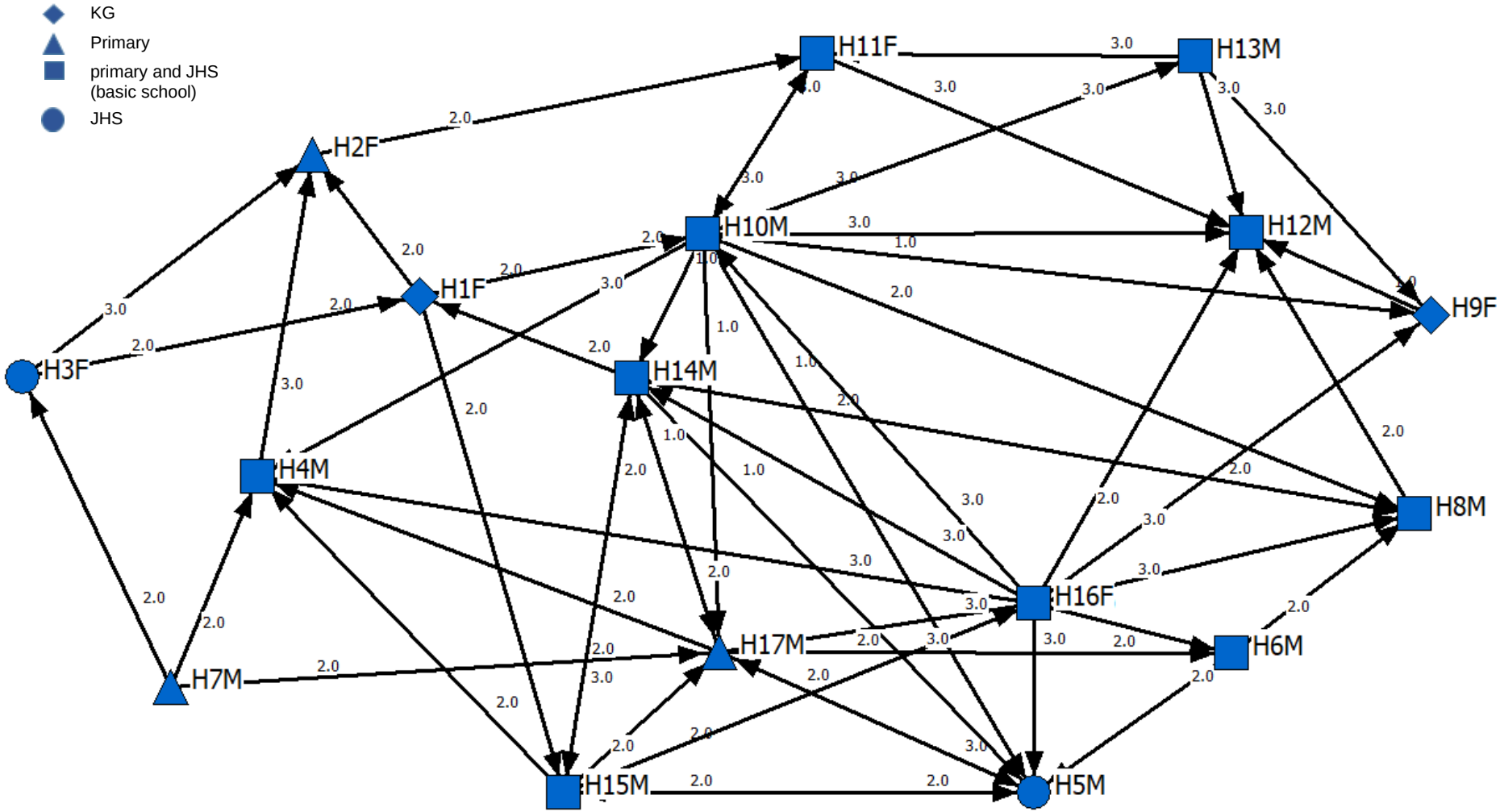

Figure 5.1: Sociogram 1 – information and advice on how to improve teaching and learning (Network 1)

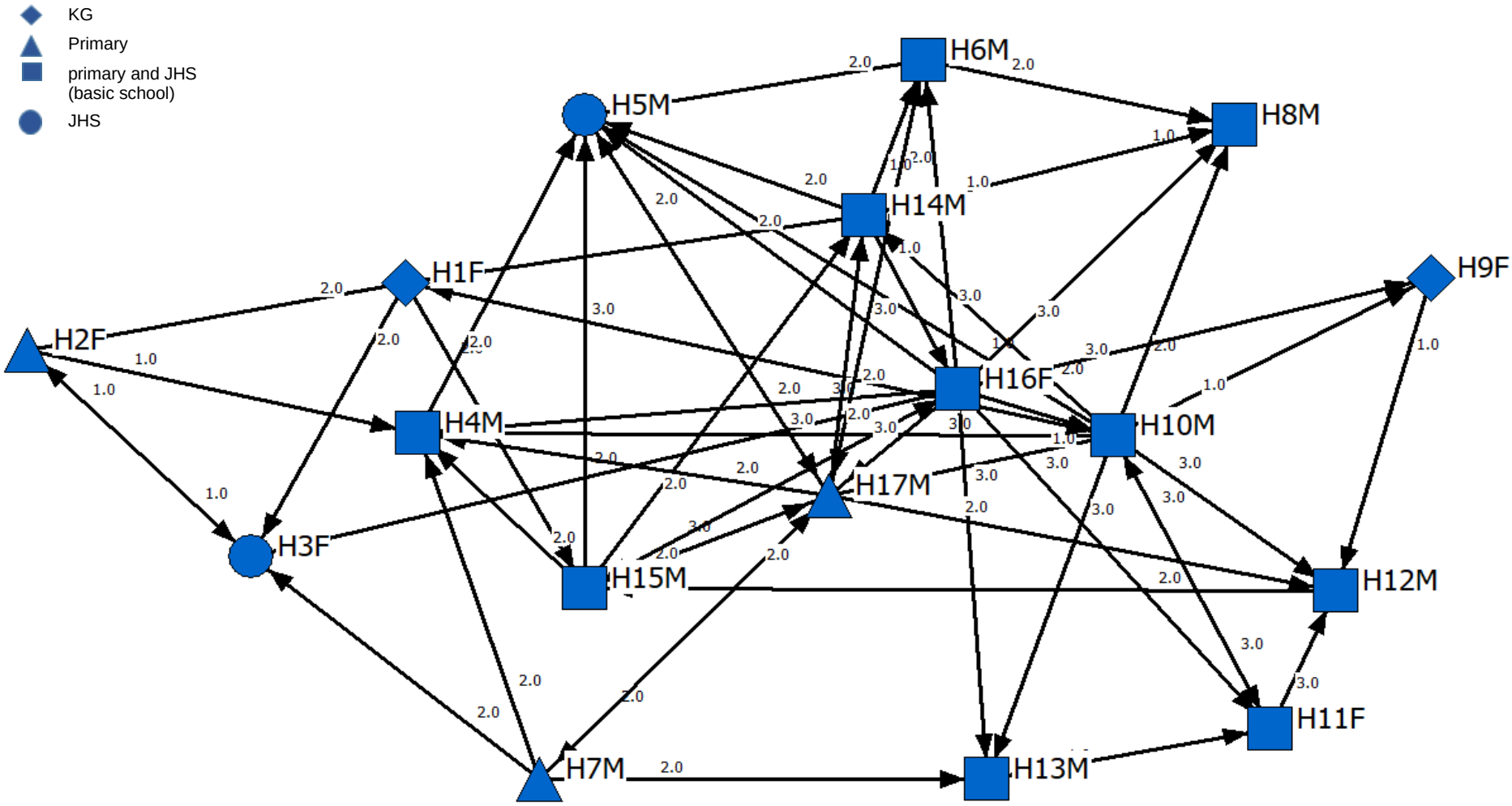

Figure 5.2: Sociogram 2 – information and advice on how to help ineffective teachers improve on their practice (Network 2)

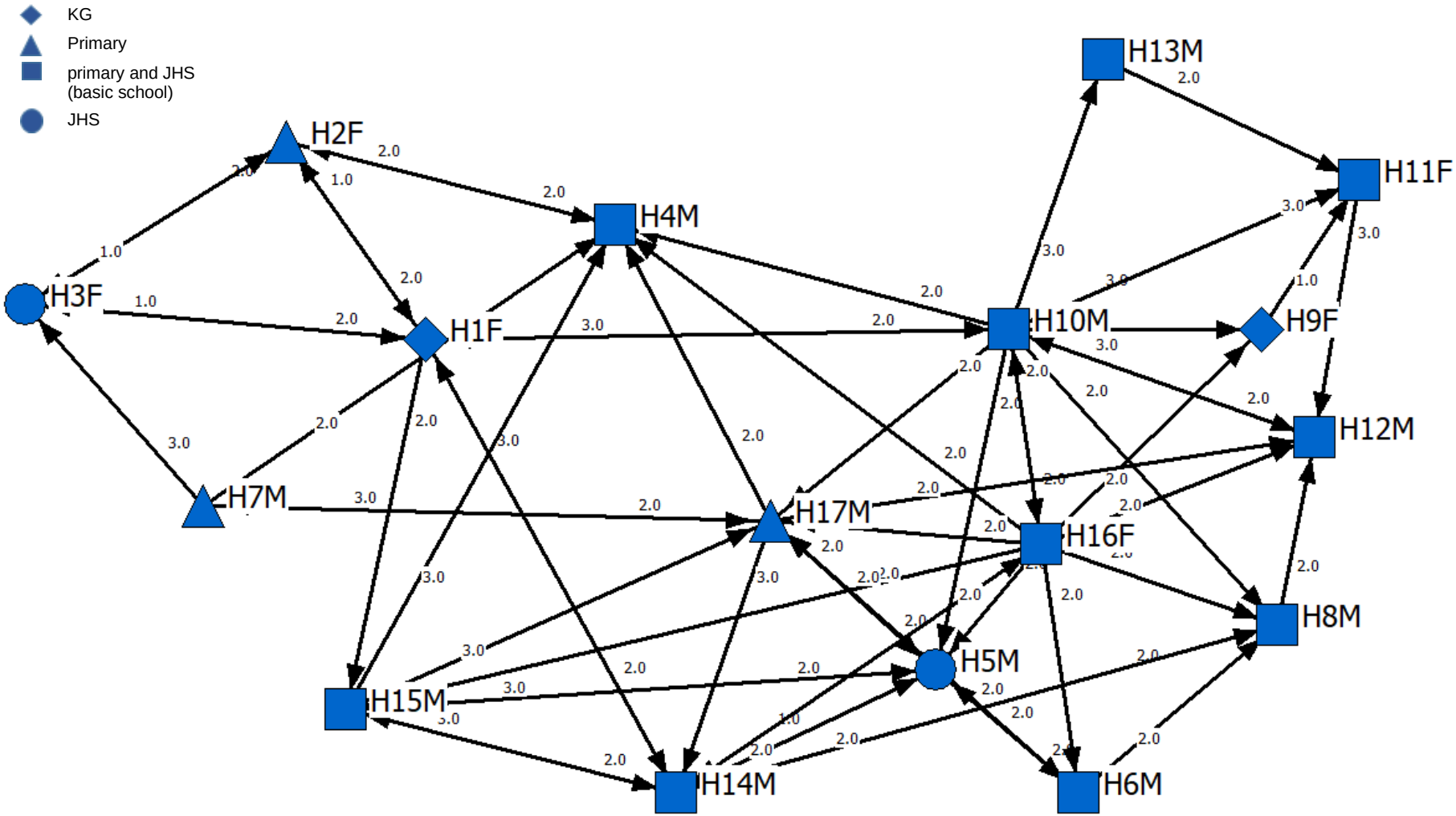

Figure 5.3: Sociogram 3 – information and advice on how to improve student discipline (Network 3)

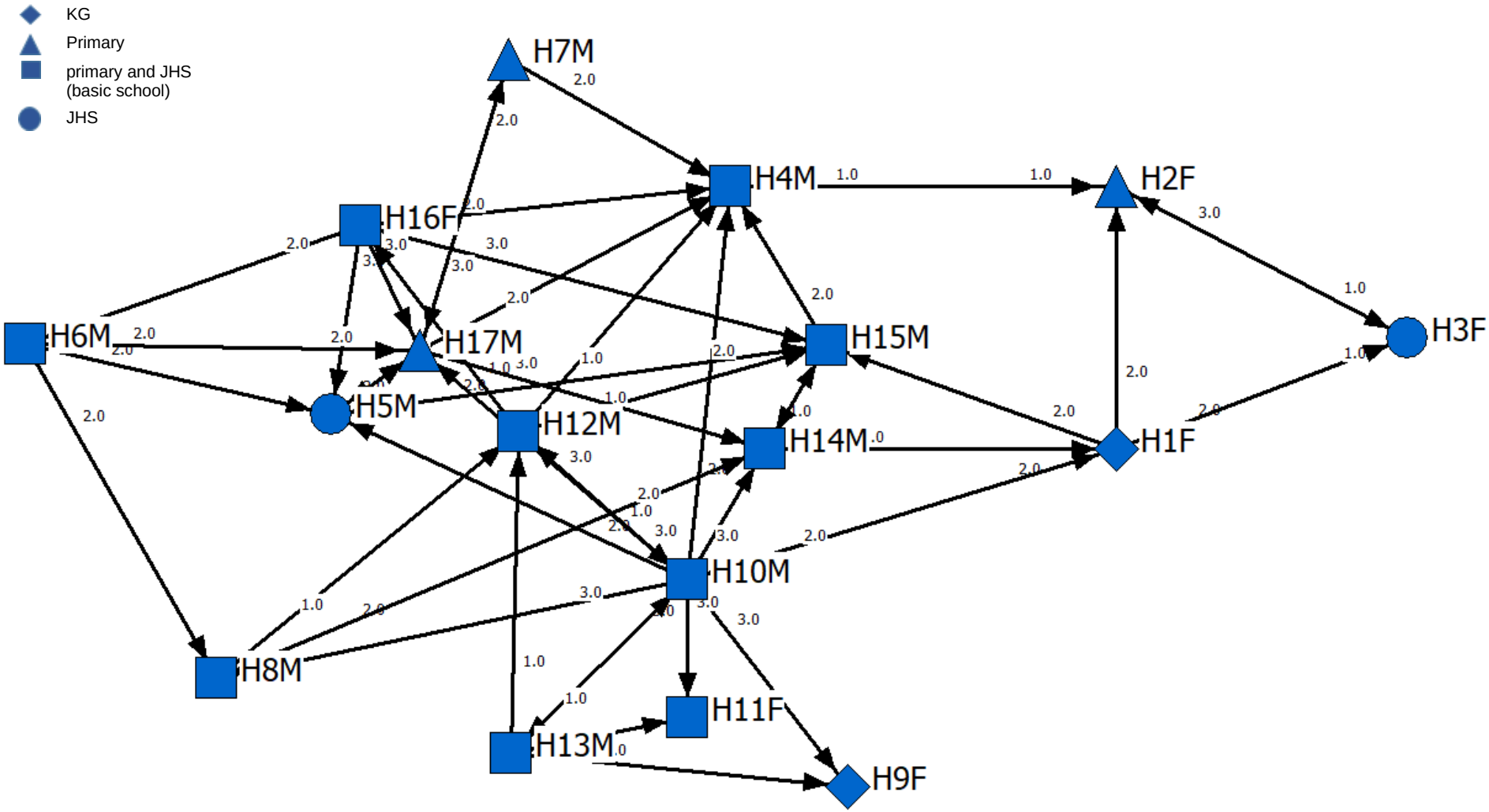

Figure 5.4: Sociogram 4 – information and advice on how to deliver the curriculum effectively (Network 4)

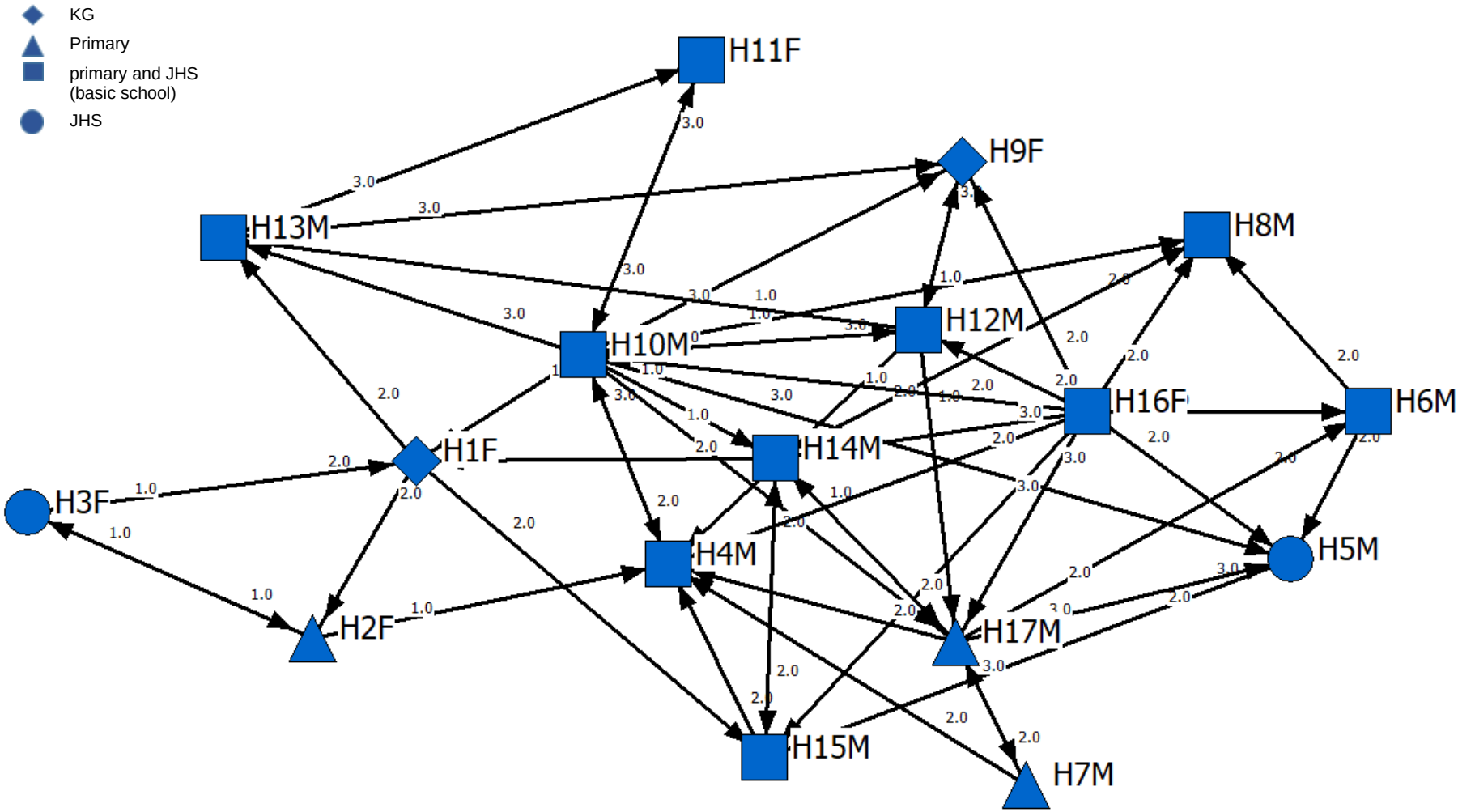

Figure 5.5: Sociogram 5 – information and advice on career development and progression (Network 5)

The ties (network connections) in sociograms 1 to 5 directly show which headteacher goes to whom for any of the five types of information and professional advice surveyed in Phase 2. For example, for information and professional advice on how to improve teaching and learning (Figure 5.1), headteacher H3F indicated in the questionnaire that she goes to headteacher H2F, so the direction of the tie is towards H2F to signify the location of that support i.e. supply side. When the direction of the tie is reversed, it provides another form of analysis; for example, the direction of the support or flow of information. In this first instance, the interest is the location of the support even though the sociogram also illustrates the demand side.

In Network 1, information and advice on how to improve teaching and learning (Figure 5.1), four female headteachers H1F, H2F, H3F and H11F seem to be connected but are a few network connections away from the remaining two female headteachers, H9F and H16F. Conversely, all the male headteachers are directly connected to each other. But the fact that a tie exists among each of the headteachers helps to minimise the impact of redundant connections. Also, in this network, the two female KG headteachers H1F and H9F have not selected each other, implying that for these two headteachers information-seeking behaviours about how to improve teaching and learning is not necessarily based on the type of school. Although headteacher H1F goes to headteachers H2F, H3F, H10M and H15M, headteacher H9F only goes to headteacher H12M for this type of information and advice and she does so infrequently and by the tie strength of 1.

What this also shows is that headteachers are maximising the entire network for information and professional advice and not forming information-seeking relationships with only those who share the same network attribute. What this suggest is that there may be other underlying reasons for headteacher’s choices of

who to go to for this type of information and professional advice other than the network attributes considered in this study.

In Network 2, helping ineffective teachers improve on their practice (Figure 5.2), there are 59 ties present with a level of connectivity similar to Network 1. Once again, none of the headteachers is isolated from the network because a connection exists among all headteachers. Unlike Network 1, all female headteachers are connected and headteacher H16F occupies a strategic position that makes her a bridge between [H1F, H2F, H3F] and [H9F, H11F]. In the same way, headteacher H3F serves as a bridging function between [H1F, H2F] and [H9F, H11F, H16F]. For this type of information and advice, which centres on supporting NQTs to be efficient, it is easy to assume that most experienced headteachers would be the key resource people. That is not necessarily so for the two most experienced headteachers. Although headteacher H5M with over 20 years' experience is popular for this type of information and professional advice, headteacher H16F, who has a similar number of years' experience, is less popular. For the rest of the network attributes such as age, qualifications, experience and type of school, there is no significant variation among groups.

In Network 3, the level of connectivity of this network follows a similar pattern to Networks 1 and 2 as illustrated in sociogram 3 (Figure 5.3). Each headteacher has at least one connection with another headteacher with an average degree of 3.62. The network connections range from 2 to 14 with headteacher H13M having the least and headteacher H10M the most. Like Networks 1 and 2, there are no isolates or pendants as evident from the sociogram 3. Even though it is not a very dense network for a group of this size, as explained earlier, there is a pattern of close association.

In Network 4, as in the previous networks discussed so far, male headteachers seem to be clustered together compared to female headteachers. Also, the KG headteachers (H1F and H9F) don't particularly go to each other for information and advice on curriculum delivery and neither do the JHS only headteachers (H5M and H3F). The sharing of information and advice transcends beyond any of the network attributes with headteachers nominating a range of other headteachers that are not necessarily in the same type of school. However, the close association among H1F, H2F and H3F was evident for this information and advice too. When explored further from the interviews, it emerged that their closeness may be a result of being headteachers of the same faith-based school albeit different phases, i.e. KG, primary and JHS, respectively. They shared the same campus; therefore, proximity was contributing to their close relationship. Also, they shared similar views about student discipline (as discussed in chapter four).

In Network 5, the total number of ties and average degree are not significantly different from the rest of the networks. Like Network 2, you would expect least experienced headteachers to contact most experienced headteachers for information and advice about career progression, but the data suggest the contrary, reinforcing the notion that headteacher choices of whom to go to for information and professional advice is influenced by more than one demographic characteristic or other reasons that have not been explored in this study.

