Middle Leadership Roles in Scottish Schools

Report on the results of the MLRQ-SE survey for Education Scotland

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1. Introduction

The important functions middle leaders play in schools has been recognised in the Scottish education system for some time (Forde, Hamilton, Ni Bhroithe, Hihil & Rooney, 2019). In recent years the professional development of middle leaders has been an increasing priority for Education Scotland, largely managed through the Professional Learning and Leadership Directorate (PLL). Since 2018 the PLL have been implementing a professional development program, informed in part, by the Middle Leadership in Schools (MLiS) model proposed by De Nobile (2018). The MLiS model identified six potential role categories for middle leaders in primary or secondary schools, as well as possible 'inputs' that may influence the success of middle leadership and 'outputs' that represent the possible results of middle leaders carrying out their various roles.

Whilst the model was based on a large body of previous research and scholarship, it was, nevertheless, only a theoretical model. Applying the model in research to investigate the salience of constructs is needed in order to determine how well the theory relates to experienced reality of middle leadership (De Nobile, 2019). With such a goal in mind permission was obtained from Education Scotland to conduct an investigation into middle leadership roles. The attention to roles, as theorised in the MLiS model, was deliberate as this was also where the professional development program being conducted by the PLL was focussed.

The purpose of this report is to provide Education Scotland with initial research findings from the Middle Leadership Roles in Scottish Schools survey. The survey was conducted for two reasons. First, the data would provide information about the roles middle leaders play in Scottish schools. The six roles identified in the MLiS model would be measured by the survey, but participants would also be able to nominate possible other roles they perform. Second, the data could be used to 'test' the MLiS model in relation to roles. This would be achieved non-empirically through a-priori cluster data presented here, as well as through later empirical work to be published in academic journals at a later stage.

This report continues with a description of the method, followed by an account of the results. The findings are discussed and recommendations made in relation to professional learning and career development for middle leaders. The conclusion to the report sums up the main findings and suggests future directions for research. This report also contains an appendix at the end, which provides raw quantitative data from the survey.

It is important to note that this is not research commissioned by Education Scotland. The author would like to sincerely thank Education Scotland for the chance to conduct research in its school system and for allowing use of the data to be shared so that it may contribute to a larger, now international, research agenda.

2. Method

Given the purposes of the investigation, a research design focussed on measurement of certain variables was required. A cross-sectional, questionnaire-based, survey research design was employed in order to generate data pertaining to specific variables or constructs (Gay, Mills & Airasian, 2009). Quantitative data would be used to measure constructs relating to the MLiS roles, while qualitative data would also be obtained to account for the possibility of other roles not anticipated by the MLiS model. The investigation was, therefore, also underpinned by mixed method data collection (Johnson & Christensen, 2012).

2.1. Participants

All staff members in formal middle leadership positions in primary and secondary schools of Education Scotland were invited to participate in the survey via email and through PLL professional development programs. The survey was administered from the Education Scotland website via a Formic data collection system. There were at the time more than 7100 middle leaders working in schools of Education Scotland and all of them were invited to participate. The survey commenced in early November 2019 and closed at the end of February 2020. Five hundred and forty-three usable surveys were returned.

Demographic details of the participants are presented in Table 1 below. Almost three quarters of the participants were female (73.3%) and just over a quarter were male (25.7%). Most of these middle leaders were aged between 31 and 50 years (71.5%). Almost half of the participants had between 10 and 20 years of experience in schools. However, nearly a fifth of these middle leaders were in their first 10 years of service. As might be expected, the smallest percentage of participants was those with more than 40 years of service. Importantly, the overwhelming majority of participants (89.5%) had served in their middle leadership positions for 1 year or more, with almost half having served in their position for between 1 and 5 years. This range of experience provided greater confidence that responses to survey questions would be grounded in actual experiences (Johnson & Christensen, 2012).

In terms of specific formal middle leadership positions there was quite a variety represented. More than half of the participants were Principal Teachers (n = 305, 56.1%). A small number of these were acting positions (n = 22). The next largest sampling by position was Deputy Heads (n = 70, 12.9%). A small number of these people were also acting (n = 10). Faculty Heads were the next highest category (n = 50, 9.2%) with a small number acting in that position (n = 3). The next most populous groups were the non-faculty Heads (n = 45, 8.3%) and curriculum leaders (n = 24, 4.4%). Included in the latter category was a 'curriculum officer'. Other formal positions included classroom teachers assumed to have responsibilities that were not stated (n = 8), Lead Teachers (n = 6), Coordinators (n = 6), Guidance and Pastoral leaders (n = 6), leaders or managers of Early Learning (n = 4), Head Teachers (n = 3), Directors (n = 2) and Coaches (n = 2). A small number of participants (n = 10) did not state their formal position.