Dyad reciprocity (mutuality of collaboration) and intensity of collaborations

The positive parameter estimates for dyad reciprocity (range: 0.16–0.38) in Table 5.7 suggest some headteachers have indicated that they turn to each other for the same type of information and professional advice, rather than having a unidirectional relationship. However, positive but low dyad reciprocity (<0.6)

represents a network where any two people do not turn to each other for the same type of information and professional advice. For technical information and advice, this may not be surprising because when a person asks other individuals for specific information, those individuals are unlikely to ask that person for the same information; however, they may, in turn, seek this information from another person who is more knowledgeable about it (Finnigan and Daly, 2010).

For all five networks (i.e. types of information and professional advice) most headteachers indicated that they moderately or frequently seek information and professional advice from their peers. Appendices J to N are an extrapolation of the network data to illustrate the intensity of headteacher interactions for Networks 1–5, respectively. The tie labels are obtained from the network survey data for each headteacher using the scale: 0 = do not go to this person for advice; 1 = rarely does this (only when there is any major issue); 2 = moderately does this (once to three times a term); 3 = frequently does this (more than three times a term) (see Appendix G matrices 1b, 2b, 3b, 4b and 5b).

Based on the intensity of some of the network interactions, it can be argued that some headteachers provide regular support to their peers and perhaps have developed informal relationships akin to mentoring. This is evident by the number of network connections in the sociograms (Appendices J to N) that represent ‘moderately does this…’ and ‘frequently does this…’. The tie labels, which represent the number of times (intensity) headteachers indicate they go to another headteacher for information and professional advice, further illustrate headteacher interactions and how often they take place. For example, even though there are other headteachers who go to headteacher H12M frequently for information and

professional advice, headteacher H10M does this more than anyone else, which could be interpreted as someone who requires regular support or mentoring.

Cliquishness

As explained in chapter three, clique membership gives information on different levels of participation but also helps in the analysis of network relations and levels of bonding among individuals. For this study, the minimum clique membership was set to three because normally in SNA couples or single actors will not be considered as cliques. Because cliques are difficult to ascertain visually from the sociograms, UCINET has been used to compute the number of cliques and the membership. (See Appendix O for a summary of clique membership for all five types of information and professional advice considered in this study.)

The data revealed 15 cliques for *Network 1 – information and advice on how to improve teaching and learning*. Each headteacher belongs to at least one clique with headteachers H16F and H10M having the highest membership of nine and eight, respectively. For Network 1, there is one all-female headteacher clique [H1F, H2F, H3F] and one all-male one [H4M, H7M, H17M]. The all-female clique comprises headteachers of the same mission school, albeit heading the different stages (i.e. KG, primary and JHS, respectively). The all-male clique is also associated with the same religious institution although they are headteachers of schools located in different geographical communities. By inference, being headteachers of the same mission school could be influencing their close association and demonstrating a sense of homophily (i.e. a characteristic of social networks where groups of people in a network are bound together by a common attribute). Headteachers H2F and H3F belong to only one clique that also includes

headteacher H1F; therefore, their relationship with headteacher H1F could be very important to them.

Although the clique computation helps to identify potential subgroups, in networks where several subgroups exist, clique co-membership is another measure of close association. In this instrumental network, headteachers H10M and H16F belong to the same five cliques, which could mean that they are close associates as well as the most expansive. Also, headteacher H17M belongs to five cliques with headteacher H16F; therefore, they could be considered close associates too.

For *Network 2 – information and advice on how to help ineffective teachers improve*, the data revealed 17 cliques (i.e. two more than Network 1). It shows that headteachers H16F and H17M belong to the highest number of cliques, nine and eight, respectively. Together with headteacher H5M, these two headteachers are co-members of five different subgroups. As in Network 1, there are also the same all-male [H4M, H7M, H17M] and all-female [H1F, H2F, H3F] cliques. These suggest their close relationship for this information and advice too.

For *Network 3 – information and advice on how to improve student discipline*, there are 16 cliques with nine comprising three members, six comprising four members and one comprising five members. Headteacher H16F belongs to more cliques than any other headteacher (ten in total). As in Networks 1 and 2, each headteacher is attached to at least one of the cliques. But, once again, headteachers H1F, H2F and H3F form a clique further demonstrating their close relationship. Although headteacher H1F is a member of another clique, headteachers H2F and H3F do not belong to any other cliques. The significance here is their reliance on headteacher H1F for not only this type of information and advice but also potentially other support.

Similarly, headteachers H4M, H7M and H17M are also in a discrete all-male clique just as in Networks 1 and 2. A pattern that is emerging so far is a close-knit group of headteachers that go to each other for information without discriminating by gender, age, years of experience or type of school. Even though some headteachers seem to be closer than others, overall, none of them is isolated; there are no pendants (i.e. headteachers whose connections to their peers are dependent on one single connection). These are all features of cohesive groups in SNA.

For *Network 4 – information and advice on how to deliver the curriculum effectively*, there are 17 cliques in total. There are two cliques comprising four members each [H5M, H6M, H16F, H17M] and [H4M, H12M, H15M, H16F] and headteacher H16F belongs to both cliques. The rest of the cliques comprise three members, which is an observable difference from Networks 1–3. In this instrumental network, headteachers H2F, H3F, H6M, H7M, H9F and H11F belong to only one clique each. As in Networks 1–3, headteachers H1F, H2F and H3F form an all-female clique. The actor-by-actor clique membership algorithm suggests that headteacher H10M belongs to ten different cliques. The same three-member all-male clique [H4M, H7M, H17M] exists for Networks 1–4. This all-male clique comprises headteachers of schools associated with a particular religious institution but located in different geographical communities. By inference, this association could be influencing their cliquishness and demonstrating a sense of homophily.

For *Network 5 – information and advice on career development and progression*, there are 17 cliques. There is one clique with five members, six cliques with four members and ten with three members. As in Networks 1–4, each headteacher is attached to at least one clique with headteacher H16F having the highest clique

participation of ten. For the fifth time, there are the same all-female [H1F, H2F, H3F] and all-male [H4M, H7M, H17M] cliques.

Degree centrality, prominence and mobilising social capital

A network measure often used to assess network structures is degree centrality because it helps to examine an individual's position in relation to other members of the network and gives a measure of how close they are to others and their prominence (Freeman, 1979). In the context of this study, two assumptions are made; firstly, headteachers share information and advice freely; this is based on the narrative accounts from headteachers, who all indicated that they share information and advice with peers who contact them. Secondly, the most-selected headteachers for any type of information and professional advice are the key resource people ('information-rich' headteachers). As explained in chapter three, this may be interpreted as popularity for any given type of information and type of professional advice; therefore, any headteacher with a direct tie or connection is in a better position to access these information rich headteacher(s). Proximity to information-rich headteachers is desirable as it makes it easy to mobilise professional capital.

This interpretation of the degree centrality measure has been applied to this study because a headteacher's location in the network of connections arguably can impact on their access to their peers in the network. Therefore, stronger connections are more beneficial than weaker connections as they offer opportunities for greater access to network resources from the resulting higher number of channels and connections. Because the network relations in this study are directional, i.e. each headteacher is either asking for information and advice (demand side) or being asked for information and advice (supply side), they establish 'knowledge demands and supply of knowledge' (Geeraerts et al., 2018, p. 266).

This distinction is synonymous with Freeman's (1979) 'indegree' and 'outdegree' network measures where each headteacher's indegree centrality is computed by counting the number of their peers who have indicated they ask them for information and advice. Indegree, therefore, represents headteacher supply of information and advice to their peers and can emphasise their popularity. Higher indegree is therefore associated with higher influence and power (Borgatti et al., 2013). Conversely, outdegree is computed by counting the number of peers each headteacher has indicated they go to for information and advice. Higher outdegree corresponds to higher level of demand for information and advice. However, the network structure can both constrain and facilitate the flow of information and advice among the headteachers. Thus, focusing on the number of network connections and headteacher locations within the network offer a good opportunity to assess their capacity to mobilise task-specific professional knowledge.

Table 5.8 summarises indegree and outdegree connections for all headteachers with asterisks indicating the headteacher(s) most sought after for a particular type of information and professional advice. To illustrate the degree centrality relations graphically, the NetDraw program has been used to generate sociograms (see Appendix P). Unlike Figures 5.1 to 5.5 earlier, all nodes have the same shape (circle) to ensure the differences in size are easily visible because node size increases with the number of indegree ties.

Table 5.8: Summary of indegree and outdegree connections for all headteachers

	Improving teaching and learning (Network 1)		Helping ineffective teachers improve their practice (Network 2)		Dealing with student discipline (Network 3)		Delivering the curriculum effectively (Network 4)		Career development and progression (Network 5)	
Headteacher	Indeg	Outdeg	Indeg	Outdeg	Indeg	Outdeg	Indeg	Outdeg	Indeg	Outdeg
H17M**	7	5	6	6	6	6	5	5	7	5
H4M**	5	1	6	1	6	1	7	1	7	1
H5M**	6	2	7	1	6	3	5	2	4	2
H12M	6	0	4	1	5	1	3	4	3	5
H14M	5	5	4	5	5	5	4	3	5	4
H8M	4	1	4	1	4	2	3	2	4	1
H10M	4	10	3	10	4	10	3	10	4	10
H15M	4	5	3	5	4	4	6	4	4	2
H1F	3	4	2	4	4	5	3	4	3	4
H2F	3	1	2	2	3	3	3	2	2	2
H9F	3	1	2	1	2	1	2	0	4	1
H11F	3	2	3	2	3	2	2	0	2	1
H3F	2	2	4	1	3	2	2	2	2	2
H6M	2	3	4	3	3	3	2	3	2	3
H7M*	1	3	1	4	1	3	1	2	1	2
H13M	1	4	3	1	1	1	1	4	3	2
H16F*	1	10	2	11	2	10	1	5	0	10

** headteachers with highest indegree centrality

* headteachers with lowest indegree centrality

For Network 1, the data in Table 5. 8 suggests headteacher H17M who is a primary school headteacher is the most popular for this type of information and professional advice with 7 indegree ties. Headteachers H7M, H13M and H16F are the least popular for information and professional advice on how to improve teaching and learning. This is illustrated in the node sizes of H17M relative to the other headteachers in sociogram P1 in Appendix P. If degree centrality is interpreted as a form of informal power and influence over those that seek information and professional advice from a headteacher (Borgatti et al., 2013), then arguably H17M is the most influential for information and advice on how to improve teaching and learning. This influence could directly impact headteacher H7M (primary only), H6M, H10M, H14M, H15M and H16F (primary + JHS schools) and H5M (JHS only) because they rely on him for information and professional advice. Interestingly, none of the KG headteachers go directly to H17M for information and professional advice about how to improve teaching and learning.

Notwithstanding H17Ms potential influence, headteacher H10M is considered the most active and participatory person for this information and advice with a total of 14 network ties. He and headteacher H16F show the greatest capacity to mobilise information and advice about how to improve teaching and learning because they have the highest outdegree connections (10). Conversely, headteacher H12M indicated that he does not go to anyone for information and advice about how to improve teaching and learning. However, six other headteachers indicated that they seek information and advice about teaching and learning from him.

For Network 2, headteacher H5M with 7 indegree ties can be considered the most influential for information and professional advice on how to help ineffective teachers improve on their practice. This influence can be directly exerted on headteachers

H4M, H5M, H6M, H10M, H15M, H16F and H17M who seek information and professional advice from him. As in Network 1, headteacher H10M has the highest number of connections (13 ties), but this time he shares this high level of connectivity with headteacher H16F who also has 13 ties. However, for this type of information and advice, headteacher H16F has more outdegree ties (11) which offers her greater opportunity to mobilise professional knowledge. Headteacher H9F has the lowest number of connections (3 ties) demonstrating that she participates the least in the exchange of information and advice about how to help ineffective teachers improve on their practice. Unlike Network 1, each headteacher seeks information and advice about how to deal with ineffective teachers from at least one other headteacher. Here, headteacher H12M goes to another headteacher (H15M) for this type of information and advice. Headteacher H5M with seven indegree ties is deemed the key resource person; headteachers H17M and H4M are a close second with six indegree ties each. Consequently, headteachers that are closest to these three headteachers (via network ties) have a greater access to their professional advice.

For Network 3, headteachers H17M, H5M and H4M with indegree ties of 6 each are the most central and by inference the most popular for information and professional advice on how to improve student discipline (Table 5.9). For the second time, headteachers H17M and H5M appear in the most influential category. This is visually represented in sociogram P3 (see Appendix P) where headteachers H17M, H5M and H4M are the bigger nodes in relation to the other network nodes. Notably, as in Networks 1 and 2, headteacher H10M is considered the most active and participatory person for this information and professional advice with a total of 14 network ties. With an outdegree centrality of 10 ties each, headteachers H10M and H16F have the greatest capacity to mobilise this type of information and professional

advice more than anyone else. They could also be considered to have a greater capacity to spread information and professional advice by virtue of their numerous connections.

In this study, information and advice about how to deliver the national curriculum effectively (Network 4) included ways in which teachers and headteachers interpret the national curriculum and how they use their limited resources to cover the prescribed content. The data (Table.5.9) suggests Headteacher H4M is deemed the most resourceful and potentially the most influential. For this type of information and professional advice, headteachers H5M and H17M are not the most sought after. This is illustrated in the node size of headteacher H4M in sociogram P4 (Appendix P). However, as in Networks 1–3, headteacher H10M is the most active with a total of 13 network ties. With outdegree centrality of 10 ties, he remains the headteacher with the greatest capacity to mobilise information and professional advice.

For information and advice on career development and progression (Network 5), headteachers H4M and H17M appear to be the most resourceful by their peers and have been nominated seven times each. Interestingly, none of the headteachers has nominated headteacher H16F as a resource person for this type of information and advice. Even though reasons for selection or non-selection have not been explore in this study, the absence of ties, give an indication of potential isolation.

Effect of headteacher demographic characteristics on the likelihood of seeking information and professional advice from peers

In information- and advice-seeking professional networks, one can assume that a person does not seek information and advice randomly. Demographic characteristics, such as age, experience and gender, are known to influence choices

and information-seeking/giving behaviours (Geeraerts et al., 2018; Meredith et al., 2017). For such a small and close-knit professional network, it was necessary to analyse overall effects of the demographic characteristics of the headteachers on decisions about who to go to for information and advice. Multiple regression QAP (MRQAP) in UCINET was used to compute the effect of headteacher demographic variables (i.e. age, gender, type of school, experience and highest academic qualification) on the likelihood of forming information and professional advice interactions. In MRQAP, a p value of <0.05 typically supports the assertion that the two matrices being analysed are indeed related. Table 5.9 is a summary of MRQAP results with the figures in brackets showing the level of significance.

Table 5.9: Effect of headteacher demographic variables on the likelihood of forming information and advice interactions

Headteacher democratic characteristics	Information- and advice-seeking networks				
	Improving teaching and learning (Network 1) SC (SE)	Helping ineffective teachers improve their practice (Network 2) SC (SE)	Dealing with student discipline (Network 3) SC (SE)	Delivering the curriculum effectively (Network 4) SC (SE)	Career development and progression (Network 5) SC (SE)
Age	–0.027 (0.406)	0.036 (0.333)	0.024 (0.422)	0.018 (0.458)	0.039 (0.343)
Gender	0.109 (0.076)	0.118* (0.040)	0.107 (0.098)	0.173* (0.010)	0.120 (0.057)
Type of school	0.109 (0.090)	0.098 (0.117)	0.076 (0.205)	0.114 (0.078)	0.113 (0.091)
Experience	–0.049 (0.300)	–0.076 (0.180)	–0.102 (0.127)	–0.010 (0.492)	–0.003 (0.529)
Qualification	0.083 (0.152)	0.091 (0.128)	0.048 (0.296)	0.081 (0.178)	0.109 (0.091)

Notes: n = 17; SC - standardised coefficient; SE – standard error; * SC is significant

In Table 5.9, age, gender, type of school, experience and qualification are treated as independent variables with the aim of examining whether information and advice seeking behaviours (Networks 1–5) are influenced by similarity in age, gender, type of school, experience or qualification. The data indicate a positive and significant relationship between headteacher gender and their likelihood of seeking information and professional advice about how to help ineffective teachers improve their practice (p = (0.04)) as well as how to deliver the national curriculum effectively (p = 0.01)). It can be extrapolated that female headteachers are likely to turn to female headteachers (and likewise male to male headteachers) for these two types of information and professional advice. Although the observed correlation will be considered weak (0.12 and 0.17 respectively), it means there is a relationship between headteacher gender and their behaviour in relation to seeking information and advice about helping ineffective teachers and effective curriculum delivery (0.173).

Unlike the teacher networks reported in the studies by Geeraerts et al. (2018) and Meredith et al. (2017), age does not play a significant role in headteacher choices of whom to go to for information and professional advice. This can be seen visually in the sociograms in Figures 5.1 to 5.5. There is no significant relationship between the type of school (KG, primary, basic or JHS) where a headteacher works and who they will go to for information and advice on the five domains for professional knowledge considered in this study. This is particularly interesting because you would expect headteachers in similar types of school to rely on each other for the types of information and advice associated with the first four networks. However, in this education circuit, that is not so and therefore worth exploring further. Also, in this education circuit, there is no significant relationship between headship experience and academic qualifications, and headteacher information-seeking

behaviours. Therefore, this study has revealed that in this education circuit, broadly, the impact of headteacher demographic characteristics on their likelihood to seek information and advice is very low.

Part C: Professional agency and decision-making

To evaluate the extent to which the professional knowledge harnessed from the headteacher community has contributed to practice and decisional capital, headteachers were asked about the extent to which the information and advice they receive from their peers impacted their practice. This helped to explore how information and advice gained from the network enables headteachers to transform their practice. Again, there is no cause and effect but, rather, headteacher perceptions are explored through the four statements:

1. My discussions with headteachers in my network have helped me improve the quality of teaching and learning in my school.
2. My discussions with headteachers in my network have helped me gain ideas on how to develop/mentor other teachers.
3. My discussions with headteachers in my network have helped me improve my day-to-day activities in the school such as completing statutory forms.
4. My discussions with headteachers in my network have helped me gain new ideas and insights about school leadership.

Using a five-scale rating system ranging from strongly agree to strongly disagree, all 17 headteachers were asked to rate their views on the four statements. The first statement relates to improving teaching and learning from the Phase 1 study. The second statement relates to helping others improve on their practice and was an opportunity to ascertain the extent to which the professional knowledge harnessed from the headteacher community helped them support others particularly NQTs.

The third statement relates to school management and focuses particularly on dealing with the day-to-day job. The fourth is a general statement to ascertain the extent to which their discussions contribute to the development of their school leadership capacity. Headteacher responses are represented in Tables 5.10 to 5.13 by frequency and percentage.

On how discussions helped them improve the quality of teaching and learning in their school (see Table 5.10), 12 headteachers strongly agreed whereas 5 slightly agreed; therefore, all 17 headteachers agreed that their discussions with peers were impacting their practice.

Table 5.10: My discussions with headteachers in my network have helped me improve the quality of teaching and learning in my school

Response rating	**Frequency**	**Percentage**
Strongly agree	12	71
Slightly agree	5	29
Neither agree nor disagree	0	0
Slightly disagree	0	0
Strongly disagree	0	0
Total	**17**	**100**

The data suggest that all headteachers in this education circuit agree (71% strongly agree and 29% slightly agree) that their network relations have helped them improve the quality of teaching and learning in their school. These high ratings from headteachers further illustrates how their professional relations have helped them mobilise professional knowledge to support their practice and confirms the significance of professionalism and practitioner interaction in the development of professional capital in educational settings (Fullan, 2012). Although, this study did not seek to observe what these improvements are, the headteacher self-reports

provide some indication of their belief and confidence in the agency and support their professional relations generate.

A similar response was received for perceptions about whether discussions helped headteachers gain ideas about developing and mentoring others (see Table 5.11).

Table 5.11: My discussions with headteachers in my network have helped me gain ideas on how to develop/mentor other teachers

Response rating	**Frequency**	**Percentage**
Strongly agree	12	71
Slightly agree	5	29
Neither agree nor disagree	0	0
Slightly disagree	0	0
Strongly disagree	0	0
Total	**17**	**100**

71% strongly agree and 29% slightly agree that network relations helped them mobilise ideas on how to develop and mentor other teachers. Participants of this study called for the enhancement of group learning opportunities through frequent cluster-based meetings. These were expressed in the interview extracts in Phase 1 on collegial discussions and collaboration (see pages 116–118). This is important for headteachers and school development much generally, because as suggested by some interviewees, the low level of preparedness of NQTs means, headteachers always have to find creative and innovative ways to support and mentor them.

For dealing with day-to-day administrative tasks (such as completing statutory forms), 88% strongly or slightly agreed that discussions with their peers were helpful whereas 12% neither agreed nor disagreed (Table 5.12). This was not surprising because it is in line with earlier views from the interviews in Phase 1, which

suggested that some headteachers relied on their circuit supervisor for such administrative support more than their peers.

Table 5.12: My discussions with headteachers in my network have helped me improve my day-to-day activities in the school such as completing statutory forms

Response rating	Frequency	Percentage
Strongly agree	13	76
Slightly agree	2	12
Neither agree nor disagree	2	12
Slightly disagree	0	0
Strongly disagree	0	0
Total	**17**	**100**

The responses to the general question about how peer discussions have helped headteachers gain new ideas and insights about school leadership also show a positive response overall (Table 5.13). One headteacher strongly disagreed to this statement. The remaining sixteen headteachers either strongly agreed or slightly agreed, thus demonstrating the importance of networking to the development of new ideas and insights.

Table 5.13: My discussions with headteachers in my network have helped me gain new ideas and insights about school leadership

Response rating	Frequency	Percentage
Strongly agree	13	76
Slightly agree	3	18
Neither agree nor disagree	0	0
Slightly disagree	0	0
Strongly disagree	1	6
Total	**17**	**100**

In conclusion, analyses of the sociometric survey reinforces the presence of a professional learning community; one that creates opportunities for the exchange of

information and professional advice. The results show that headteachers are making the effort to share information and professional advice; hence, they are investing in their professional relations within the education circuit. Overall, the study revealed that there is very limited variation between the number of connections across all five information and professional advice networks. However, for each of the networks, three headteachers are most popular and by inference deemed as information-rich by peers. The professional knowledge of these headteachers is vital because they occupy central positions in the network, which makes them brokers of information and professional advice.

Although homophily is a characteristic of networks and has been widely researched, not much has been written about how church affiliations create homophilic associations in knowledge-based networks. Examining the subgroup patterns for all five networks reveals several cliques and possible homophilic relationships. For example, all five networks had an all-female tripartite clique [H1F, H2F, H3F] and an all-male one [H4M, H7M, H17M], both demonstrating their close relationship. Further exploration revealed that these two groups of headteachers share a characteristic pointing to homophilic interactions. In one clique, the headteachers are heads of Catholic schools and in the other they are heads of schools associated with the Seventh-day Adventist (SDA) church. These relationships may be as a result of preference or availability of headteachers. Nonetheless, in the Ghanaian context, such tendencies may not be surprising due to the long-standing association of some schools with religious institutions that have set them up before the government took over. These findings are consistent with many social network studies where a range of network characteristics are known to influence homophilic interactions.

Finally, evidence from headteacher responses to the questions on the impact of networking on their professional development emphasises why they value their network and seem to be supportive of each other. For all four questions, most headteachers either strongly agreed or slightly agreed that their network relations have contributed positively to their headship activities and by inference their professional development. This also confirms that networking and the social capital that it creates helps headteachers mobilise support and solutions for their daily challenges.

Summary

This chapter has presented findings and analyses of the sociometric survey in the Phase 2 education circuit based on five types of information and professional advice exchanged among headteachers. Evidence of collaboration and frequent interactions between headteachers have been presented using network parameters such as degree centrality, average degree and cliquishness. The MRQAP routine in UCINET has been deployed to explain how headteacher information and professional advice seeking behaviours may be influenced by demographic characteristics considered in this study. In the next chapter, the main findings from this empirical study are discussed.

CHAPTER SIX: DISCUSSION OF MAIN FINDINGS

Introduction

This chapter is a synthesis and discussion of the main findings presented in chapters four and five, in relation to the literature reviewed in chapter two. The aim of this study was to explore how headteachers in the Sunyani district of Ghana build professional capital and harness professional knowledge in their peer network to support their practice. Therefore, this chapter is organised around the main themes that relate to the conceptual framework of this thesis; (i) headteacher professional development and the value of headteacher professional knowledge, (ii) headteacher network as a learning community that generates professional capital and (iii) the role on networking in helping headteachers access and utilise the professional capital embedded in their network.

Headteacher professional development and the value of headteacher professional knowledge

Nature of headteacher professional development

Although formal certification and licensing are integral parts of initial professional development programmes in some countries, especially the global north (Hallinger and Lu, 2013), this study has shown the contrary. It reveals that there are currently no formal licensing requirements or prerequisite qualifications for headship appointment. The headteachers involved in this study have academic qualifications that range from College Diplomas to Masters degrees. The narrative accounts from interviews and field notes indicated no formal initial professional development programme for headteachers exists in the Sunyani district. The professional development and training records for 2012/13 showed that, although there are some formally organised workshops available to newly appointed headteachers, the

education office does not have a dedicated initial professional development programme for headteachers.

The evidence from the narrative accounts indicate that headteacher professional learning and development is predominantly informal, with reliance on a range of learning and development opportunities outside those available through ad-hoc formal training and workshops organised by the education office. This is consistent with views about the unstructured nature of headship preparation in Ghana (Donkor, 2015; Zame et al., 2008; Bush and Oduro, 2006). However, what this study shows is headteachers confidence in their ability to lead their schools without requiring formal certification or training. Headteachers and education officers involved in this study indicate teaching experience and long service provide adequate preparation for headship. For example, three headteachers from the initial exploratory study emphasised how they learnt from the headteacher in their school while they were assistant headteachers. In addition, another headteacher explained that whilst in an acting headship role, he drew on a much wider network for professional support to develop his practice. This type of informal and social learning puts more emphasis on connectivist and experiential learning among headteachers rather than on assuming the aspiring headteacher needs formal preparation. This informal and transitional approach promotes headteacher agency, similar to what Heck (2003) describes as organisational socialisation, because the learning and development is significantly situated in their practice or organisational setting.

Also, the narrative accounts from the Phase 1 study reinforce the high value headteachers place on their experience as education professionals and why it is important for them to determine the professional knowledge necessary for their professional development. Knowles et al. (1984) exemplify this when they argue that

adult learning is self-selective and therefore, at best, headteachers should have the opportunity to select according to their needs and interest. Although propositional knowledge often associated with formal courses and certification is not dismissed, the Phase 1 headteachers do not indicate that the absence of formal headship preparatory programmes in this district has a detrimental effect in developing their professional capacity as suggested by Zame et al. (2008) and Donkor (2015). In fact, all headteachers involved in this study indicate their teaching experience, and in some cases their roles as assistant headteachers, has better prepared them for their professional roles. The EOs involved in the study agreed with the headteachers that teaching experience and its leadership were the most critical ingredients for headship; therefore, the best way to develop this expertise is through practice.

On CPD, the study revealed that headteachers are receiving very limited formal CPD on leadership with most activities dominated by centrally run workshops that focus on national policy directives. The training records available for the 2012/13 academic year suggest some centrally run workshops targeted at headteachers; however, the interviewed headteachers perceived these workshops as unsatisfactory. Participants described the main constraint as the availability of financial resources to support CPD and reported the over-reliance on external donors (e.g. DFID, JICA and USAID) for funds to support such structured programmes. The data strongly suggest headteacher CPD is mostly informal through peer collaborations. Although some formal development programmes are available through SBI and CBI workshops, headteacher development is mainly enhanced through their own informal activities. For all headteachers, learning from peers through regular contact, albeit informally, was the main way to access the information, advice and knowledge required to navigate their daily challenges as headteachers. This is consistent with Eraut (2011), who argues that professionals

learn and develop their practice by tackling the challenges of the day-to-day job and working through things with colleagues.

In light of the above discussion, the study reveals that headteacher professional development is under resourced by central government. However, the study concludes that through collaboration and network interaction, headteachers are able to support each other and connect to peers to mobilise information and professional advice pertinent to their everyday job. The lack of a structured headteacher CPD programme has meant that headteachers are reliant on their peers for information and professional advice in order to advance their practice. This required generating evidence about the types of professional knowledge that headteachers most valued in relation to their professional practice. Such evidence and understanding are invaluable when explored from the practitioner perspective because they provide insights into how policymakers can support headteacher professional development.

The evidence suggests that most headteachers indicate their practice has improved through collaboration with other headteachers and education officers, which highlights the importance of the informal exchanges of information and professional advice among this headteacher peer group. Therefore, for headteachers in Ghana, creating opportunities for regular peer-to-peer interaction and networking has great potential to provide them with the much-needed support in a climate where resources to support formal professional development programmes are scarce.

The value of headteacher professional knowledge

In Hargreaves and Fullan's (2012) professional capital concept, the practitioner's professional knowledge is important for creating and using social and decisional capital. As discussed in chapter two, this knowledge can be technical and explicit

as well as tacit in nature and therefore not necessarily available in codified form so it can be made available through published literature such as the *Headteachers' Handbook* (GES, 2010) in Ghana. Whilst the *Headteacher Handbook* may be regarded as a useful resource comprising codified knowledge on administrative tasks and information about government policy, the evidence suggests the content does not go far enough to provide the information and professional advice headteachers emphasise are relevant for the day-to-day job.

The study finds evidence that network interactions creates opportunities for tacit professional knowledge which is often contextual and relates to solutions to tasks and challenges encountered on a day-to-day basis at the workplace, to be exchanged during social interactions (Bouzdine and Bourakova-Lorgnier, 2004; Eraut, 2000). Although during such social interactions, there are opportunities for a variety of information and knowledge to be exchanged, a significant contribution from this study can be found in the addition of 'content' to the headteacher knowledge exchange interactions. Five strands of essential content-related 'information and professional advice', described by headteachers as valuable professional knowledge, emerged from Phase 1 of this study: (i) how to improve teaching and learning, (ii) how to help ineffective teachers improve on their practice, (iii) how to improve student discipline, (iv) how to deliver the curriculum effectively, and (v) how to develop and progress their career.

The five types of information and professional advice are not included in the GES *Headteachers' Handbook* (GES, 2010). Although this study does not suggest these are the only types of information and advice exchanged in the headteacher network, they specify the particular domains of knowledge that headteachers indicate as valuable for their practice. The first four types of information and advice relate to

‘technical’ knowledge, those that are concerned with the primary task of running the school (Hales, 2001; Lin, 1999). The fifth type of information and professional advice relates to what Lin (1999) describes as affect-laden and is very personal in nature.

As discussed in Chapter Two, previous studies about headship networking and interactions have focused on who goes to who for support and how leaders generally collaborate with limited attention to the content associated with network interactions (see Leithwood, 2018; Penuel et al., 2010; Finnigan and Daly, 2010). However, the headteacher interactions in this study purposefully focused on ‘asking information and professional advice’ in relation to five specific types of information and professional advice headteachers deemed most valuable to their professional practice. The study finds limited evidence to suggest significant variation across the five networks investigated. This is contrary to findings from studies involving teachers where content matter had greater influence on teacher decisions on who to go to for information and advice (Geeraerts et al., 2018; Cross et al., 2001). This is significant because, although it is common for teachers to approach their peers based on the types of professional knowledge and advice, the evidence suggests that headteachers in this study may exhibit different behaviours.

Headteacher network as a learning community

It is recognised that professional learning is no longer an individual affair. Therefore, collegiality and collaborations are increasingly becoming common as schools strive for organisational cultures that promote collective learning and collaboration (Day, 2000). The study finds evidence of a collaborative culture that facilitates social learning. Throughout the interviews in Phase 1, headteachers highlighted the significance of working and learning together because they face similar challenges in their jobs. This is in recognition that they must work together to create new

knowledge and share new insights for purposes of dealing with the everyday job as well as their professional growth. This resonates with Stoll et al. (2006) who argue that social learning among practitioners enhance their motivation and creates an informal support structure for capacity building.

Further evidence of the headteacher network as a learning community was expressed through the interviews and informal conversations. For example, in Phase 1, headteachers explained that the challenges they face in running their schools are similar; therefore, coming together to brainstorm for solutions was an invaluable approach to building their leadership capacity. Indeed, this is exemplified in the sociometric results from Phase 2 where headteachers have a connection to at least one other headteacher for all five networks investigated, implying no isolation in terms of network association. Even though the number of connections vary from headteacher to headteacher, the sense of community and access to other headteachers allows opportunities for peer and collaborative problem-solving (Penuel et al., 2010). Learning and development approaches that draw on collective knowledge and expertise embedded in social relations and structures are known to have an impact on the learning and practices of participants (Sofo and Abonyi, 2018; Chapman et al., 2016; Kiggundu and Moorosi, 2012; Bush, 2008). This study has revealed that headteachers are making the effort to share information and advice, hence investing in their professional relations within the district. Although some headteachers seem to invest more than others based on their number of outdegree and indegree ties, the presence of ties among all members demonstrates that each member is investing time and effort into the network.

Evidence from field notes and interviews further suggest a good sense of community, which is exemplified in the number of cliques present in the peer

network in Phase 2. The ties and cliquishness among these headteachers, demonstrate opportunities for the flow of information and advice from one person to the other, a connectionist perspective shared by Lin (2001). For such a relatively small network (17 headteachers) the high number of cliques (at least 15) for each type of information and professional advice demonstrate close associations among smaller groups which creates opportunities for deeper collaboration and sharing of tacit knowledge (Bouzdine and Bourakova-Lorgnier, 2004). This is very important particularly for early-career headteachers because the collaborations and potential friendships that develop through network connections can help improve working relationships and confidence in decision-making (Nolan and Molla, 2018). In networks that involve the sharing of information and professional advice, network isolation is considered undesirable because it deprives those that are isolated the opportunity to engage with peers and harness social and decision capital. Although all these network ties may not necessarily be reciprocated, they indicate good connectedness and interactions among the headteachers.

The collaborative nature of this headteacher network and the learning community that emerge from the high interactions also create opportunities for informal mentoring (McCormick et al., 2011). Although mentoring is less developed among headteachers in Ghana and elsewhere, there was evidence to suggest informal mentoring practices take place in both education circuits involved in the Phase 1 study. For example, headteacher Ht1_Phase 1 described a process where she relied on '*seasoned headteachers*' for advice routinely during her transitioning into headship. Another headteacher, Ht2_Phase 1, from the same circuit recalled being mentored by his predecessor. Headteacher Ht5 from the other education circuit also recalled being introduced to a mentor following his appointment. This was part of informal arrangements organised by his CS at the time. The informal mentoring

arrangements are possibly exemplified in the sociometric survey conducted in Phase 2. It could be deduced from Phase 2 that headteachers H4M, H5M and H17M may be playing a mentoring and/or coaching role within this peer network. For all five information and advice networks, they were the most sought after headteachers and could be described as the most popular.

The strongest evidence for effective networked learning communities lies in the opportunities it offers to vulnerable individuals and groups as well as helping to solve immediate problems (McCormick et al., 2011; Cole, 2008). In the context of this study, it can be concluded that headteachers in Phase 2 have built an informal learning community that makes it possible for them to mobilise information and professional knowledge. As result, headteachers capacity to seek information and professional advice from peers create the needed professional connectivity required to facilitate their professional development (Baker-Doyle, 2015; Lin, 1999). Riggins-Newby (2004) stresses the 'power of many minds' to facilitate change in the patterns of behaviour in heavily entrenched institutions. She goes further to argue that networks offer opportunities for headteachers and principals to share experiences and practices to improve themselves, the school and the wider community.

Headteacher network and social and decisional capital

Network locations and resource mobilisation (social capital)

One conception and measure of social capital in this study reflects greater opportunity for embedded resources to be accessible to all headteachers (Burt, 1992). The argument here is that the interactions between members of a network make possible the production and maintenance of a 'social good' or 'asset', which is collectively owned and accessible to members of the group (Lin, 2001). Therefore, the more headteachers network, the greater the social capital. The sociometric

survey results about network locations and resource mobilisation focussed on number of network ties, centrality and frequency of interactions. The average link per headteacher and the presence of network ties for each network provide evidence of headteacher capacity to mobilise social capital albeit at varying degrees. Based on his network connections, it can be argued that headteacher H10M invests a lot in this education circuit compared to others because for all five types of information and advice studied, he demonstrated the highest levels of participation. He was either giving information and advice to peers or seeking information and advice from them. Conversely, it can be argued that headteacher H9F invests comparatively less because for all five networks, she has the fewest network ties on average and across all five networks investigated.

In knowledge-based networks it is important to identify prominent headteacher(s) because they establish a necessary bridge between the demand for professional knowledge and the supply of such knowledge (Geeraerts et al., 2018). Two directions of potential effect are possible: asking for information and professional advice (demand) and being asked for information and professional advice (supply). In this study three headteachers H4M, H5M and H17M are positioned as experts because they are being asked for information and professional advice (supply side) more than anyone else, across all five networks. Interestingly apart from all three being male, they have different levels of headshop experience, qualifications and head different types of school. Headteacher H4M has a BEd degree and 0–5 years' experience and heads a school that has both primary and JHS. Headteacher H5M has over 20 years' experience, holds a Teacher's Diploma and heads a JHS only. Headteacher H17M also holds a Teacher's Diploma but heads a primary school and has 11–15 years' experience. These suggest that, in this study, network characteristics such as type of school, years of experience and highest academic

qualification do not necessarily influence network centrality. This is could be beneficial in terms of the quality of information and professional advice available in the network as result of diversity of expertise.

The study finds a positive and significant relationship (see Table 5.9) between headteacher gender and their likelihood of seeking information and professional advice on (i) how to help ineffective teachers improve their practice (Network 2) and (ii) how to deliver the national curriculum effectively (Network 4). Therefore, this can be interpreted as female headteachers being likely to turn to female headteachers (and similarly male to male ones) for these two types of information and professional advice. To expand on the male headteacher position in the networks, the sociometric survey findings suggest male headteachers are well 'knitted' together for all five types of information and advice investigated, whereas female headteachers are less so. This finding is different to what Moolenaar et al. (2010) observe in their study where female principals had better connections with their network peers than their male counterparts. The potential impact of such a network structure is that male headteachers become gatekeepers and, therefore, have a better capacity to influence and shape exchanges in information and advice. On the other hand, it can also be argued that although male headteachers are more tightly connected than female ones, there is enough network bridging to facilitate the sharing of information and professional advice among the entire group.

Headteacher agency and decisional capital

As discussed in chapter two, very few studies have focused on headteacher peer networks, particularly their usefulness in supporting headteacher development and practice. But proponents of networks facilitating, advancing and sharing knowledge include Wenger (2000), who argues that organisational success is dependent on

both the strengths of its social learning systems and how participation in other learning systems beyond its own boundaries could contribute to organisational learning. However, he suggests that 'socially defined competence is always in interplay with our experience' (Wenger, 2000, p. 226). Therefore, as expressed by some of the headteachers, the range of expertise and knowledge within their network is an invaluable asset that is not being harnessed in any consistent way.

The findings indicate that headteachers interact and work with each other and share valuable information and professional advice that helps them in their decision-making. The less professional capital, the greater the tendency to rely on centralised support from the district office. But what this study reveal is greater potential for headteachers to mobilise professional capital within their network, hence increasing their autonomy and agency (Fertig, 2012). Such agency is informed by past experience, which draws on professional and personal experience (Priestley et al., 2014). For example, Phase 1 headteacher Ht2 described how he has been able to mobilise funds for infrastructure projects in his school. He credited his success to not only the professional support within his circuit but also the supportive and empowering environment created by his CS. Phase 1 headteacher Ht3 provided a different type of example that demonstrated how she has successfully adapted an initiative from another school to solve a challenge with teenage pregnancy in her own school.

Notwithstanding the opportunities that networking creates for the mobilisation and utilisation of professional capital, an area of networking that has not been explored in detail in this study is what Leithwood (2018) describes as the dark side of collaboration in networks. This includes situations where close associations promote 'group think' and therefore empower headteachers to resist external influence (e.g. government policy initiatives). The multiple cliques that exist in this

relatively small network of headteachers creates opportunities for greater social capital as argued earlier but also greater comradery and capability to resist change. Cliques may possess collective power even if each member has limited or no power as an individual. It is therefore important for education officers to be aware of the risk cliquishness poses and to ensure they create opportunities much wider collaborations.

Another aspect of the dark side of networks is the informal power created as a result of an individual's centrality within the network. Even though there isn't a common measure or agreed interpretation for 'informal power', some sociologists including Bonacich (1987) argue that power is a fundamental property of social structures. One such argument is that power is not exerted in a vacuum but rather is a consequence of patterns of relations (Bonacich and Lloyd, 2001). Therefore, in a network where there is low density (i.e. loose network ties), the opportunities to exert influence on others is low, which then reduce one's power within the network. The opposite may be true for highly dense networks because the argument is that actors with a higher number of ties have the opportunity to control the type information that flows through them to their connections.

For example, headteacher H17M, who is the most sought after headteacher (across the five networks) and appears in numerous cliques, could be considered to have a high level of informal power. His position affords him informal power because he potentially has influence over what information and advice to share with those who contact him. Beyond the direct ties that connect to headteacher H17M, for all five information and advice networks, he seems to have a well-connected neighbourhood. For example, for Network 1, headteacher H17M has the highest number of connections and is connected to headteacher H5M who has the second

highest number of ties. For Networks 2, 3 and 5, a similar pattern exists where headteacher H17M has high connectivity as well as a highly connected neighbour. Although these lines of enquiry were not explored, based on the size of the network and the close associations among headteachers, EOs and especially circuit supervisors would have to pay attention to these dark sides of the network.

In conclusion, this thesis confirms the opportunities networking as a social learning activity creates for the sharing of professional knowledge in the Ghanaian context (Sofo and Abonyi, 2018; Addae-Kyeremeh, 2014). The findings reveal that through informal peer-to-peer networking, headteachers in an education circuit are able to access each other's professional knowledge. Professional capital in this study represents headteachers skills and professional knowledge gained over years of professional practice, their collective expertise and how that helps them make informed decisions. Five main types of professional knowledge (content of information and professional advice) were identified by headteachers as pertinent to their professional development, yet such professional knowledge is not available in the headteacher handbook or through formal training and workshops organised by the education office. Therefore, the value of this finding lies in the content of the information and professional advice as well as the strength of the network relations that make it possible for exchanges among different groups of headteachers.

Among the different forms of measurement of network structure and activity; degree centrality, cliquishness, and MRQAP have been used to explain the size of the network, headteachers capacity to mobilise social and decisional capital and the extent to which characteristics such as gender influence headteachers choice(s) of who to go to for information and professional advice. Although the study does not test a hypothesis per se or seek to establish causality, it concludes that gender could

be one of the influencing demographic characteristics for the formation of information and advice seeking relationships. Therefore, it is important for policy makers to pay attention to the gender make-up of education circuits to ensure there is a good balance in all education circuits.

Summary

This chapter has presented the main findings of this empirical study drawing of the evidence from Phase 1 preliminary study and Phase 2 sociometric study. The study finds evidence of a learning community of professionals, who through networking make available professional knowledge to their members and support each other. The potential benefits of networking and its capacity to support professional development has been discussed. The capacity of headteachers to mobilise professional capital or supply information and professional advice to support others have been discussed. Three key experts in this peer network have been identified and their potential influence discussed. Lastly some of the potential risks associated with networks have been highlighted and discussed. The next chapter presents the conclusion and final remarks on this thesis.

CHAPTER SEVEN: CONCLUSION AND FINAL REMARKS

Introduction

This concluding chapter begins by summarising the key issues emerging from this empirical study and its contributions to educational leadership research. Like many small-scale network studies, this study has a few limitations that are also discussed in this chapter. Headteacher professional learning and development remain areas of great interest among the academic community and policymakers; therefore, potential implications of the findings for headteacher professional learning and development in Ghana and similar contexts are discussed next. This is followed with some suggestions about areas for further research. Carrying out fieldwork for any type of academic endeavour always throws up interesting challenges and new learning; therefore, the next section provides a reflection on fieldwork experiences. This is followed with a personal reflection of my positionality as an insider and outsider in this endeavour. The final section of this chapter and the thesis provides the researcher's overall reflection of the doctoral journey and how the entire process has shaped his learning, professional development and practice.

Summary of key issues emerging from the study

A summary of the key issues emerging from this study in relation to the three research sub-questions is presented next.

RSQ 1: What are headteacher views and experiences about their professional development and how they build professional capital in the Sunyani district of Ghana?

In this study, headteachers and EOs strongly indicate that 'experience is the best teacher' and therefore highly value headteacher experience in building task-specific

human capital. Lack of formal leadership training for headteachers is not perceived to be detrimental to headship preparation. Headteachers also rely on their experience for information and advice and through their network relations build social and decisional capital. Overall, the study findings suggest headteachers build professional capital through a range of ways (such as collegial discussions with peers, seeking task-specific information and advice from peers, mentoring and experiential learning) beyond formal training. As Hargreaves and Fullan (2012) argue, countries and communities that invest in their educators and commit to continuously developing and creating opportunities for networking are building professional capital that has long-term benefits for their education system and economy at large. Headteacher reliance on each other for information and professional advice has emerged as an important facet of their professional life. An examination of network relations among headteachers in one of the education circuits provides evidence on the potential contribution of networking to the development of all three elements of professional capital (i.e. human, social and decisional capital).

RSQ 2: What types of professional knowledge do these headteachers indicate as most valuable to their practice?

The findings from this empirical study shed light on unreported practices among headteachers as leadership practitioners, but more significantly the types of professional knowledge they require for professional development, an area of work that has received little attention in the literature. In the Ghanaian context, the researcher has not found any studies that focus on areas of development that headteachers consider pertinent to their practice. Most studies on headteacher development and practice have focused on competency frameworks borrowed from Western contexts (e.g. see Zame et al., 2008) that stress what headteachers should

know rather than what headteachers specify themselves for their development needs. This study has shown the information and professional advice that headteachers exchange in professional networks relate to content that cannot be easily codified and presented in formal training and workshops. Indeed, this study has revealed five types of professional knowledge, which headteachers have identified as valuable to their practice, that have not been reported in previous studies in Ghana. These five types of information and professional advice could form the basis of further investigations in Ghana and other contexts to understand how similar self-reported development practices impact on school leadership development.

RSQ 3: To what extent do informal headteacher interactions allow them to harness this professional knowledge in support of their practice?

This study has revealed that contrary to calls for structured and formal leadership development programmes, headteacher professional development could be best served through social learning made possible through networking and peer collaboration. The evidence indicates that informal, experiential, situated and incidental ways of professional development should not be underestimated in a context like Ghana. Fertig's (2012) work in Ghana points to the professional capital that exists in schools (i.e. the knowledge and experience on how to deal with some of the challenging and demanding tasks of school leadership and management), which is not harnessed and shared across schools.