Table 1 Demographic details of participants

Gender	n	%
Male	139	25.7
Female	396	73.3
Other	2	0.4
Unstated	3	0.6
Age	**n**	**%**
20 - 30	53	9.8
31 - 40	209	38.6
41 - 50	178	32.9
51 - 60	92	17.0
61+	9	1.7
Experience	**n**	**%**
0 - 9	98	18.1
10 - 19	260	48.1
20 - 29	138	25.6
30 - 39	39	7.2
40+	5	0.9
Time in position	**n**	**%**
< 1	57	10.6
1 - 5	259	48.0
6 - 10	109	20.2
10 - 15	62	11.5
16+	53	9.8

2.2. Instrument

The Middle Leadership Roles in Scottish Schools survey was an online questionnaire consisting of four sections. The first section comprised questions about participant demographics, including gender, age, experience working in schools, their formal middle leadership position nomenclature and the length of experience in that position.

The second section comprised the Middle Leadership Roles Questionnaire – School Edition (MLRQ-SE) developed by De Nobile (2016) adapted for Scottish school contexts. The MLRQ-SE is an instrument designed to measure six specific middle leadership role categories reflective of those proposed in the MLiS model (De Nobile, 2019). Each theorised role category (student focussed, administrative, organisational, supervisory, staff development and strategic) is represented by six items depicting various tasks associated with each role. Participants were asked to rate the extent to which they engaged in tasks described in each item on a scale from 1 (Not at all) through to 5 (Very frequently).

The third section of the survey comprised six items where participants were asked to rate the importance of each role category from 1 (least important) to 5 (most important). Each item

was a broad description of the given role category. The fourth section comprised two open ended questions. For the first question participants were asked to list any tasks, duties or roles not apparent in the 36 item MLRQ-SE. For the second question participants were invited to make any other comments they wished about the roles they perform at their current school.

2.3. Data analysis

Middle leadership roles were measured by clustering items representing each role category as directed in De Nobile (2016). This is a form of a-priori score calculation that assumes items will cluster around one another when the structures of scores for an instrument are compared (Ferrendo & Lorenzo-Seva, 2019; Howell, 2007). The cluster means would represent a (non-empirical) measure of each middle leadership role. The six items about role importance were analysed by direct comparison of their means. These were also compared to the cluster means for the six role categories in order to determine relationships between role engagement and role importance.

Data from the two open ended items were coded thematically and emergent themes tallied. Comments that reflected tasks or responsibilities already accounted for in the six role categories were excluded for this report, but may be used to inform future revisions of the MLRQ-SE in future research.

3. Results

3.1. Engagement in middle leadership roles

Items representing middle leadership roles as theorised by the MLiS model were clustered a priori and means calculated for these. In the sections below each role is briefly described and the data presented in tables containing the items in each cluster as well as the cluster mean.

3.1.1. Student-Focussed role

The Student-Focussed role concerns the ways middle leaders deal with student issues. These include behaviour, academic progress, subject choices, health and welfare and home-school liaison. The results are presented in Table 2. As one might expect, participants reported being most engaged in helping students generally and dealing with behaviour problems. Within this role participants were least engaged with student personal issues.

Table 2 Means for Student-Focussed role

Item	Mean
Helping students	4.68
Meeting with students about academic issues	3.94
Meeting with students about personal issues	3.54
Dealing with student behaviour	4.36
Assisting students with their academic issues	4.00
Liaison between student's home and school	3.76
Cluster mean for Student-focussed role	**4.05**

3.1.2. Administrative role

The Administrative role is about the procedures middle leaders put in place to manage information and resources. Tasks within this role range from inventory maintenance and other record keeping through to ordering, purchasing and other forms of resource management. The results are shown in Table 3. The tasks participants were most frequently engaged in for this role were record keeping related to students. Middle leaders in this sample were much less engaged in resource management.

Table 3 Means for Administrative role

Item	Mean
Creation and/or maintenance of records relating to student progress	4.30
Keeping records of student behaviour, academic progress or other student data	4.40
Keeping inventory of resources and/or equipment	3.22
Creation and/or maintenance of records relating to student behaviour/ discipline	3.81
Creation/modification of forms, proformas and other admin tools	3.64
Arranging orders and purchases	3.21
Cluster mean for Student-focussed role	**3.76**

3.1.3. Organisational role

The Organisational role relates to the organisation of people and events. In particular this role sees middle leaders negotiating rosters, organising timetables and preparing for meetings. They are also managing curriculum development with teachers. The results are displayed in Table 4. Implementing curriculum (as opposed to planning it with teachers) was the most prominent task within this role. Organising teams, rosters and events were significant aspects of the Organisational role. The participants were least engaged in timetabling of relieving or supply staff.