The narrative accounts from headteachers in Phase 1 of this empirical study and the Phase 2 sociometric study of one of the education circuits have provided evidence to suggest positive effects of networked learning and collaboration among headteachers. Early-, mid- and late-career headteachers demonstrated that they

share information and professional advice and support each other. Although some participants are more active and occupy strategic positions in this network, a good level of connectivity exists for all five types of information and professional advice investigated. All headteachers have a tie with another headteacher indicating that there are good opportunities for collaboration and support with no headteacher being isolated. There is evidence to suggest that headteacher exchanges are contributing to their development and support. In addition, in the Phase 2 education circuit, the study has revealed that some headteachers may be performing informal mentoring and/or coaching roles that are undocumented. This is evident from the number of headteachers who accessed various types of information from headteachers who were deemed as 'information-rich' headteachers.

Further evidence suggests most headteachers believe their practice has improved through collaboration with other headteachers. Some headteachers described instances where learning from network meetings with colleagues associated with an FBO has proved to be transferrable to their school. However, networks, just like other partnerships and collaborations, are prone to challenges and this study does not suggest that they are the only recipe for success. The study argues that networking can create social capital among individuals, which, in turn, can disseminate innovation through bottom-up initiatives. It recognises that for this to function successfully in the Ghanaian context, it may require careful planning and leadership, which can be offered by CSs.

This study aimed to answer its main research question:

> *How do headteachers in the Sunyani district of Ghana build professional capital and harness professional knowledge in their peer network to support their practice?*

This empirical investigation of headteacher practices in the Sunyani district of Ghana, shows that headteachers build professional capital through regular network interactions with their fellow headteachers. These regular interactions create a professional learning community that makes it possible for headteachers to connect to peers and access information and professional advice that is pertinent to their practice and professional development. Although formal training and workshops are not dismissed, this study has revealed the importance of peer-to-peer interaction in professional settings where headteachers indicate they receive limited state support for their professional development.

The study finds evidence of a presence of a networking among headteachers in the education circuit. The findings shed light on the type of content headteachers value for their professional development and the extent to which their network interactions could facilitate the exchange of such information and professional advice. There is evidence to suggest headteachers are making the effort to share information and professional advice; hence, harnessing social and decisional capital embedded in the headteacher community. This is further highlighted by the limited variation between the number of connections across all five information and professional advice networks. Through the network connections professional knowledge is made available to anyone who seeks advice from a peer.

Although the study and its findings do not provide a basis to determine causal effects on network interactions and behaviour, some fuzzy generalisations about what is possible within headteacher networks are made. For example, the centrality and prominence of male headteachers in the education circuit provide food for thought. This is because their centrality positions them as key knowledge brokers and,

therefore, they may possess informal power that could be used to direct knowledge to positive or negative effect.

Contributions to educational leadership research and practice

This study contributes to the body of knowledge and understanding about headteacher learning and development practices and how they build professional capital to advance their practice. Although the literature on headteacher human capital development is extensive, there is limited attention given to research about how headteachers and principals are harnessing social capital within their professional communities and how that enhances their capacity to make informed judgements (decisional capital). This study has shown that headteachers in Ghana, through their network interactions with peers, are able to harness social and decisional capital embedded in their professional community to advance their practice. In doing so, they also enhance their task-specific human capital. This finding adds to the growing literature on social networks and how the professional capital embedded in them could be contributing to the development and support of their members, in this case headteachers.

Most significantly, the study has revealed the importance of professional interactions and their potential to provide a supportive mechanism for headteachers. It also adds to existing evidence about social learning and networking at the workplace as a highly valuable and potential means for professional development. The study findings shed light on the level of connectivity among the headteachers and provide evidence for assessing elements of professional capital. For a district that is not well resourced to provide adequate formal professional development for headteachers, this could enable policymakers to target their limited resources to individuals and groups that are well placed in the network to cascade information and advice to their

peers. Promoting professional interactions and networking could create opportunities for mentoring and peer support, hence a demonstrating how networking as a social process can influence practice.

The study makes further contribution to the field of educational leadership preparation and development by highlighting the significance of 'bottom up' approaches to leadership learning and development. It challenges the promotion of formal certification and qualification as well as the standards-driven approach to headship preparation associated with programmes in UK, USA and elsewhere.
and are arguably founded on the argument that teaching experience is no longer sufficient to prepare headteachers for school leadership. The study provided evidence of alternative ways in which professionals are building professional capital and unearths an authentic approach to school leadership development that is contextual, situated and relevant to a community where collaboration and socialisation is culturally promoted.

Methodologically, this study makes a significant contribution to the investigation of informal networks in Ghana and similar contexts. The mixed-methods approach used to examine this informal network provides a methodological framework for researching headteacher professional development in formal and informal settings. Research on network structures has been dominated by quantitative approaches, such as SNA, because it offers the best opportunity to examine network structure, size, characteristics and properties of the people being studied as well as roles and positions of individuals and groups in the network (Borgatti and Offem, 2010; Borgatti, 2005; Wasserman and Faust, 1994). However, an innovative method described as *SNA with ethnographic sensibility* has been introduced in this study and to the field of educational research. *SNA with ethnographic sensibility* combines

the richness of SNA with ethnographic approaches to examine the structural web of interrelationships, the content associated with network interactions and how network ties afford access to ideas, information, professional advice, learning and development, from the perspectives of the network participants. The systematic combination of ethnographic methods (such as focused interviews and informal conversations) with other quantitative methods deployed in SNA makes several important conceptual advances possible for anyone looking to explore social relations and embedded practices. Although the ethnographic aspects offer a framework for a deeper study of a group of people, complementing them with a social network survey helps to explore personal relationships much further.

Implications for policy and practice

Based on the key issues that have emerged from the study, the following have been identified as implications for policy and practice. Firstly, as argued in chapter two of this thesis, individualist approaches to headship development only focus on one aspect of the professional capital equation, human capital. But there is growing evidence of the need to recognise the power of the many. Therefore, rather than focusing on bringing external experts unaware of the school context to deliver trainings and workshops, headteacher knowledge about their context and experience could be invaluable to the education office's efforts to build task-specific human capital. The importance of context- and content-specific knowledge is supported by this study. This implies a need for a more sophisticated approach to initial professional development, which is relevant to the transitional process that exists in Ghana and similar contexts. For Ghana's policymakers, it is argued that headteacher professional development programmes must recognise context-specific solutions that are founded on what headteachers need in preparing for headship rather than what policymakers consider is necessary.

Even though the headteacher handbook may be regarded as a useful resource of codified knowledge about administrative and management processes, the evidence from this study suggests it does not go far enough in providing much-needed information and professional advice that headteachers emphasise as being most pertinent for their daily practices. The tacit nature of the five types of information and professional advice explored in this study suggests that policymakers and education officers create opportunities for headteachers to deepen their networking relationships because it is through such relationships that social and decisional capital is created and shared, and tacit knowledge can be transferred among peers. The networking and collaboration that emerge from headteacher interactions also create opportunities for informal mentoring (McCormick et al., 2011).

Another implication of this study relates to developing formal CPD activities that are pertinent to school leadership and relevant to headteachers as they navigate their daily challenges rather than relying on 'industry standard knowledge', which very often is not easily applicable to the basic school leadership context in Ghana. CSs and educational training officers should pay attention to the types of information and advice exchanged among headteachers in their informal networks because such knowledge could provide a basis in the design and development of CPD programmes for headteachers. This could impact on educational policy in Ghana and similar contexts by providing some evidence on approaches to headteacher professional development and collaborative working. This will help in the planning and delivery of CPD programmes for school leaders, particularly headteachers (in service and pre-service) in Ghana and similar contexts.

For practitioners, it is argued that if the professional capital generated through networking is to be harnessed for school improvement, then circuit supervisors (CS) could have a key role in these networks. Although they have not been included in this study, their legitimate power as system leaders in Ghana can be used strategically in the facilitation and leadership of networks where these are formally constituted. For example, in one of the circuits in the Phase 1 study, headteachers enthusiastically described the value of the meetings facilitated by the CS and highlighted that they were great opportunities to share good practice. Regular meetings to share good practice is not consistent across all circuits; they could be developed as part of leadership and management practice and led by CSs. In his study of headteachers, Fullan (2010b, p. 14) observes that 'effective system leaders are not only intra-school leaders; they actively participate in district networks of peers and have a strong sense of two-way partnership with the district.'. Fullan (2010a) identifies critical components of effective system leadership as communication, capacity building and leadership. These explain the important role that CSs as system leaders could play in their networks. If networking were to be described as the engine for professional development, then CSs could be the 'engine oil' that keeps it running.

Finally, the district office should pay attention to the induction of new headteachers. Although some headteachers received support from their CS and peers during their first week, they described a sense of insecurity mainly due to lack of knowledge about completing statutory forms and other administrative procedures. The annual CPD programme could include induction sessions that are then complemented with school-based support for newly appointed headteachers. During this period, headteachers can be introduced to the wider headteacher community in the education circuit and beyond (i.e. professional socialisation). This socialising

process would help strengthen network relations, which, as seen from this study, is a good way to share information and advice and build professional capital.

Limitations of the study

There are limitations to this study that may affect the extent to which the findings can be generalised. These particularly relate to the size of the field site and methodological challenges associated with researching social interactions and human behaviour. Firstly, restricting the field site to one district (and subsequently one education circuit) impacts on claims and levels of generalisations that can be drawn from the study in relation to headteacher perceptions and practices in Ghana and, indeed, Africa. To mitigate this, care was taken in choosing a peri-urban location of the municipal area, the interviewees via a purposive sampling approach in Phase 1 (as discussed previously) and to conduct a whole-network survey in Phase 2 that captured all members of an education circuit, which could be described as a typical education circuit and professional network.

A second limitation concerns the methodology. Changes in behaviour and practice are a key aim of professional development. However, the researcher was unable to conduct any observations or shadowing as part of the research due to logistical reasons explained in the previous chapters. The study does not shed light on the quality of the interactions and their impact on headteacher practice. It has relied heavily on self-reporting. Although that provides rich and authentic views from participants, the lack of such methodological triangulation implies that certain statements from the respondents have not been corroborated. For example, assertions about transferring learning from network meetings to professional practice were not triangulated. Another consideration is that headteachers may answer differently depending on such contextual factors as the immediate relevance

of the question, the time they take to think before selecting their answer, or a recent experience. They may also answer at a particular point in time, and so their response may not be the same as the one they might give on the following or preceding day. All these contextual issues may affect the data that emerge and hence impact the validity of the research findings.

Notwithstanding these limitations, some logical inferences can be made because the study draws on authentic headteacher views about their professional development and generates empirical evidence about network structures and connectivity, including the extent to which knowledge exchanges could be contributing to professional development. The implications from the study findings can have wider applicability to African countries where similar practices exist amongst headteachers.

Areas for further research

Social network research in education is a growing area of work as academics and practitioners continue to study the antecedents and consequences of school-based networks. However, as argued earlier, these studies have often focused on teachers and classroom practices with limited attention paid to headteacher practices, particularly how they are developing themselves through their networks. The findings and limitations from this study point to some areas worth exploring further in this context to add to our knowledge and understanding of headteacher networks and how those relate to their professional capital.

Firstly, further exploration of why some headteachers are more central than others and why others are less active would enhance our understanding of this peer group better. Understanding why headteachers occupy positions that offer them access to

more people has huge benefits for dissemination of information and professional advice within the education circuit. Also understanding why some headteachers are highly sought after has huge potential for developing support systems, such as mentoring and coaching, which are known to help develop others in professional settings. This further exploration could also reveal why there are outliers in the education circuit, which would help develop strategies to engage them within a professional community.

Secondly, findings from this study have shown that headteachers are connected and sharing information and professional advice to advance their practice. Therefore, if there were a much wider field site covering, say, an entire educational district, it would provide a huge evidence base that would be helpful in the planning, design and delivery of support for headteachers. It would also generate enough evidence that would make such findings more generalisable for similar districts in Ghana.

As discussed in chapter four, the data suggest that male headteachers are clustered together in comparison to female headteachers. Also of note is the MRQAP analysis that suggests for two types of information and professional advice investigated in this study (i.e. how to help ineffective teachers improve their practice and how to deliver the national curriculum effectively), female headteachers are likely to turn to female headteachers (and likewise male to male headteachers). A third area of further examination could explore why this situation arises and will be of great interest as we try enhancing headteacher professional development in an inclusive way.

Finally, even though the content associated with headteacher interactions have been explored in this study, their critical engagement with the information and professional advice have not been explored. This could be another important area of further study. A longitudinal study could explore the extent to which the information and professional advice exchanged is helping drive behavioural change in schools. However, the researcher accepts that tracking informal learning over significantly long periods can be complex and problematic.

Fieldwork experiences

Conducting research in educational settings in developing world contexts can be a challenging affair. It is important that the researcher is flexible and capable of managing complex issues that arise during fieldwork. In this study, four major main issues were encountered and discussed as follows.

The first issue was about ethics. Given that data collection using interviews concerns the unique instances where people express personal opinions and divulge sensitive matters, it was important to consider ethical issues such as informed consent, confidentiality and identifiability. Although large data sets generated from numerical analysis can easily be aggregated to avoid traceability, this is often difficult to achieve with narrative data sets in small-scale studies. In such studies, researchers often use pseudonyms to help achieve anonymity. However, in some cases, the nature of the study may imply some participants may be identifiable. For example, in this study, although pseudonyms have been used to represent all participants, the CSs for the two education circuits where the headteachers were drawn from have privileged knowledge of the participants; however, they will not know who said what. This ethical issue was fully discussed with the municipal director and the participants; however, in the GES, researchers will only be allowed

official access to a school if the CSs accompany them. There is agreement on the use of pseudonyms in any ensuing publication for the research. The municipal director has no concerns about identifiability of the municipal area.

A second issue that impacted on this study was logistics and to some extent available financial resources. As the study involved headteachers, the fieldwork had to be carried out during the school term time in Ghana. Most of these periods were also busy periods for the researcher in the UK and so it was challenging to secure any study leave to conduct the fieldwork. In Ghana, it was also challenging to synchronise the interview schedule with the respondents even though these had been arranged and agreed in advance. The researcher had to be very flexible and prepared to accommodate late cancellations of interviews as the district director had asked headteachers and education administrators to accompany her to events. This had an impact on the sampling strategy for the interviews; hence, there was an element of convenience sampling. On reflection, one of the things I could have done differently would be to strengthen the ethnographic aspect of the study by spending more time in the field observing headteachers and conducting more interviews after the social network survey. I believe this could have provided further explanations as to why certain relations are stronger than others, why some headteachers are more prominent and why others are not.

A third issue concerns the methodology and ensuing data analysis techniques. Network analysts frequently use close-ended questions to map out the strength of association between individuals and among groups. The diagrams yielded by such analysis can reveal a group core and a periphery, the strength of external attachments, and obligatory points of passage between participants studied (Robins, 2015). Moreover, they can identify high-density personal networks in the

education circuits, which are important in mapping out the physical isolation and organisational alienation that may exist. Thus, an SNA can help us understand key aspects of the three research sub-questions. Although ethnographic methods can generate rich data about interactions, only a large relational matrix can reveal egocentric and sociocentric overlapping networks and the density and directionality of ties, which all allow the researcher to put the events and people of interest into a fuller context (Borgatti et al., 2013). For these reasons, an analysis tool (software) was required but there were limited options.

Personal reflection

A personal reflection point worth mentioning concerns my own knowledge and understanding of the context within which the study was conducted. As discussed in Chapter 1, this positions me as an insider and outsider. The main impact of this positionality is the insider knowledge it gave me in analysing the complex relationships that emerged from the sociometirc survey. For example, having practiced as a teacher in this context for a year, I had good knowledge about close relationships that teachers, headteachers and broadly the communities form based on their religious denomination. Therefore, when particular cliques emerged from the sociometric survey in phase 2, a first inclination was to go back to the qualitative data in phase 1 to examine the type of schools the three ‘all-female clique’ and three ‘all-male clique’ the headteachers were associated with. Such insights may not be easily observable by someone with limited knowledge about the sociocultural context. However, maintaining an outsider position always meant I was able to listen carefully to the practitioners, recognising that my limited understanding of their roles may have changed since I left Ghana in 1998.

Final remarks and lessons learnt

In this final section, I reflect on my experiences in the past six years where I have combined a few roles at work and home and how these different roles and responsibilities have impacted on my learning and development. As a student and lecturer, I have gained a lot from undertaking such an extensive review of literature on professional development, professional capital and social network theory. Conducting the literature review has exposed me to the different concepts associated with social network research and how various researchers have attempted to evaluate a resource that is not tangible but embedded in social relations. At the start of this student journey, I was unfamiliar with statistical and numerical analysis associated with social network research; my only exposure to social network research was limited to small-scale studies that were purely based on narrative approaches.

On methodology, adopting a mixed-methods approach that involved SNA meant that I had to relearn a few statistical analysis tools and learn how to use UCINET and NetDraw effectively. In my opinion, this has helped paint a better picture of the headteacher network than could have been achieved with just a narrative approach. The research process has enabled me to learn and appreciate the complexity involved in designing and analysing studies that involve mixed-methods design.

As a leadership practitioner and lecturer, I now fully appreciate networks and reflect on the different ways I am building my professional capital. I have taken my professional relations much more seriously and try to attend social events, both formal and informal, that are organised by the various professional associations of which I am a member. This has been beneficial because I am now aware of two

academics outside the OU who share a similar interest in researching leadership networks in educational settings.

I recognise that findings from this study offer an alternative approach to headteacher learning and development which is in contrast to the ‘Westernised’ and ‘top down’ approaches that focus on promoting formal certification, deploying interventions modelled on Anglo-American educational and social contexts, with limited attention to the socio-cultural context of Ghana. I intend to publish my main findings in both academic and professional journals, but more importantly make them available to practitioners and policy makers in Ghanaian. I also look forward to furthering my scholarship in the use of SNA and ethnographic approaches to study headteachers learning, development and leadership practices.

Finally, combining work, studies and caring responsibilities at home have made these past six years quite a challenge. Nonetheless, I have enjoyed every aspect of this journey. It has all been worthwhile.

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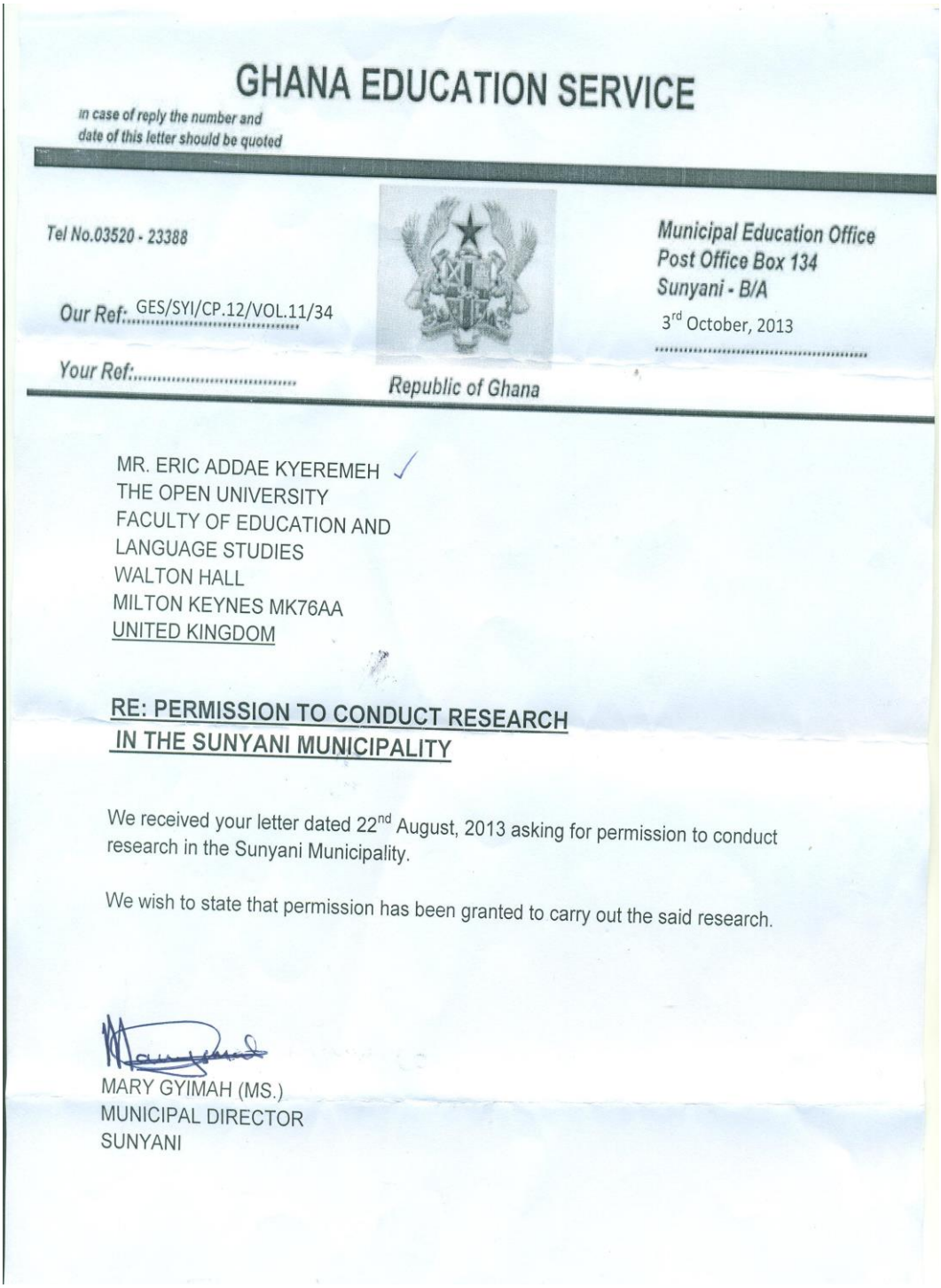
APPENDICES

Appendix A: Letter of request to conduct educational research in Ghana



GHANA EDUCATION SERVICE

in case of reply the number and
date of this letter should be quoted

Tel No.03520 - 23388

Our Ref: GES/SYI/CP.12/VOL.11/34

Your Ref:.....

Republic of Ghana

Municipal Education Office
Post Office Box 134
Sunyani - B/A

3rd October, 2013

.....

MR. ERIC ADDAE KYEREMEH ✓
THE OPEN UNIVERSITY
FACULTY OF EDUCATION AND
LANGUAGE STUDIES
WALTON HALL
MILTON KEYNES MK76AA
UNITED KINGDOM

RE: PERMISSION TO CONDUCT RESEARCH IN THE SUNYANI MUNICIPALITY

We received your letter dated 22nd August, 2013 asking for permission to conduct research in the Sunyani Municipality.

We wish to state that permission has been granted to carry out the said research.

MARY GYIMAH (MS.)
MUNICIPAL DIRECTOR
SUNYANI

Appendix B: OU ethical approval

The Open University

From	Dr Duncan Banks Chair, The Open University Human Research Ethics Committee
Email	duncan.banks@open.ac.uk
Extension	59198
To	Eric Addae-Kyeremeh, DoE/FELS
Subject	*"Leadership and school improvement: exploring perceptions and practices in Ghana."*
Ref	HREC/2013/1535/Addae-Kyeremeh/1
Red form Submitted	11 October 2013
Date	22 October 2013

Memorandum

This memorandum is to confirm that the research protocol for the above-named research project, as submitted for ethics review, has been given a favourable opinion by the Open University Human Research Ethics Committee by Chair's action as it is thought to be low risk.

Please make sure that any question(s) relating to your application and approval are sent to Research-REC-Review@open.ac.uk quoting the HREC reference number above. We will endeavour to respond as quickly as possible so that your research is not delayed in any way.