Table 4 Means for Organisational role

Item	Mean
Organising rosters	3.49
Organising timetables for supply teachers or cover-staff	2.83
Implementing curriculum	4.26
Organising a team or committee	3.95
Organising agendas and itineraries for special days or events	3.49
Planning curriculum with other teachers	3.76
Cluster mean for Student-focussed role	**3.63**

3.1.4. Supervisory role

The Supervisory role concerns the monitoring of staff performance and includes a range of supervision tasks including observing teaching, discussing work performance and providing feedback. This role is evaluative in nature because judgements are being made about the behaviour of others. The results are presented in Table 5. There was no clear prominent task for this role, though general supervision based on student cohorts had the highest mean. Middle leaders in this study were least engaged in observations of teaching and discussions about work performance.

Table 5 Means for Supervisory role

Item	Mean
Supervising staff in a stage, level or grade	3.78
Monitoring the performance of staff	3.43
Supervising staff members	3.33
Discussing aspects of work performance with staff	3.25
Engaging in classroom observations of teachers	3.32
Providing feedback to staff members about work done	3.44
Cluster mean for Student-focussed role	**3.43**

3.1.5. Staff Development role

The Staff Development role describes how middle leaders work to build the capacity of teachers and other staff members. Key aspects of the role include motivating staff to do their best via affirmation and support, being good role models, mentoring colleagues and induction of new staff. The Staff Development role also sees middle leaders conducting professional development of staff members and/or facilitating same. The results for this role cluster are presented in Table 6. Leading staff development efforts and assisting other staff with aspects

of their job were the most frequent tasks reported by the participants. These middle leaders were quite involved with mentoring staff, but not as involved in the induction of new staff.

Table 6 Means for Staff Development role

Item	Mean
Leading staff development	3.94
Demonstrating procedures and/or techniques for other staff	3.52
Mentoring staff members	3.60
Facilitating professional development for staff	3.45
Helping staff members with aspects of their work	3.80
Involvement in staff induction	2.96
Cluster mean for Student-focussed role	**3.55**

3.1.6. Strategic role

The Strategic role concerns goal setting and vision formation for specific responsibilities associated with the leadership position, such as a subject area or across-school program. It is through this role that leadership behaviour (as opposed to management behaviour) is most frequently seen because of the need to achieve staff member cooperation. Key tasks such as policy development and leading teaching innovations or curriculum change depend on the gaining of cooperation of others, and this implies the use of influence. The results are displayed in Table 7. Within this role middle leaders reported establishing goals and leading innovation and change as the most frequent activities. They were least engaged in whole school policy change.

Table 7 Means for Strategic role

Item	Mean
Establishing goals for area of responsibility	3.92
Creating or changing whole-school policy	3.25
Leading innovation and change	3.94
Establishing a vision for area of responsibility	3.79
Heading whole-school policy change	2.83
Heading teams or committees	3.61
Cluster mean for Student-focussed role	**3.56**

The means for each of the roles (as clusters of scores) are taken from the tables above and compared in Figure 1 below. It is clear that the middle leaders participating in this study were engaged mostly in the Student-Focussed role. They were also engaged in significant levels of work in the Administrative role. They were engaged to a similar extent in tasks relating to the Organisational, Staff Development and Strategic roles. These middle leaders reported being lest engaged in the Supervisory role.
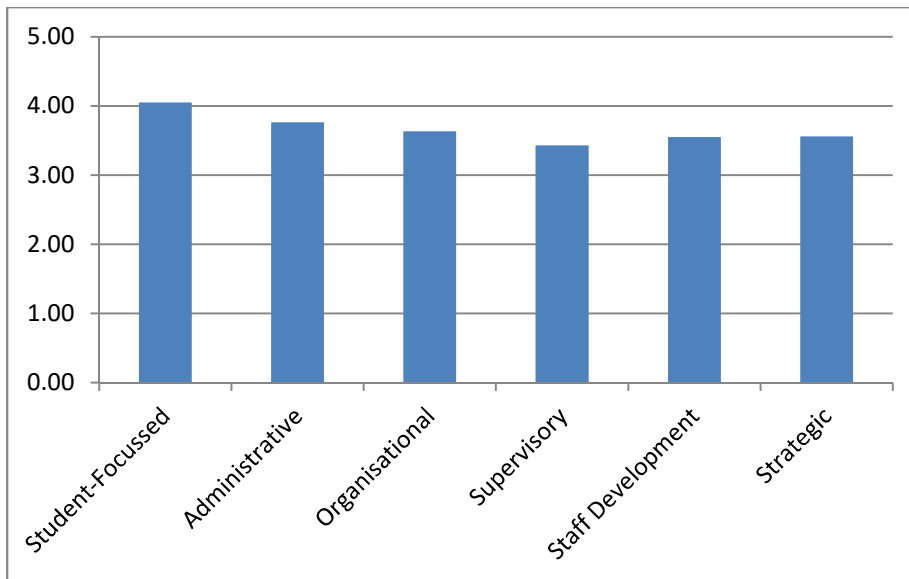
Figure 1. Means of the role categories compared

3.2. Importance of middle leadership roles

Whilst it is important to know the extent to which middle leaders were engaged in various roles, assessing the importance they place on each role is also worthwhile. This allows us to ascertain how the reality of day to day work in the formal position relates to what these middle leaders believe they should be doing. The means of the perceived importance of each role are presented along with the item wording in Table 8 below.