At the conclusion of your project, by the date that you stated in your application, the Committee would like to receive a summary report on the progress of this project, any ethical issues that have arisen and how they have been dealt with.

Regards,

Duncan Banks

Dr Duncan Banks
Chair OU HREC

Appendix C: Consent form

Consent Form

Project title: **Professional learning through networking amongst basic school headteachers in Ghana.**

Conducted by
Eric Addae-Kyeremeh
The Open University, Department of Education, Walton Hall, Milton Keynes, MK7 6AA, UK

	Please Initial Box
I confirm that I have read and understood the information sheet for the above study and have had the opportunity to ask questions.	☐
I understand that my participation is voluntary and that I am free to withdraw at any time, without giving reason.	☐
I agree to take part in the above study.	☐
For interviews only	
I agree to be interviewed.	☐
I agree to be interviewed and give my consent to the audio recording of the process.	☐
I agree to the use of anonymised quotes of my views in any publication that may ensue from this research.	☐

Name of Participant	Date	Signature
Name of Researcher	Date	Signature

Appendix D: Interview protocol

Headteacher (allow 35-45 minutes)

Part 1: experiences about initial professional development

- Reflect on your first post as a headteacher and tell me how you felt about the promotion
- How prepared were you at the time you took up the post?
- What support was available to you in preparing you for headship?
- What sort of learning and development did you have to undertake to prepare you for the post?
- How did you do this?

Part 2: experiences about continuing professional development

- Looking at your current headship role, what do you do to acquire new skills for your job?
- What sorts of professional knowledge do you believe are most valuable for headteachers? I want you to think about any form of information, advice and guidance that helps you to perform your everyday job.
- Do you receive (take part in) formal training?
- Who is responsible for providing you with training and development? How often does this take place?
- Do you think the training and development you receive helps you improve your practice?
- What else do you do to develop your professional skills and capacity? Do you think these other professional development activities help you improve your practice?
- What would you want to see changed in terms of professional development for headteachers? What would you want to see changed to make headteachers better than they are?

Questions to explore during informal conversations with education administrators

- What are some of the barriers to ensuring headteachers are well supported?
- What sorts of actions do you take to overcome these barriers?

- Do you think the training provided helps improve your practice?
- How do you know this?
- What is the take up of training like?
- Is it compulsory?
- In your view who do you think is an effective school leader?
- What are some of the key things effective school leaders should focus on?
- How do you see your role in the overall development of the schools in your cluster?

Appendix E: Network questionnaire

Project title: **Professional learning through networking among basic school headteachers in Ghana**

All too often, it is assumed that transfer of knowledge and skills takes place in a rational and predictable manner through formal training programmes and development activities. But this is not always the case. Evidence from Ghana suggests that there are very limited structured training and development opportunities provided by the employer (Ghana Education Service) for headteachers (Jull et al., 2014; Oduro, 2008). It is therefore important to investigate other means by which school leaders particularly headteachers are learning and improving themselves. This study seeks to explore the structure of headteacher networks and the extent to which headteachers believe their participation enhances their learning and professional practice.

Your 'peer network' in this survey refers to relationships you have with other headteachers in your circuit that offer opportunities for you to exchange ideas and resources, learn new things and develop yourselves as headteachers/school leaders.

Completing this survey indicates your consent as a participant in this study insofar as your responses will be analysed. Participating in this study is voluntary, and I will keep all data collected confidential. Your privacy will be protected to the maximum extent allowable by law. Although I will protect your confidentiality by using a pseudonym for each school and identification numbers for individual participants in all publications and written reports, you or others may be able to discern some of the identities based on reported attributes of the school and person. Identifying information may be of the form: "A headteacher [unnamed] at Sunyani ["Sunyani" is the name of your district] said '...'." Outputs of this work will be published as part of a doctoral thesis and will be submitted for publication in international journals.

Conducted by:

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There are five questions in Part A, five in Part B and four statements in Part C to complete, which should take around **35 minutes** of your time. There is no right or wrong answer, so please be as honest as you can. Your response will be kept anonymous and only be used for the above research project.

Part A: Demographic profile

Name					
Name of my school					
Type of school	Primary only ☐	Primary + JHS ☐		JHS only ☐	
My highest academic qualification	Diploma (e.g. DipEd) ☐	Bachelors (e.g. BA, BEd) ☐		Masters (e.g. MA, MEd) ☐	Doctorate (e.g. EdD, PhD) ☐
My gender	Female ☐			Male ☐	
My age	Under 30 ☐	31–35 ☐	36–40 ☐	41–45 ☐	45+ ☐
I have been a headteacher for	0–5 years ☐	6–10 years ☐	11–15 years ☐	16–20 years ☐	20+ years ☐

Part B: Professional knowledge (information and advice)

1. Who do you go to for information and advice on how to improve teaching and learning in your school and how often do you do this? (*Tick as many individuals as appropriate*)

Name	**I rarely do this (only when there is an issue)**	**Once a term**	**Twice a term**	**Three times a term**	**More than three times a term**
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2. Who do you go to for information and advice on how to support ineffective teachers and how often do you do this? (*Tick as many individuals as appropriate*)

Name	I rarely do this (only when there is an issue)	Once a term	Twice a term	Three times a term	More than three times a term
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3. Who do you go to for information and advice on how to deal with student discipline and how often do you do this? (*Tick as many individuals as appropriate*)

Name	I rarely do this (only when there is an issue)	Once a term	Twice a term	Three times a term	More than three times a term
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4. Who do you go to for information and advice on curriculum delivery issues and how often do you do this? (*Tick as many individuals as appropriate*)

Name	I rarely do this (only when there is an issue)	Once a term	Twice a term	Three times a term	More than three times a term
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5. Who do you go to for information and advice on your career development and how often do you do this? (*Tick as many individuals as appropriate*)

Name	**I rarely do this (only when there is an issue)**	**Once a term**	**Twice a term**	**Three times a term**	**More than three times a term**
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Part C: Statements about professional practice

(*This section focuses on your perceptions about how your professional discussions with other colleagues helped you to improve your practice as a headteacher/school leader. Please indicate the extent to which you agree or disagree with the statements.)*

My discussions with headteachers in my network have helped me to improve the quality of teaching and learning in my school.

Strongly disagree	Slightly disagree	Neither agree or disagree	Slightly agree	Strongly agree
☐	☐	☐	☐	☐

My discussions with headteachers in my network have helped me on how to develop/mentor other teachers.

Strongly disagree	Slightly disagree	Neither agree or disagree	Slightly agree	Strongly agree
☐	☐	☐	☐	☐

My discussions with headteachers in my network have helped me improve my day-to-day activities in the school such as completing statutory forms.

Strongly disagree	Slightly disagree	Neither agree or disagree	Slightly agree	Strongly agree
☐	☐	☐	☐	☐

My discussions with headteachers in my network have helped me improve my school leadership practices.

Strongly disagree	Slightly disagree	Neither agree or disagree	Slightly agree	Strongly agree
☐	☐	☐	☐	☐

Appendix F: Thematic analysis of narrative data

Segments of text relating to headteacher experiences and perceptions about how they develop their professional capital	Themes	Categories (HtPC*)
I didn't attend any preparatory workshop or do any preparatory reading, but I was confident that I could do the job. I was already acting headteacher, so I didn't have to do much preparation. (Ht2_Phase1)	Developing headship proficiency through experience	Professional knowledge (task-specific human capital)
I felt ready because I'd worked as assistant head previously for a number of years. I didn't take part in any 'self-training' to prepare for headship. There is normal INSET for assistant heads but that is not necessarily preparation for [the] headteacher role. Based on my previous experience as assistant head, I was very familiar with systems and administration. I had also worked as acting head in the same school. (Ht6_Phase 1)		
I was very elated and proud to be appointed as a headteacher. Although I had no formal preparation to take up the job, I was confident that I could do the job. After several years of teaching, you always feel you have to progress at some point to headteacher. (Ht1_Phase 1)		
It was a 'good feeling' to be appointed a headteacher. I felt great because I was selected through a competitive process. I'd been teaching for a very long time in KG, primary and middle school (old system) and then JHS in the new system. I didn't do any prior reading or preparation. But I was expected to get on with it because I have many years' experience in education you know. In our system that is very important because I had developed good relationships with staff all through those years, so I feel that was good preparation. Even though I didn't do any formal preparations in the early days, official support was provided by the district office. (Ht4_Phase 1)		
It was great to be appointed a headteacher I was so excited and even cried. […] I didn't attend any preparatory workshop or do any preparatory reading, but I was confident that I could do the job. I was already acting headteacher, so I didn't have to do much preparation. (Ht2_Phase 1)		
I had been a teacher for a long time and then later as an assistant headteacher so when I reached the rank of director II, I became eligible to be interviewed as		

headteacher. I remember the CS telling me about a vacancy that had come up in another school and whether I was interested. […]. I was interviewed and appointed but had to go to another school. I was elated and my whole family was proud of me. I didn't do any preparatory work. But during the first month of my appointment, I attended INSET via [the] education office. I was taken through the requirement of being an effective headteacher. I have subsequently attended four workshops (how to help teachers prepare lesson notes, learners' statistics, good use of textbooks, effective use of learning materials). Bear in mind I've only been doing this for four months so maybe there's more training planned for me. In the meantime, I read the Headteachers' Handbook very often for ideas on how to deal with some of the everyday challenges. (Ht5_Phase 1)		
There are very few training programmes available for headteachers so for me the best way for us to improve, as headteachers, is to work closely and support one another. Most important of all, there should be greater dialogue with headteachers about their learning and development, I mean training needs analysis. […]. I feel we learn better when we get the opportunity to chat about our challenges and how we have managed to resolve everyday problems. (Ht6_Phase 1)	Collegial discussions and collaboration	Professional expertise and support embedded in headteacher network (social capital)
To be honest, most of my leadership development has been 90% through my own efforts. I believe headteachers learn and develop best when they work with other headteachers. Group work and cluster collaboration is the way forward. (Ht5_Phase 1)		
We occasionally meet together with our CS [circuit supervisor] and although this is informal, we discuss issues openly and we [headteachers] all come out with something. I mean we acquire new knowledge and sometimes we pick up things we can try in our school as well. (Ht1_Phase 1)		
We occasionally meet together with our CS [circuit supervisor] and although this is informal, we discuss issues openly and we [headteachers] all come out with something. I mean we acquire new knowledge and sometimes we pick up things we can try in our school as well. (Ht1_Phase 1)		
We all want to make sure our students and teachers are disciplined and demonstrate good moral and social behaviours. But you see, you don't get training on such issues. So, your best bet is to find out from other headteachers or your circuit supervisor about what others have tried in their school. (Ht6_Phase 1)		

There was no official support from the municipal education office. I had to rely on other seasoned headteachers for advice initially and I continue to do so. I have some good friends who are more experienced headteachers. (Ht1_Phase 1)	Informal mentoring and peer-to-peer support	
Other headteachers and the circuit supervisor were very helpful during and after my interview. For example, a colleague spent a few hours explaining how to manage capitation grant and how to do the School Improvement Performance Plan (SIPP). (Ht3_Phase 1)		
The support available in terms of preparing me for the headship was mainly the mentoring I received from the previous headteacher. It was the best form of development I could have hoped for. We worked through real challenges at work and he was always available to advise. (Ht2_Phase 1)		
After my interview, the CS took me through what was expected from headteachers and arranged for me to be given a Headteachers' Handbook and introduced me to another headteacher who could mentor me. (Ht5_Phase 1)		
There's a lot of collaborative learning among headteachers in each circuit. In my circuit, there are lots of experienced headteachers like me so there should be opportunities for new headteachers to learn from more experienced ones. There are many ways to do this apart from asking individuals, we can learn from each other via headteachers' association meetings. (Ht4_Phase 1)		
I later devised my own strategy, which we call 'mma nkomo' [(conversations among ladies) …translated from Twi language by researcher] in my school to tackle attendance and progress for girls because that was a particular problem in my school. (Ht3_Phase1)	Exercising professional judgement	Headteacher agency (decisional capital)

Since my appointment [long pause] I have been able to solicit funds to start the new structures you see over there. This is through my own efforts and I had to tap into my own networks to do this. (Ht2_Phase1)		

* HtPC = headteacher professional capital

Appendix G: Coded matrix tables

Matrix 1a: who do you go to for information and advice about how to improve teaching and learning in your school (coded without tie strength)

	H1F	H2F	H3F	H4M	H5M	H6M	H7M	H8M	H9F	H10M	H11F	H12M	H13M	H14M	H15M	H16F	H17M
H1F	0	1	1	0	0	0	0	0	0	1	0	0	0	0	1	0	0
H2F	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
H3F	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H4M	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H5M	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
H6M	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1
H7M	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1
H8M	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0
H9F	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
H10M	1	0	0	1	1	0	0	1	1	0	1	1	1	1	0	0	1
H11F	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0
H12M	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H13M	0	0	0	0	0	0	0	0	1	1	1	1	0	0	0	0	0
H14M	1	0	0	0	1	0	0	1	0	0	0	0	0	0	1	0	1
H15M	0	0	0	1	1	0	0	0	0	0	0	0	0	1	0	1	1
H16F	0	0	0	1	1	1	0	1	1	1	0	1	0	1	1	0	1
H17M	0	0	0	1	1	1	1	0	0	0	0	0	0	1	0	0	0

Matrix 1b: Who do you go to for information and advice on how to improve teaching and learning in your school and how often do you do this? (coded by tie strength)

	H1F	H2F	H3F	H4M	H5M	H6M	H7M	H8M	H9F	H10M	H11F	H12M	H13M	H14M	H15M	H16F	H17M
H1F	0	2	2	0	0	0	0	0	0	2	0	0	0	0	2	0	0
H2F	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0
H3F	2	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H4M	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H5M	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	3
H6M	0	0	0	0	2	0	0	2	0	0	0	0	0	0	0	0	2
H7M	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	2
H8M	0	0	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0
H9F	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
H10M	2	0	0	3	1	0	0	2	1	0	3	3	3	1	0	0	1
H11F	0	0	0	0	0	0	0	0	0	3	0	3	0	0	0	0	0
H12M	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H13M	0	0	0	0	0	0	0	0	3	3	3	3	0	0	0	0	0
H14M	2	0	0	0	1	0	0	2	0	0	0	0	0	0	2	0	1
H15M	0	0	0	2	2	0	0	0	0	0	0	0	0	3	0	2	2
H16F	0	0	0	3	3	3	0	3	3	3	0	2	0	3	3	0	3
H17M	0	0	0	2	2	2	2	0	0	0	0	0	0	2	0	0	0

Matrix 2a: Who do you go to for information and advice on how to support ineffective teachers and how often do you do this? (coded without tie strength)

	H1F	H2F	H3F	H4M	H5M	H6M	H7M	H8M	H9F	H10M	H11F	H12M	H13M	H14M	H15M	H16F	H17M
H1F	0	1	1	0	0	0	0	0	0	1	0	0	0	0	1	0	0
H2F	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0
H3F	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H4M	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
H5M	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
H6M	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1
H7M	0	0	1	1	0	0	0	0	0	0	0	0	1	0	0	0	1
H8M	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
H9F	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
H10M	1	0	0	1	1	0	0	1	1	0	1	1	1	1	0	0	1
H11F	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0
H12M	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
H13M	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
H14M	1	0	0	0	1	1	0	1	0	0	0	0	0	0	0	1	0
H15M	0	0	0	1	1	0	0	0	0	0	0	0	0	1	0	1	1
H16F	0	0	1	1	1	1	0	1	1	1	1	0	1	0	1	0	1
H17M	0	0	0	1	1	1	1	0	0	0	0	1	0	1	0	0	0

Matrix 2b: Who do you go to for information and advice on how to support ineffective teachers and how often do you do this? (coded with tie strength)

	H1F	H2F	H3F	H4M	H5M	H6M	H7M	H8M	H9F	H10M	H11F	H12M	H13M	H14M	H15M	H16F	H17M
H1F	0	2	2	0	0	0	0	0	0	3	0	0	0	0	2	0	0
H2F	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0
H3F	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H4M	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0
H5M	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
H6M	0	0	0	0	2	0	0	2	0	0	0	0	0	0	0	0	2
H7M	0	0	2	2	0	0	0	0	0	0	0	0	2	0	0	0	2
H8M	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
H9F	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
H10M	2	0	0	3	1	0	0	2	1	0	3	3	3	2	0	0	1
H11F	0	0	0	0	0	0	0	0	0	3	0	3	0	0	0	0	0
H12M	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0
H13M	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
H14M	2	0	0	0	2	1	0	1	0	0	0	0	0	0	0	1	0
H15M	0	0	0	2	2	0	0	0	0	0	0	0	0	2	0	3	2
H16F	0	0	3	3	3	3	0	3	3	3	3	0	3	0	3	0	3
H17M	0	0	0	2	2	2	2	0	0	0	0	2	0	2	0	0	0

Matrix 3a: Who do you go to for information and advice on how to deal with student discipline and how often do you do this? (coded without tie strength)

	H1F	H2F	H3F	H4M	H5M	H6M	H7M	H8M	H9F	H10M	H11F	H12M	H13M	H14M	H15M	H16F	H17M
H1F	0	1	1	0	0	0	0	0	0	1	0	0	0	1	1	0	0
H2F	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0
H3F	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H4M	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H5M	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	1
H6M	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1
H7M	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1
H8M	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0
H9F	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
H10M	1	0	0	1	1	0	0	1	1	0	1	1	1	0	0	1	1
H11F	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0
H12M	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
H13M	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
H14M	1	0	0	0	1	0	0	1	0	0	0	0	0	0	1	1	0
H15M	0	0	0	1	1	0	0	0	0	0	0	0	0	1	0	0	1
H16F	0	0	0	1	1	1	0	1	1	1	0	1	0	1	1	0	1
H17M	0	0	0	1	1	1	1	0	0	0	0	1	0	1	0	0	0

Matrix 3b: Who do you go to for information and advice on how to deal with student discipline and how often do you do this? (coded with tie strength)

	H1F	H2F	H3F	H4M	H5M	H6M	H7M	H8M	H9F	H10M	H11F	H12M	H13M	H14M	H15M	H16F	H17M
H1F	0	2	2	0	0	0	0	0	0	3	0	0	0	3	2	0	0
H2F	1	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0
H3F	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H4M	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H5M	0	0	0	0	0	2	0	0	0	0	0	0	0	0	2	0	2
H6M	0	0	0	0	2	0	0	2	0	0	0	0	0	0	0	0	2
H7M	0	0	3	2	0	0	0	0	0	0	0	0	0	0	0	0	3
H8M	0	0	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0
H9F	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
H10M	2	0	0	2	2	0	0	2	3	0	3	3	3	0	0	2	2
H11F	0	0	0	0	0	0	0	0	0	3	0	3	0	0	0	0	0
H12M	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0
H13M	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0
H14M	2	0	0	0	2	0	0	2	0	0	0	0	0	0	2	1	0
H15M	0	0	0	3	3	0	0	0	0	0	0	0	0	3	0	0	3
H16F	0	0	0	2	2	2	0	2	2	2	0	2	0	2	2	0	2
H17M	0	0	0	2	2	2	2	0	0	0	0	2	0	3	0	0	0

Matrix 4a: Who do you go to for information and advice on curriculum delivery issues and how often do you do this? (coded without tie strength)

	H1F	H2F	H3F	H4M	H5M	H6M	H7M	H8M	H9F	H10M	H11F	H12M	H13M	H14M	H15M	H16F	H17M
H1F	0	1	1	0	0	0	0	0	0	1	0	0	0	0	1	0	0
H2F	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0
H3F	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H4M	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H5M	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
H6M	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1
H7M	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
H8M	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0
H9F	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H10M	1	0	0	1	1	0	0	1	1	0	1	1	1	1	0	0	1
H11F	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H12M	0	0	0	1	0	0	0	0	0	1	0	0	0	0	1	1	0
H13M	0	0	0	0	0	0	0	0	1	1	1	1	0	0	0	0	0
H14M	1	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0
H15M	0	0	0	1	1	0	0	0	0	0	0	0	0	1	1	0	0
H16F	0	0	0	1	1	1	0	0	0	0	0	0	0	0	1	0	1
H17M	0	0	0	1	1	1	1	0	0	0	0	0	0	1	0	0	0

Matrix 4b: Who do you go to for information and advice on curriculum delivery issues and how often do you do this? (coded with tie strength)

	H1F	H2F	H3F	H4M	H5M	H6M	H7M	H8M	H9F	H10M	H11F	H12M	H13M	H14M	H15M	H16F	H17M
H1F	0	2	2	0	0	0	0	0	0	2	0	0	0	0	2	0	0
H2F	0	0	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0
H3F	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H4M	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H5M	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	3
H6M	0	0	0	0	2	0	0	2	0	0	0	0	0	0	0	0	2
H7M	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
H8M	0	0	0	0	0	0	0	0	0	0	0	1	0	2	0	0	0
H9F	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H10M	2	0	0	2	2	0	0	3	3	0	3	3	3	3	0	0	1
H11F	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H12M	0	0	0	1	0	0	0	0	0	3	0	0	0	0	1	1	0
H13M	0	0	0	0	0	0	0	0	1	1	1	1	0	0	0	0	0
H14M	1	0	0	0	0	0	0	2	0	0	0	0	0	0	1	0	0
H15M	0	0	0	2	2	0	0	0	0	0	0	0	0	3	2	0	0
H16F	0	0	0	2	3	2	0	0	0	0	0	0	0	0	3	0	3
H17M	0	0	0	2	3	2	3	0	0	0	0	0	0	3	0	0	0

Matrix 5a: Who do you go to for information and advice on your career development and how often do you do this? (coded without tie strength)

	H1F	H2F	H3F	H4M	H5M	H6M	H7M	H8M	H9F	H10M	H11F	H12M	H13M	H14M	H15M	H16F	H17M
H1F	0	1	1	0	0	0	0	0	0	0	0	0	1	0	1	0	0
H2F	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0
H3F	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H4M	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
H5M	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
H6M	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1
H7M	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
H8M	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
H9F	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
H10M	1	0	0	1	1	0	0	1	1	0	1	1	1	1	0	0	1
H11F	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
H12M	0	0	0	1	0	0	0	0	1	1	0	0	1	0	0	0	1
H13M	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0
H14M	1	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	1
H15M	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0
H16F	0	0	0	1	1	1	0	1	1	1	0	1	0	1	1	0	1
H17M	0	0	0	1	1	1	1	0	0	0	0	0	0	1	0	0	0

Matrix 5b: Who do you go to for information and advice on your career development and how often do you do this? (coded with tie strength)

	H1F	H2F	H3F	H4M	H5M	H6M	H7M	H8M	H9F	H10M	H11F	H12M	H13M	H14M	H15M	H16F	H17M
H1F	0	2	2	0	0	0	0	0	0	0	0	0	2	0	2	0	0
H2F	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0
H3F	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H4M	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0
H5M	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	3
H6M	0	0	0	0	2	0	0	2	0	0	0	0	0	0	0	0	2
H7M	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
H8M	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0
H9F	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0
H10M	1	0	0	3	3	0	0	1	3	0	3	3	3	1	0	0	1
H11F	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0
H12M	0	0	0	1	0	0	0	0	1	3	0	0	1	0	0	0	1
H13M	0	0	0	0	0	0	0	0	3	0	3	0	0	0	0	0	0
H14M	2	0	0	0	0	0	0	2	0	0	0	0	0	0	2	0	1
H15M	0	0	0	2	0	0	0	0	0	0	0	0	0	2	0	0	0
H16F	0	0	0	2	2	2	0	2	2	2	0	2	0	3	3	0	3
H17M	0	0	0	2	3	2	3	0	0	0	0	0	0	2	0	0	0

Appendix H: Professional development activities and target audience (2012/13)

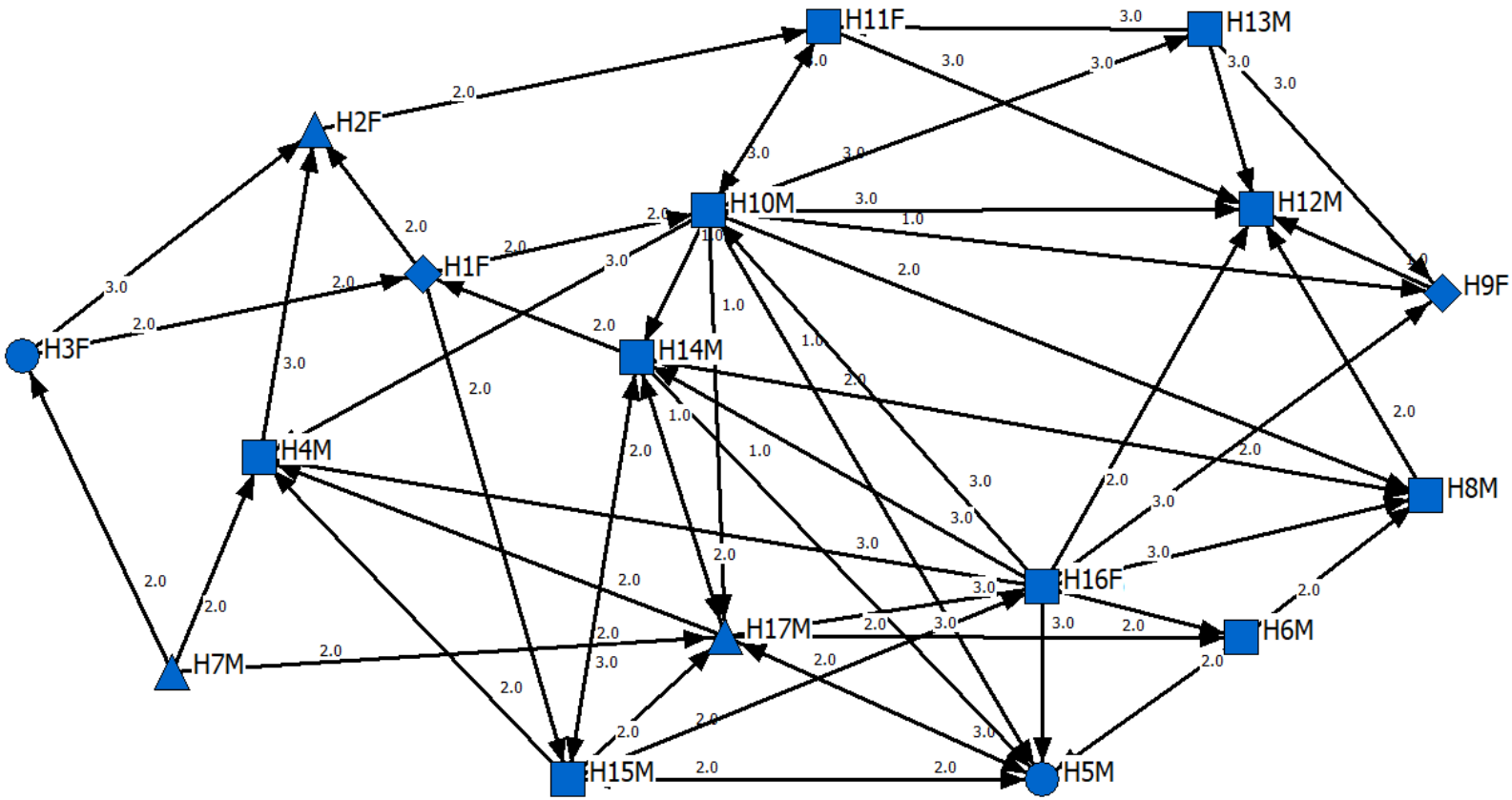
Type of CPD activity	Target audience
1. One-day generic workshop on professional development	Headteachers, teachers and school coordinators
2. Two-day workshop for guidance and counselling school coordinators	School coordinators
3. Two-day workshop for girl child school coordinators and club executives	School coordinators
4. One-day orientation for newly trained teachers	Teachers (NQTs)
5. Orientation for headteachers of basic schools on staff rationalisation	Headteachers
6. Workshop for school-based girls' facilitators	School coordinators
7. Headteacher training on school report card	Headteachers
8. Headteachers training on school census	Headteachers
9. Science teachers' workshop	Teachers
10. ILG teachers' workshop	Teachers

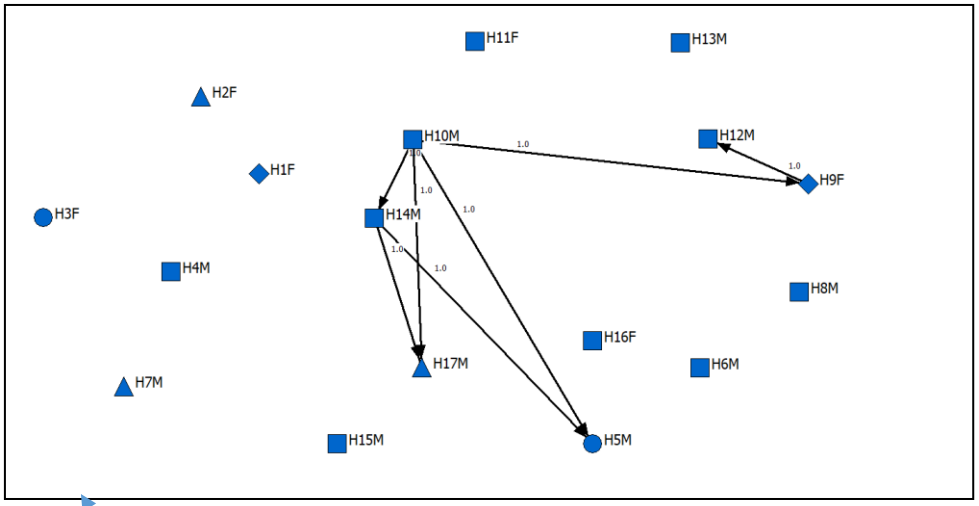
Appendix I: Sample extracts from field notebook

Date and place	Extracts from fieldnotes
3/12/2013 (education office)	It is very important for professional development programmes to focus on specific aims of government and donor agencies who sponsor these centrally run programmes. For example, the workshop on 'school-based girls' facilitators' was sponsored by a donor agency working with government to improve the access and support for vulnerable girls while in school. School coordinators are designates appointed by the headteacher to oversee this initiative. (EO3)
3/12/2013 (school visit)	In my view, an effective school leader is someone who understands the fulcrum of the job which is teaching and learning. This means he or she should be a very good role model as a teacher and be able to inspire others to achieve greater heights. Their leadership skills overall are developed over time as they engage in a range of activities while being a teacher. As for the administration side of things everyone can pick them up when they are appointed. The activities and support infrastructure in the district and municipal office is there to help teachers and headteachers. That's how our system works so for me headteacher preparation is a continuous process for all teachers who have that aspiration. Some teachers don't end up being headteachers you know … they rather become [education officers (job title used for anonymity)] like me and are expected to provide support and leadership to schools, teachers and headteachers. (EO1)
3/12/2013 (education office)	You know every headteacher wants his or her school to be the best in the district and the best way to do this is to focus on teaching and learning. At the end of the day, it is the results that count. And how do you become good at teaching and learning? It is by practising and having an open mind. Many years of teaching and doing this well is the best preparation for headship and even my role. It is not uncommon to become a circuit supervisor without headship experience. (EO4)
3/12/2013 (school visit)	Poor standards in science results in one particular school may trigger an SBI that will be facilitated by a district or municipal officer with that subject specialism. At the cluster level, curriculum leaders for all primary

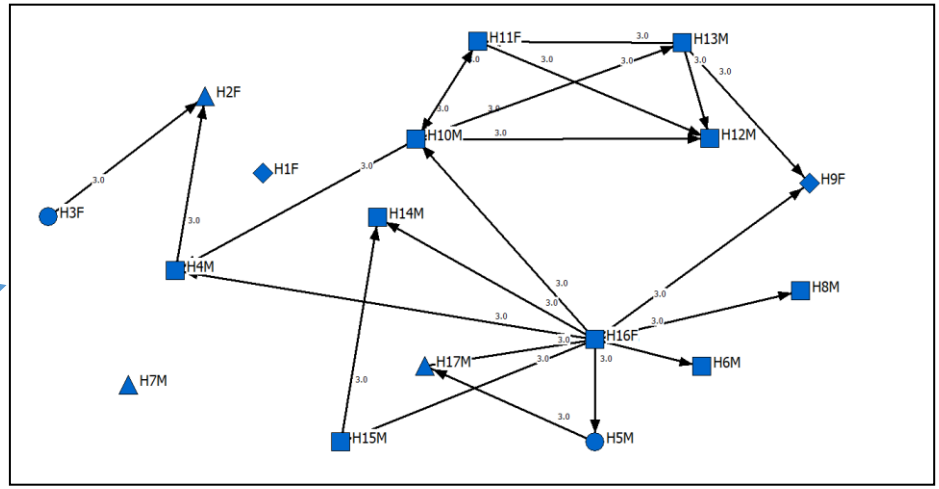
	schools or all headteachers may be invited to training sessions when there are changes to the curriculum, textbooks or reporting tools. These sessions were all delivered during instructional hours and are face-to-face; therefore, SBIs are often difficult to arrange. [An] SBI for remote schools remains a huge challenge for us for a number of reasons including transportation. (EO1)
4/12/2013 (school visit)	You see sometimes headteachers located in fairly distant towns from the district capital don't send staff for workshops because they can't cover classes in their absence or sometimes can't even find enough money to cover the transportation cost (EO2)
4/12/2013 (school visit)	An effective headteacher is one that is able to bring all his/her teachers on board to pursue the school's academic and social agenda to the benefit of all the stakeholders in the school setting. And my job is to ensure there are opportunities for headteachers to come together and learn from each other. My focus is on how to improve learning and teaching across all schools including lesson preparation, marking of assignments, assessment of pupil performance and other issues headteachers bring up. (EO2)

Appendix J: Sociograms to illustrate frequency of interactions among headteachers for information and advice on how to improve teaching and learning (Network 1)

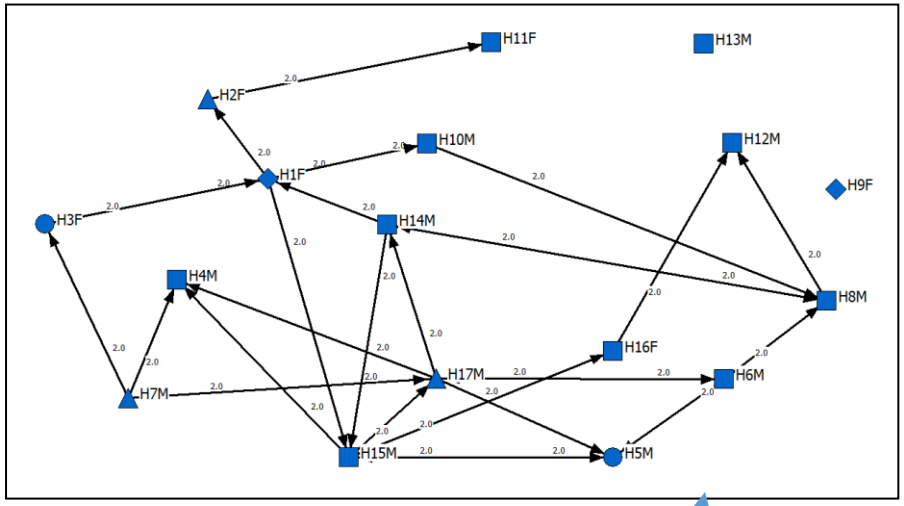




Sociogram representing network interactions for **'rarely does this (only when there is any major issue)'**

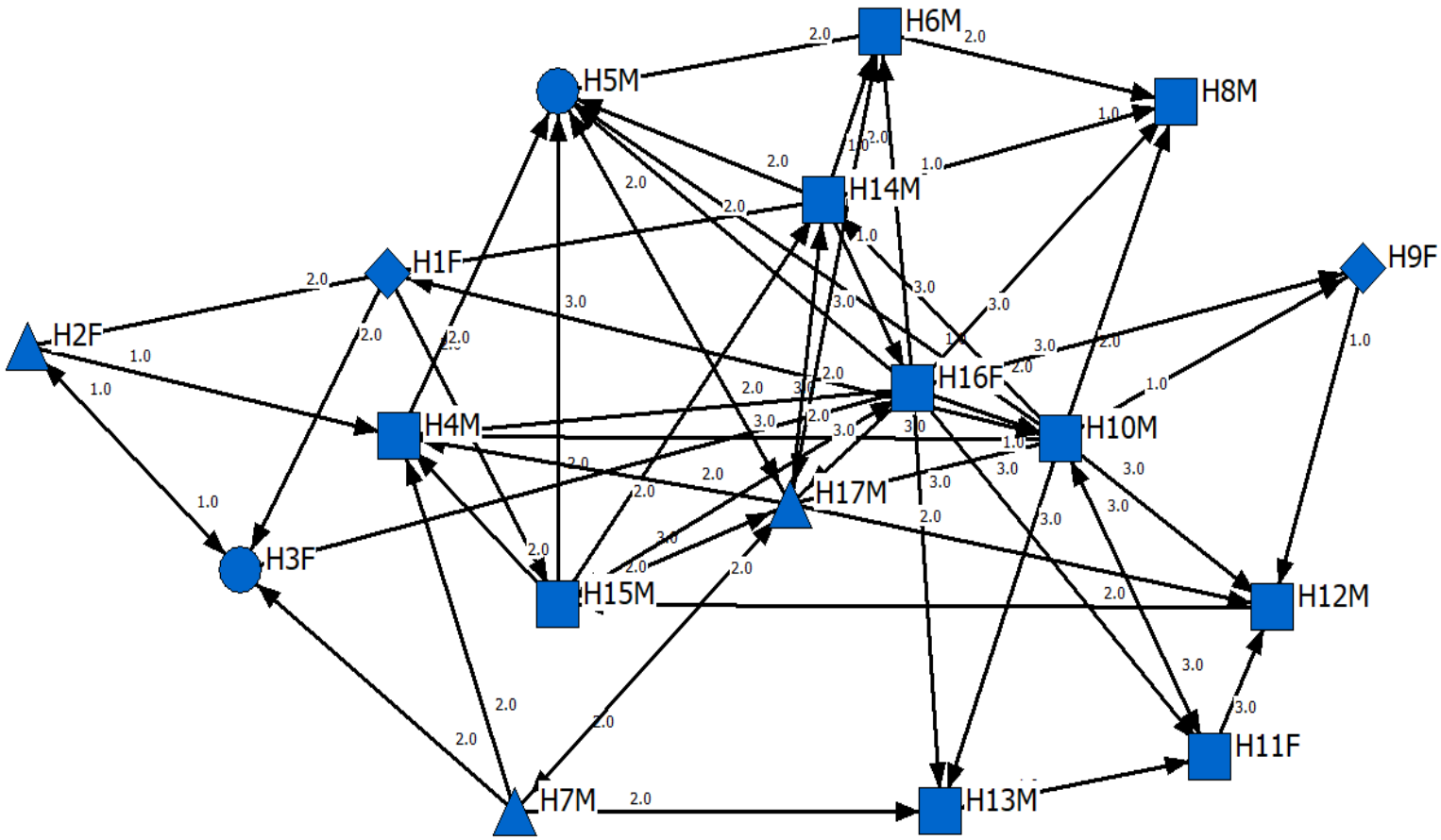


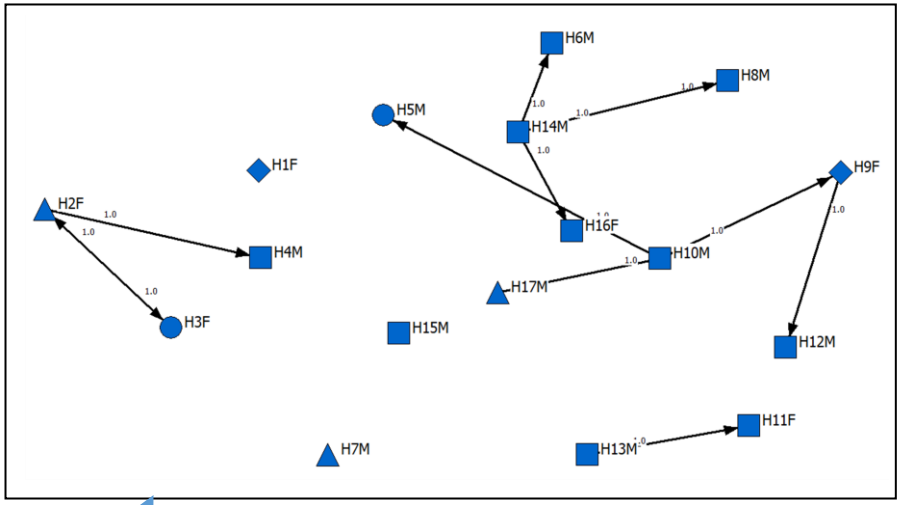
Sociogram representing network interactions for **'frequently does this (more than three times a term)'**



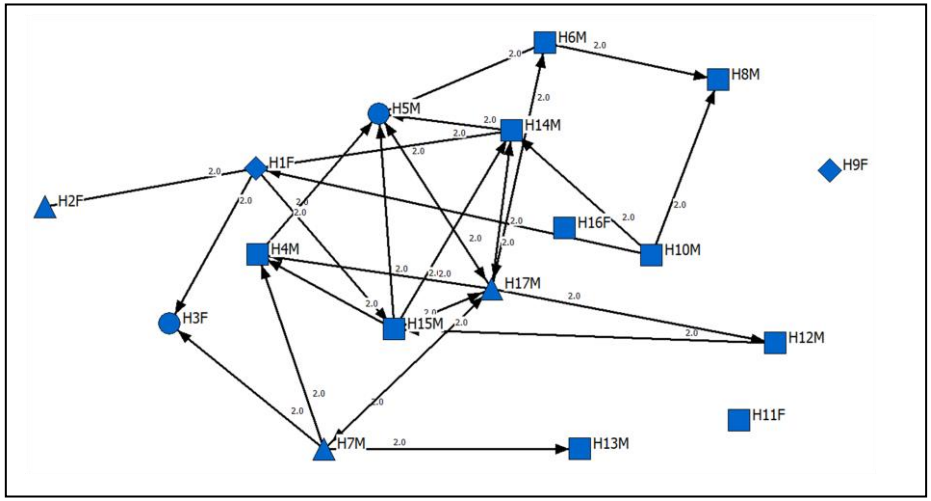
Sociogram representing network interactions for **'moderately does this (once to three times a term)'**

Appendix K: Sociograms to illustrate frequency of interactions among headteachers for information and advice on how to help ineffective teachers improve on their practice (Network 2)

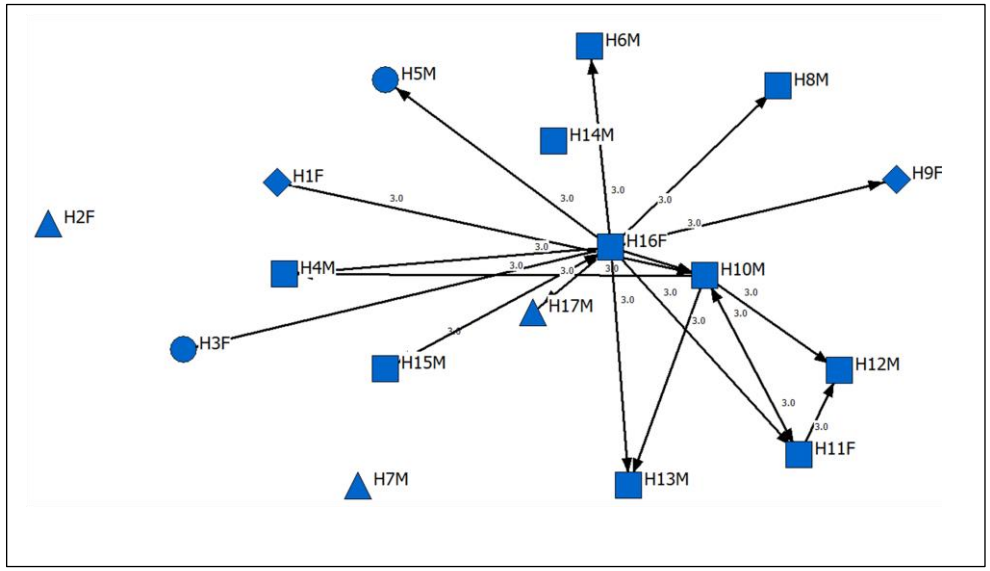




Sociogram representing network interactions for **'rarely does this (only when there is any major**

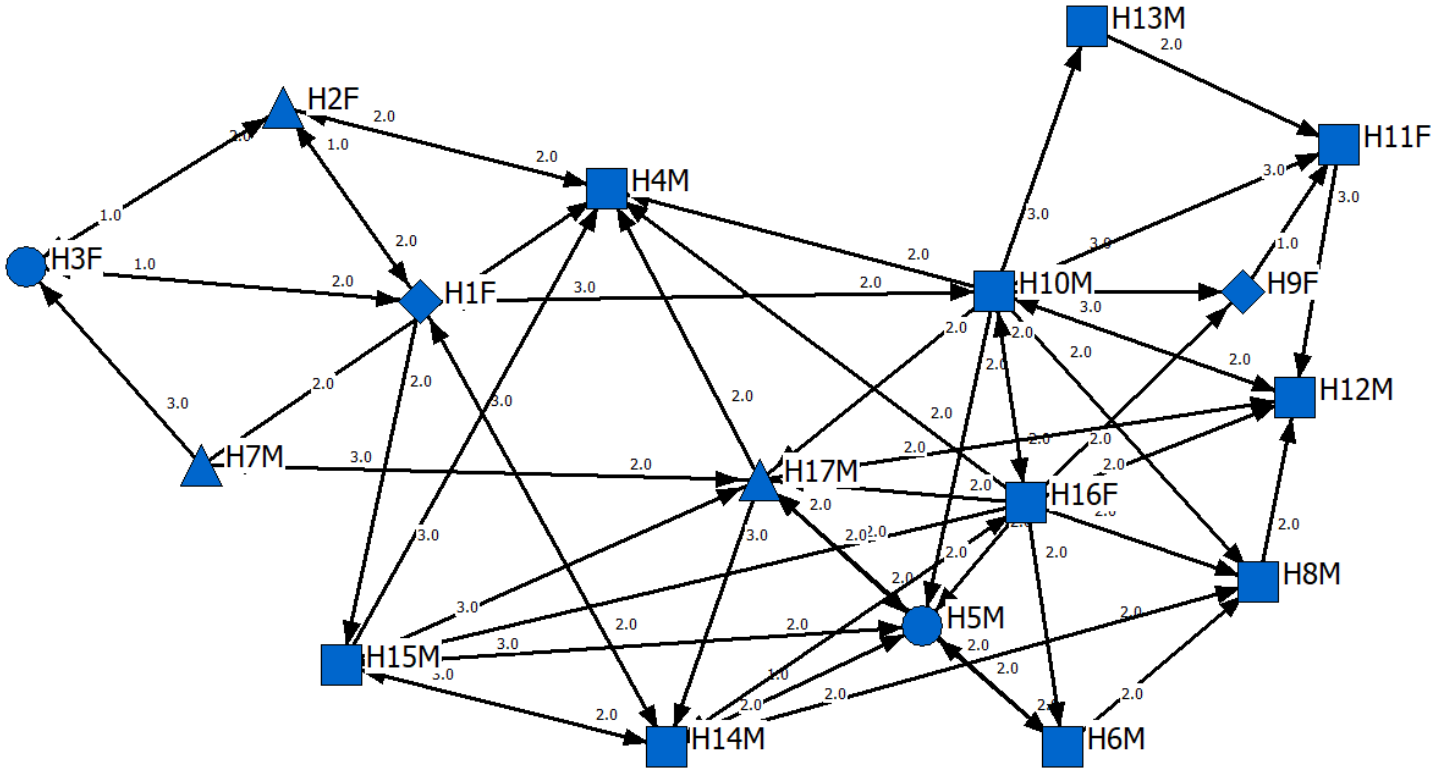


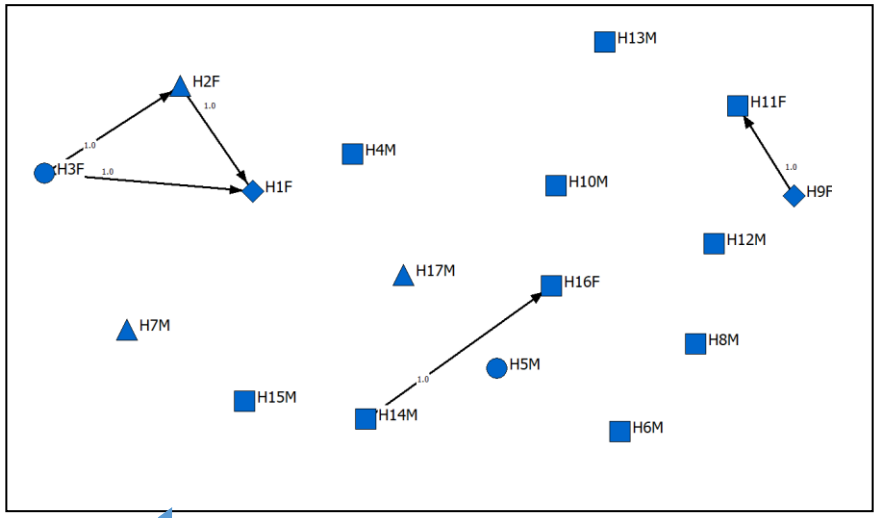
Sociogram representing network interactions for **'moderately does this (once to three times a term)'**



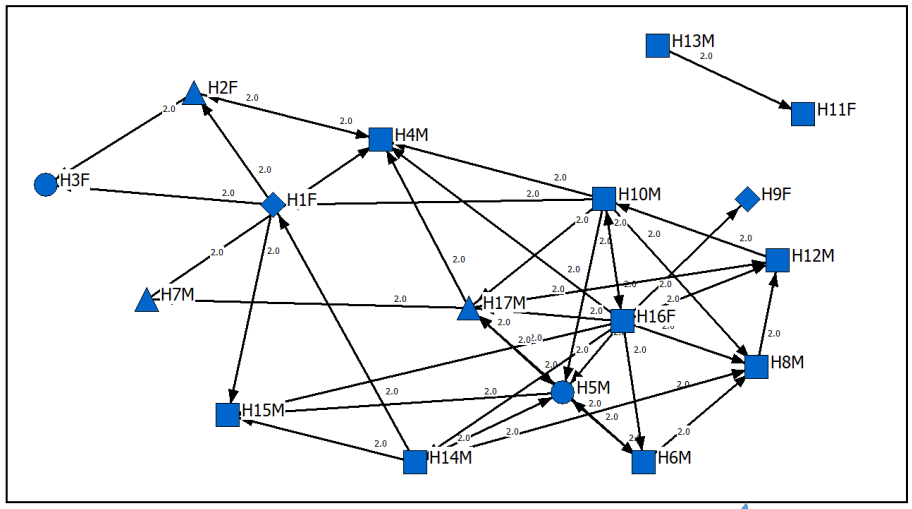
Sociogram representing network interactions for **'frequently does this (more than three**

Appendix L: Sociograms to illustrate frequency of interactions among headteachers for information and advice on how to improve student discipline (Network 3)

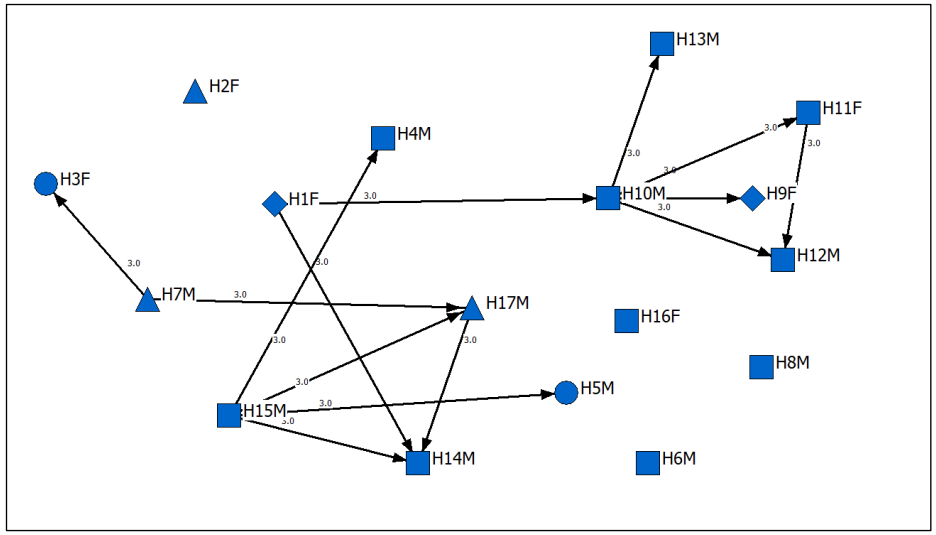




Sociogram representing network interactions for **'rarely does this (only when there is any major issue)'**

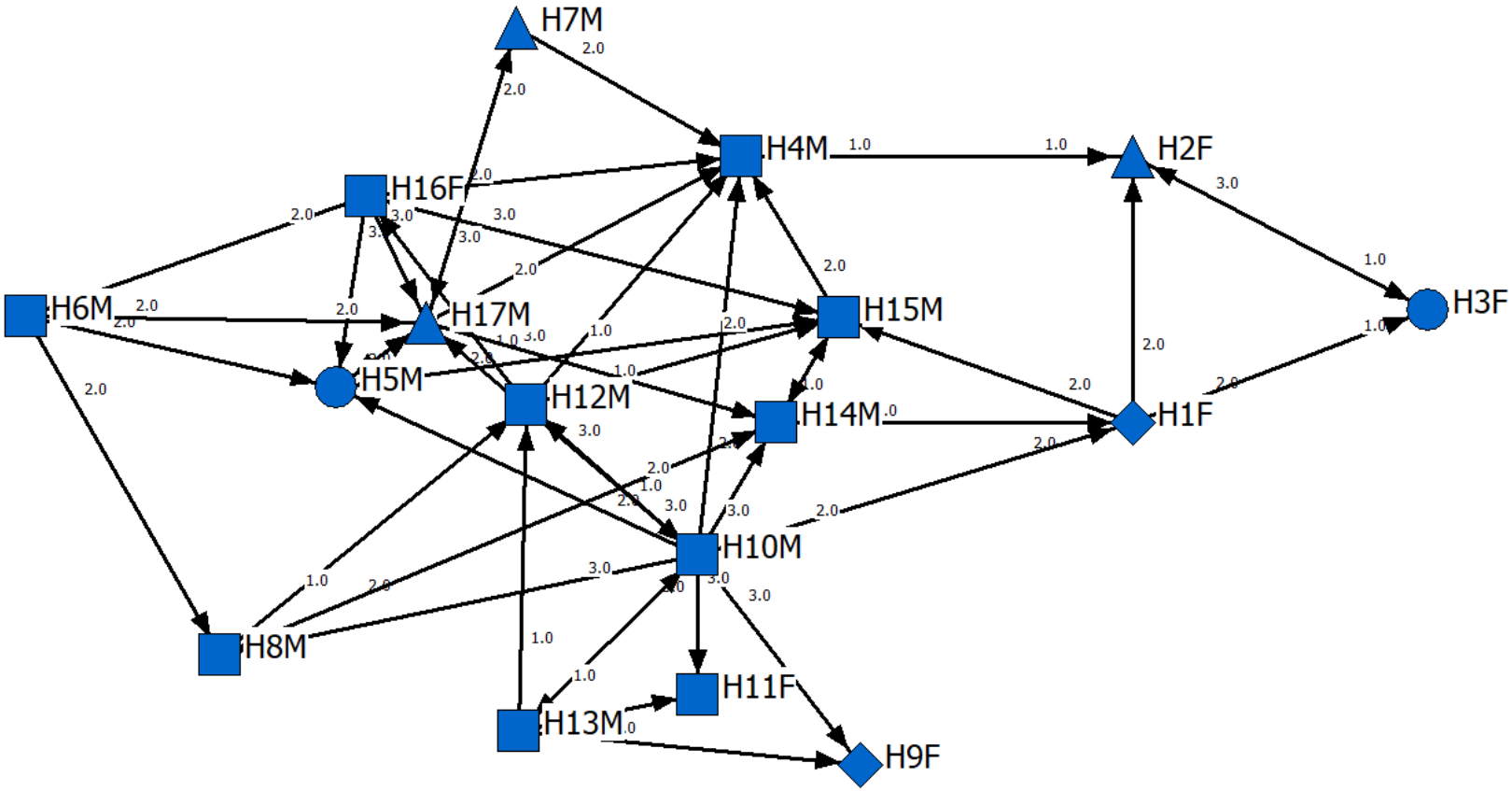


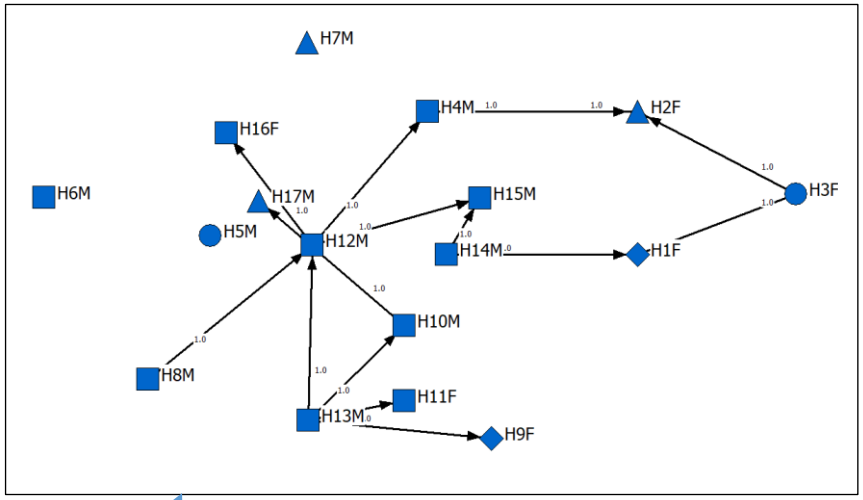
Sociogram representing network interactions for **'moderately does this (once to three times a term)'**



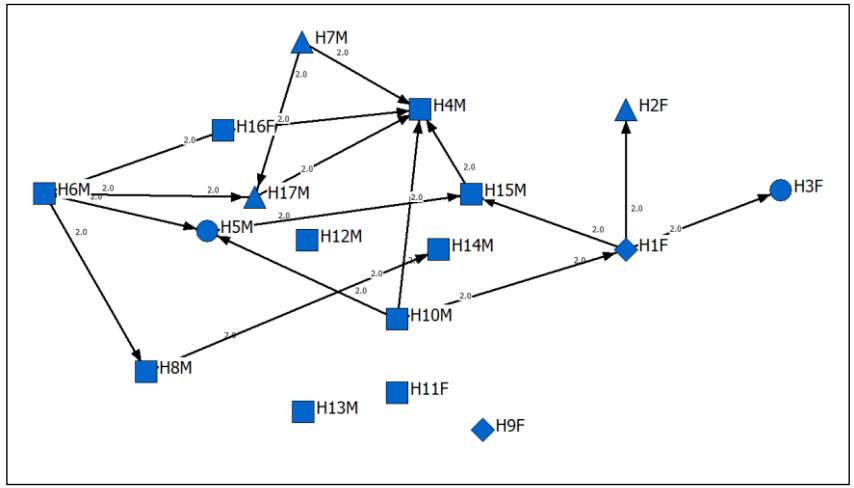
Sociogram representing network interactions for **'frequently does this (more than three times a term)'**

Appendix M: Sociograms to illustrate frequency of interactions among headteachers for information and advice on how to deliver the curriculum effectively (Network 4)

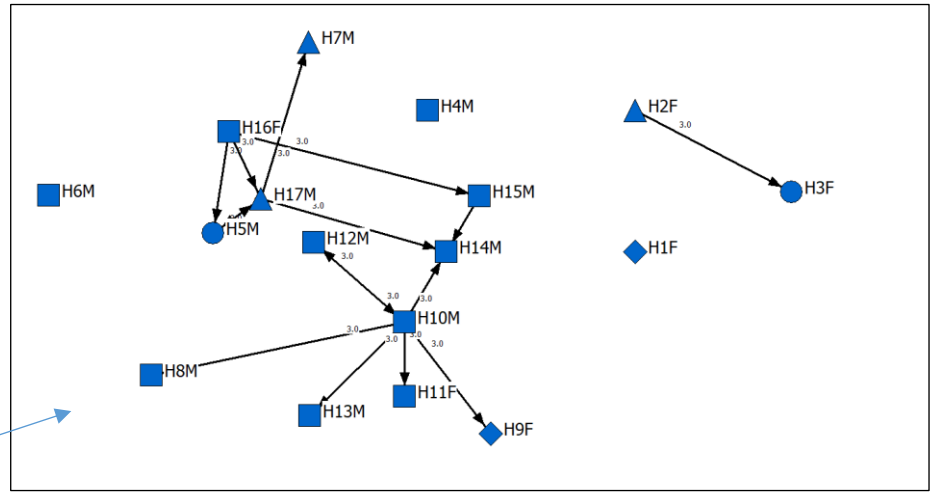




Sociogram representing network interactions for **'rarely does this (only when there is any major issue)'**

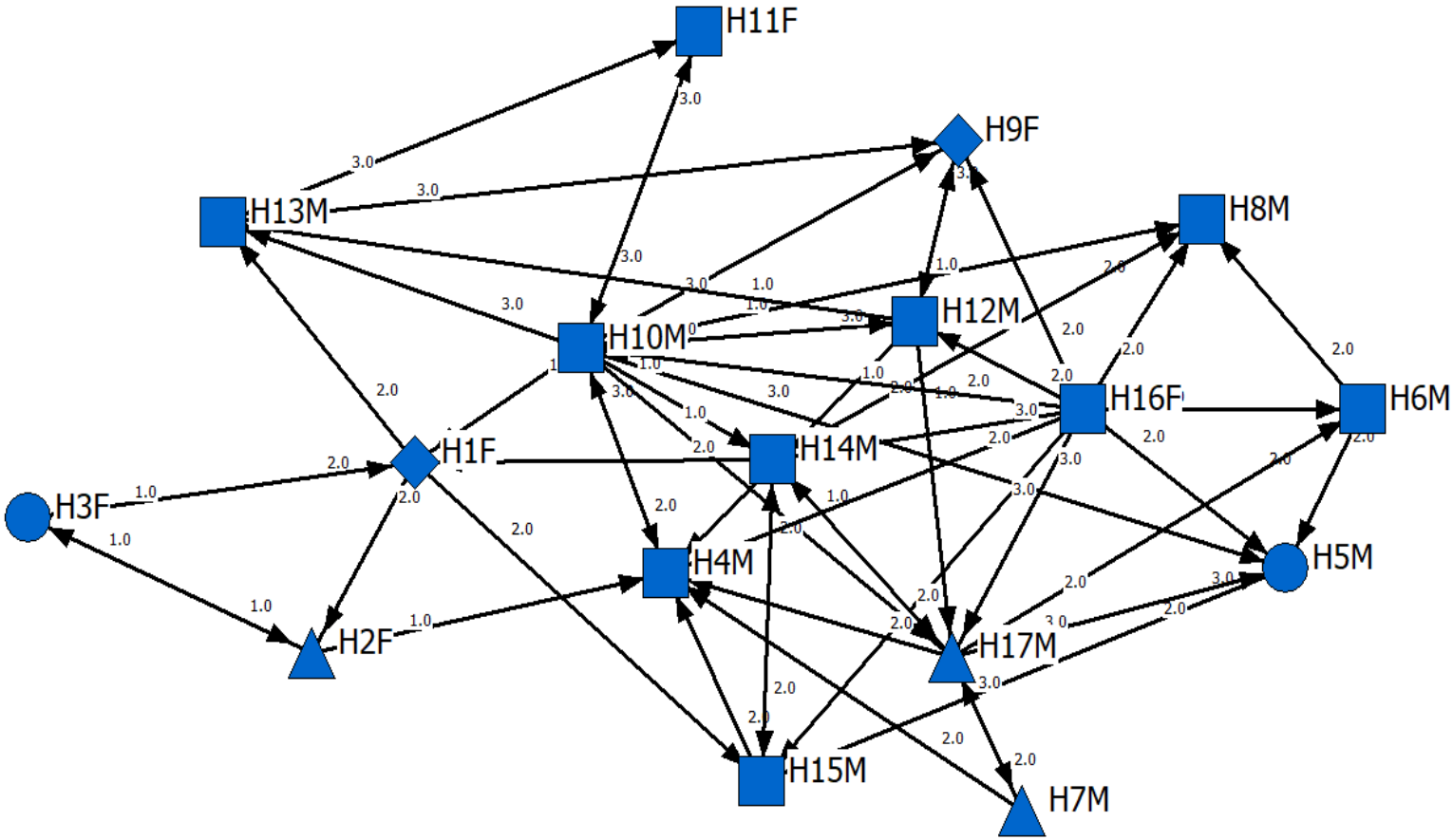


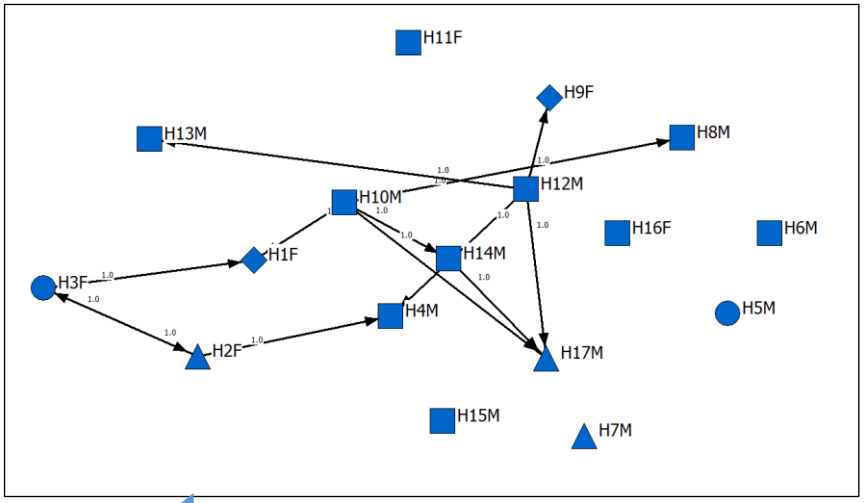
Sociogram representing network interactions for **'moderately does this (once to three times a term)'**



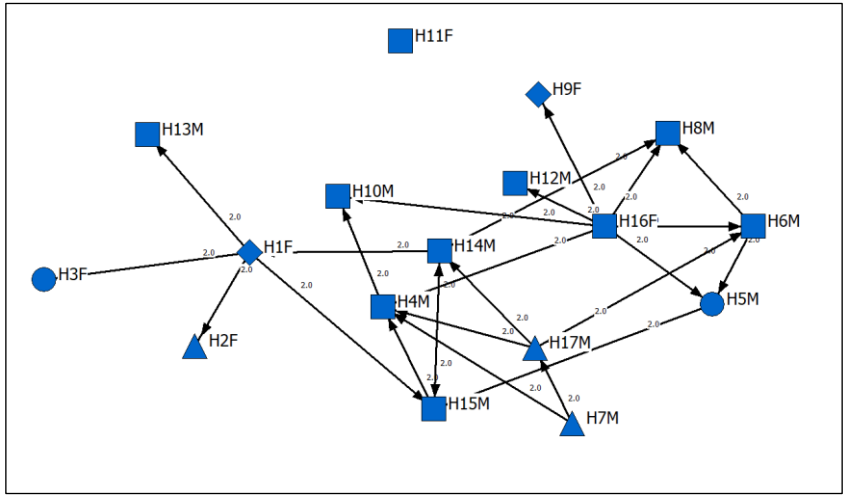
Sociogram representing network interactions for **'frequently does this (more than three times a term)'**

Appendix N: Sociograms to illustrate frequency of interactions among headteachers for information and advice on career progression (Network 5)

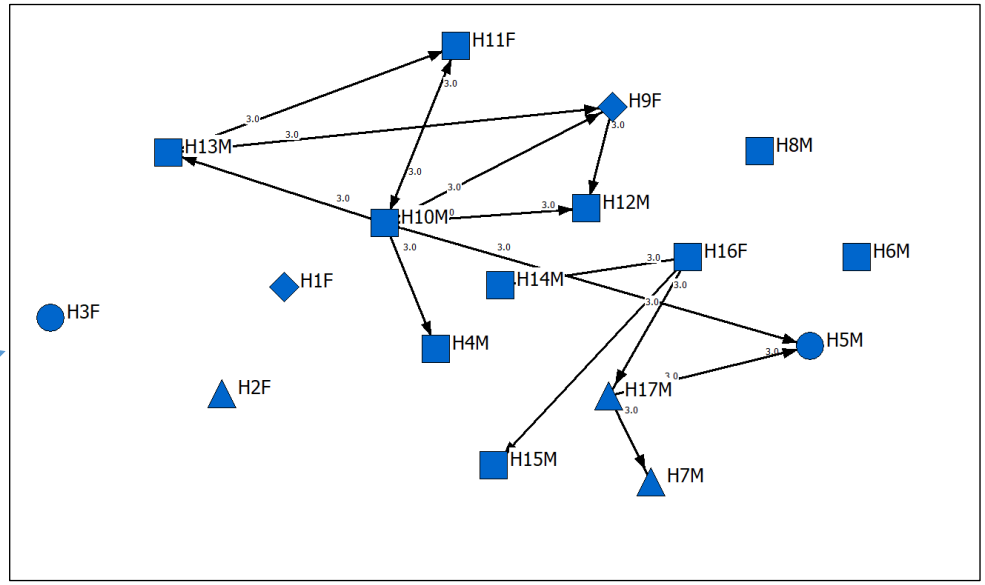




Sociogram representing network interactions for **'rarely does this (only when there is any major issue)'**



Sociogram representing network interactions for **'moderately does this (once to three times a term)'**



Sociogram representing network interactions for **'frequently does this (more than three times a term)'**

Appendix O: Clique membership for all five information and advice networks

Table O1: Clique membership for information and advice on improving teaching and learning (Network 1)

No.	Clique
1	[H5M, H10M, H14M, H16F, H17M]
2	[H8M, H10M, H14M, H16F]
3	[H9F, H10M, H12M, H16F]
4	[H8M, H10M, H12M, H16F]
5	[H4M, H10M, H16F, H17M]
6	[H1F, H10M, H14M]
7	[H10M, H11F, H12M, H13M]
8	[H9F, H10M, H12M, H13M]
9	[H1F, H2F, H3F]
10	[H5M, H6M, H16F, H17M]
11	[H6M, H8M, H16F]
12	[H4M, H7M, H17M]
13	[H5M, H14M, H15M, H16F, H17M]
14	[H1F, H14M, H15M]
15	[H4M, H15M, H16F, H17M]

Table O2: Clique membership for information and advice on how to help ineffective teachers improve (Network 2)

No.	Clique
1	[H5M, H10M, H14M, H16F, H17M]
2	[H4M, H5M, H10M, H16F, H17M]
3	[H8M, H10M, H14M, H16F]
4	[H9F, H10M, H16F]
5	[H10M, H11F, H13M, H16F]
6	[H5M, H6M, H14M, H16F, H17M]
7	[H6M, H8M, H14M, H16F]
8	[H4M, H5M, H15M, H16F, H17M]
9	[H5M, H14M, H15M, H16F, H17M]
10	[H1F, H2F, H3F]
11	[H4M, H7M, H17M]
12	[H9F, H10M, H12M]
13	[H10M, H11F, H12M]
14	[H10M, H12M, H17M]
15	[H12M, H15M, H17M]
16	[H1F, H10M, H14M]
17	[H1F, H14M, H15M]

Table O3: Clique membership for information and advice on how to improve student discipline (Network 3)

No.	Clique
1	[H10M, H12M, H16F, H17M]
2	[H4M, H10M, H16F, H17M]
3	[H5M, H10M, H16F, H17M]
4	[H8M, H10M, H12M, H16F]
5	[H9F, H10M, H16F]
6	[H9F H10M, H11F]
7	[H10M, H11F, H12M]
8	[H10M, H11F, H13M]
9	[H1F, H2F, H3F]
10	[H5M, H6M, H16F, H17M]
11	[H6M, H8M, H16F]
12	[H4M, H7M, H17M]
13	[H5M, H14M, H15M, H16F, H17M]
14	[H1F, H14M, H15M]
15	[H8M, H14M, H16F]
16	[H4M, H15M, H16F, H17M]

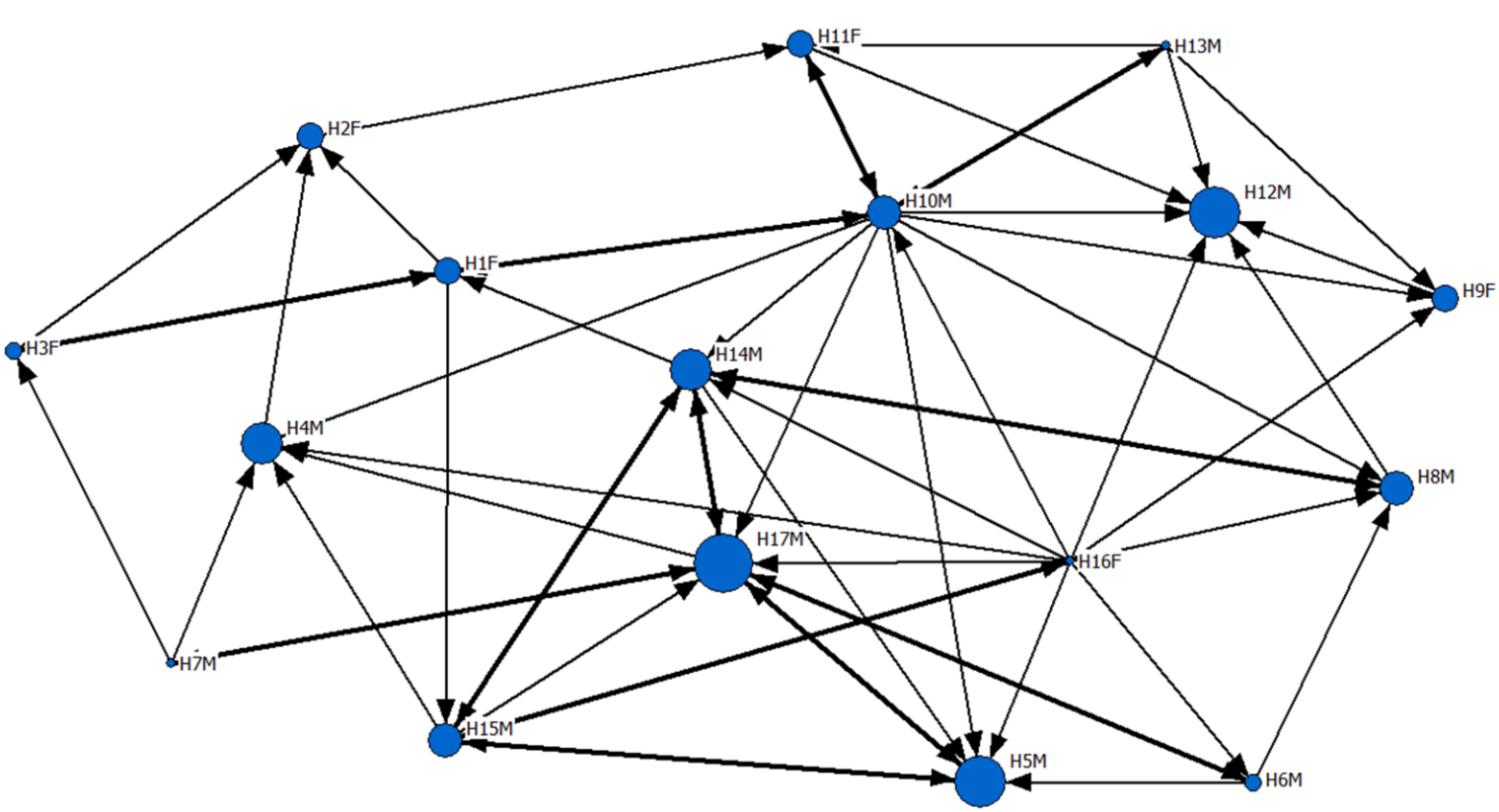
Table O4: Clique membership for information and advice on how to deliver the curriculum effectively (Network 4)

No.	Clique
1	[H8M, H10M, H12M]
2	[H4M, H10M, H12M]
3	[H10M, H12M, H13M]
4	[H5M, H10M, H17M]
5	[H9F, H10M, H13M]
6	[H1F, H10M, H14M]
7	[H10M, H11F, H13M]
8	[H8M, H10M, H14M]
9	[H10M, H14M, H17M]
10	[H4M, H10M, H17M]
11	[H1F, H2F, H3F]
12	[H5M, H6M, H16F, H17M]
13	[H4M, H7M, H17M]
14	[H4M, H12M, H15M, H16F]
15	[H5M, H15M, H16F]
16	[H1F, H14M, H15M]
17	[H4M, H16F, H17M]

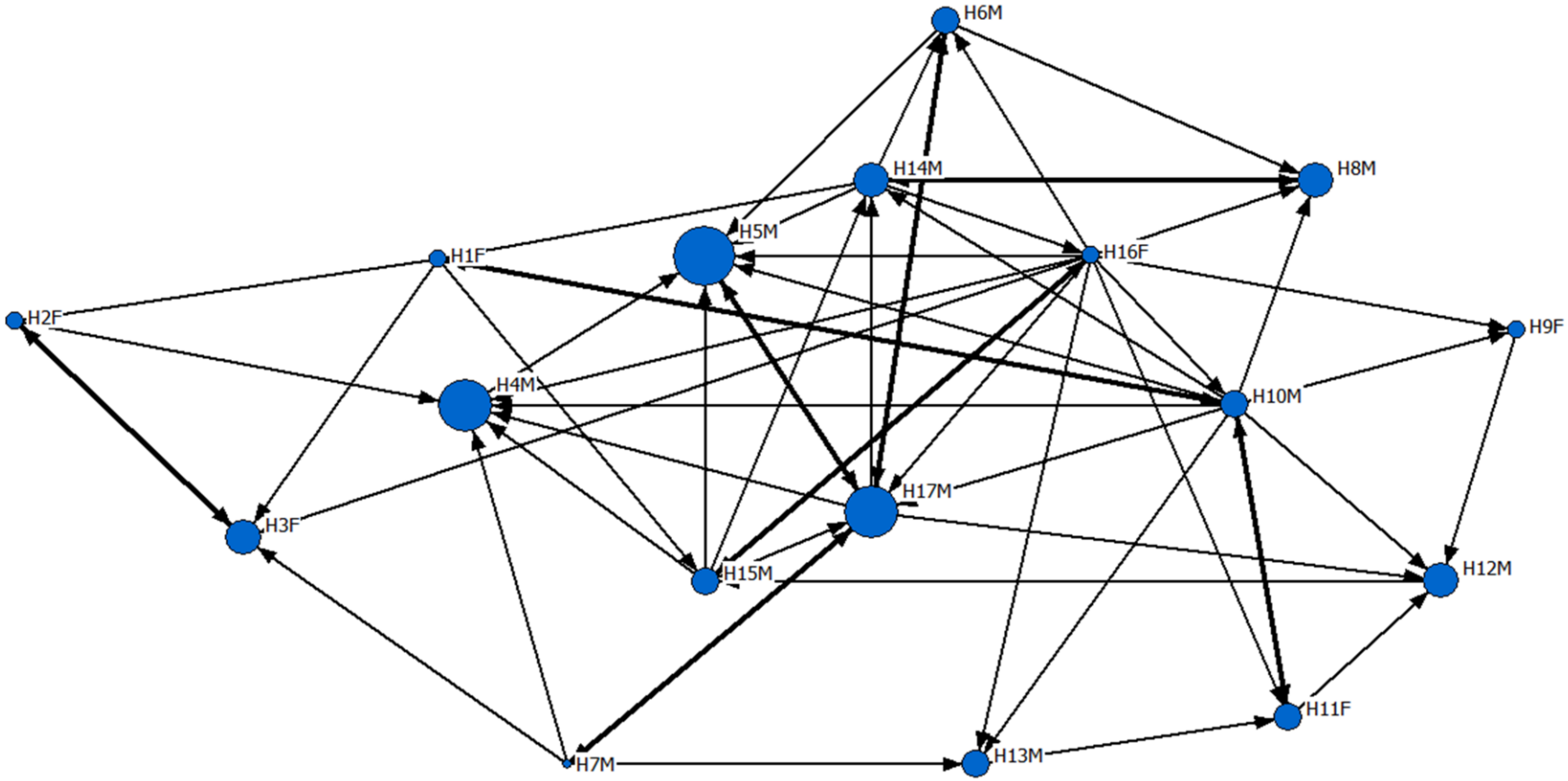
Table O5: Clique membership for information and advice on career progression (Network 5)

No.	Clique
1	[H4M, H10M, H12M, H16F, H17M]
2	[H10M, H14M, H16F, H17M]
3	[H5M, H10M, H16F, H17M]
4	[H8M, H10M, H14M, H16F]
5	[H9F, H10M, H12M, H16F]
6	[H1F, H10M, H13M]
7	[H1F, H10M, H14M]
8	[H10M, H11F, H13M]
9	[H9F, H10M, H12M, H13M]
10	[H1F, H2F, H3F]
11	[H5M, H6M, H16F, H17M]
12	[H6M, H8M, H16F]
13	[H4M, H7M, H17M]
14	[H14M, H15M, H16F]
15	[H4M, H15M, H16F]
16	[H5M, H15M, H16F]
17	[H1F, H14M, H15M]

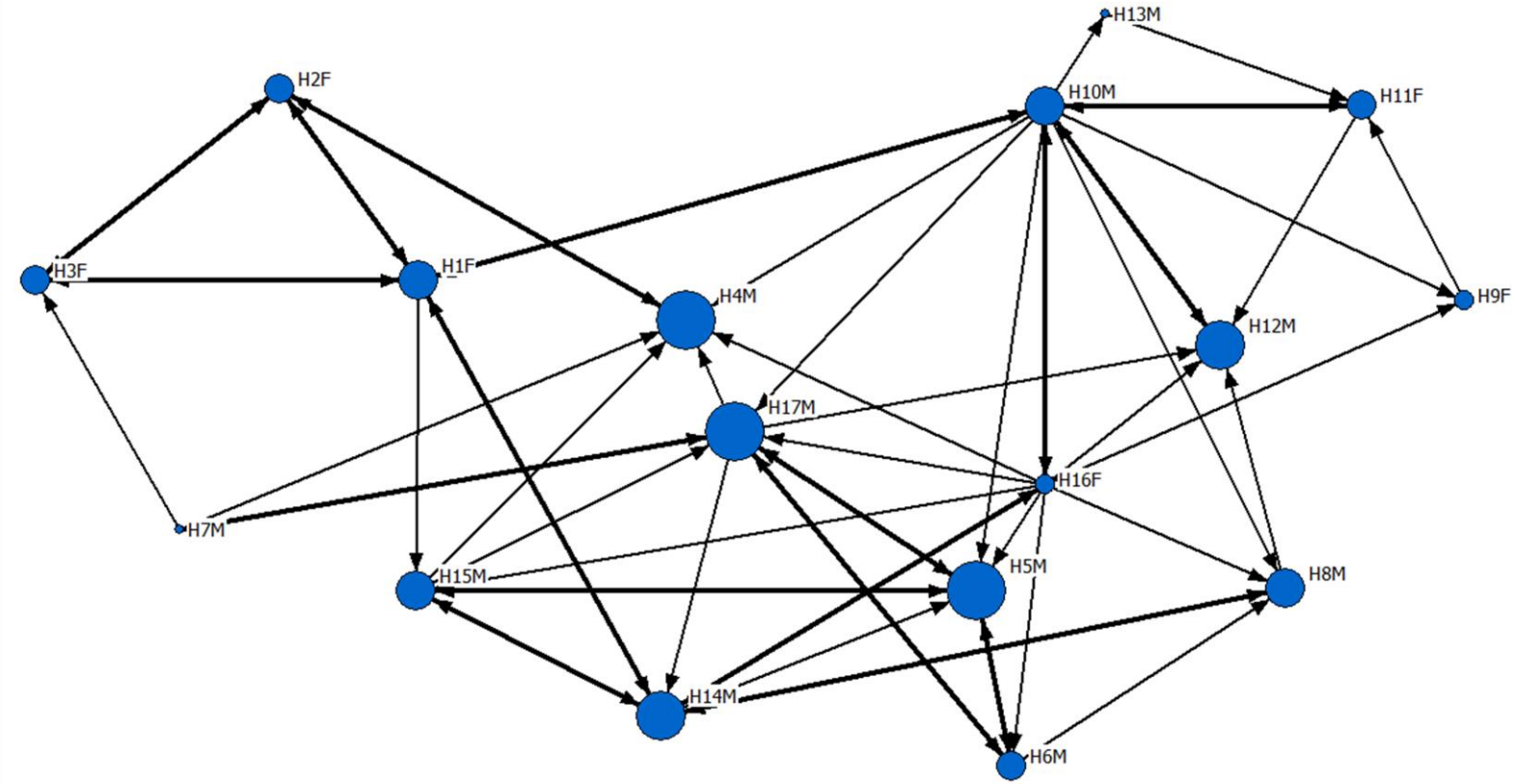
Appendix P: Sociograms to illustrate degree centrality for all five types of information and professional advice (sized by highest indegree centrality)



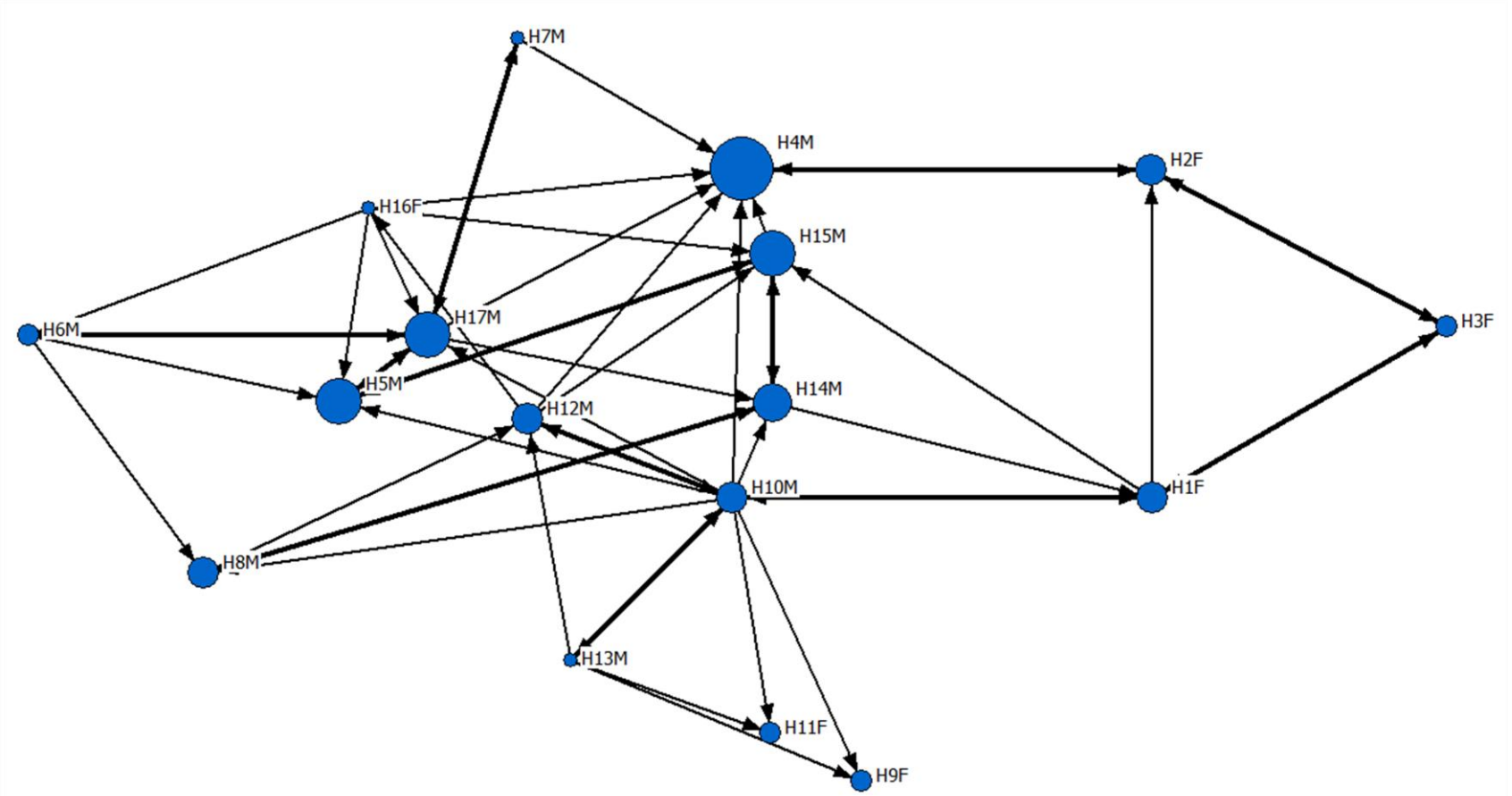
Sociogram P1: – Who do you go to for information and advice on how to improve teaching and learning? (Network 1)



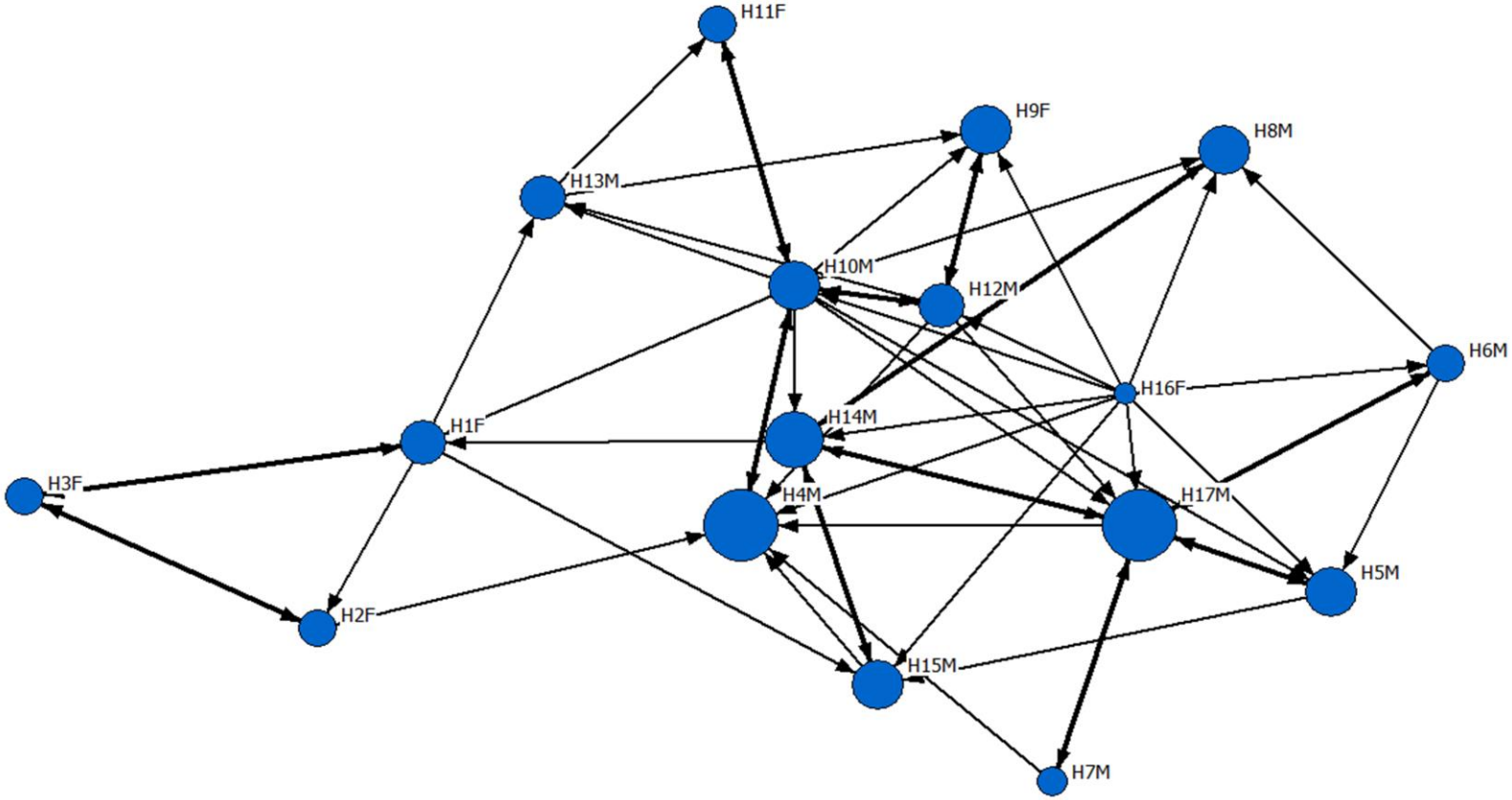
Sociogram P2: Who do you go to for information and advice on how to help ineffective teachers improve? (Network 2)



Sociogram P3: Who do you go to for information and advice on how to improve student discipline? (Network 3)



Sociogram P4: Who do you go to for information and advice on how to deliver the curriculum effectively? (Network 4)



Sociogram P5: Who do you go to for information and advice on career development and progression? (Network 5)