Table 8 Participant perceived importance of their middle leadership roles

Role / Item	Mean
Student-Focussed role: Dealing with students and their academic, social or other issues	4.64
Administrative role: Dealing with administration issues such as record keeping and resource maintenance	3.37
Organisational role: Organising people and events (such as rosters, timetables and meeting agendas)	3.50
Supervisory role: Monitoring or supervising staff members (including program supervision and feedback)	3.61
Staff Development role: Involvement in the professional development of staff (including demonstrating, mentoring and induction)	4.00
Strategic role: Leading change or innovation (including the groups that drive this) and developing a vision for area of responsibility	4.18

The middle leaders participating in this study identified the Student-Focussed role as the most important, followed closely by the Strategic and Staff Development roles. There was a clear division between this 'top three' and the other roles in terms of importance. It seems that, for

these participants, the Administrative, Organisational and Supervisory roles were not as important as the others. The mean for Administrative role was particularly low.

When these means were compared with the means for engagement in the roles some stark differences emerged. The comparison is shown by the line graph in Figure 2. The blue line shows means for role engagement as reported in Section 3.1. The red line shows the means for perceived role importance as reported in Section 3.2. The space in between the two lines could be construed, roughly, as the difference between what middle leaders do and what they believe they should do in terms of roles.
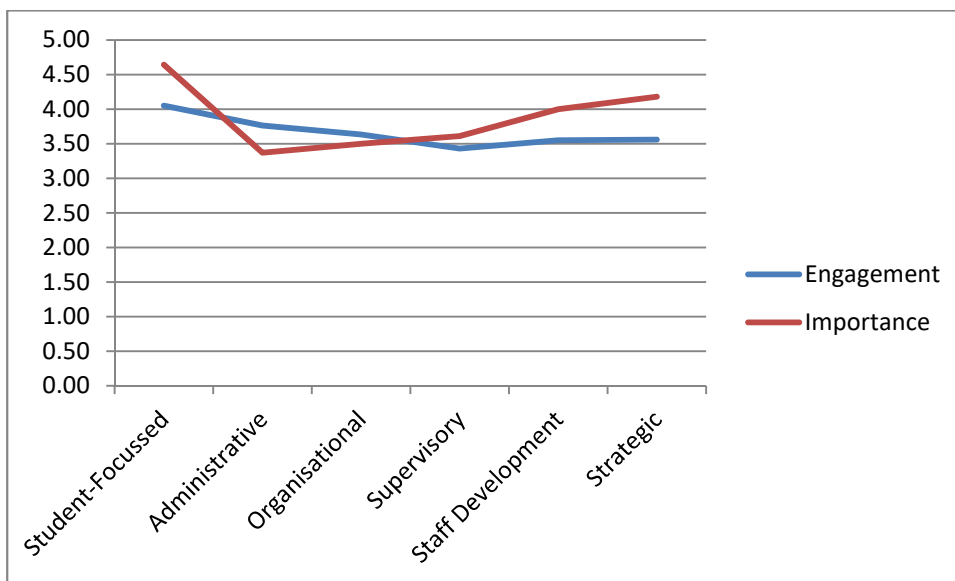

Figure 2. Role engagement compared with role importance

Given the core business of schools, it is reassuring that the means for Student Focussed role were both highest. However, the graph appears to indicate that these middle leaders might feel they are more engaged in tasks they feel are less important (such as those within the Administrative and Organisational roles), and less engaged in tasks they feel are more important than administration and organisation (such as those associated with the Supervisory, Staff Development and Strategic roles). The Strategic and Staff Development roles were towards the bottom end of the range of means for role engagement (M = 3.56 and 3.55), but rank second and third respectively (M = 4.14 and 4.00) in terms of perceived importance.

3.3. Other possible roles

There were 262 responses to the open question about tasks not accounted for in the MLRQ items. These were content analysed to identify theme categories that reflected tasks that were truly not related to the six MLiS roles. Five potential additional roles emerged from these analyses. They are summarised in Table 9 and described below.

Table 9 Other possible roles

Role category	Tally
External liaison	59
Extra curricular	25
Parent liaison	15
Staff Wellbeing	14
Communication	7

The 'External liaison' role was by far the most mentioned, with 59 participants describing instances where they interact with third parties such as itinerant specialists and social workers, facilitate work experience and interact with university or college students for their practicums. The 'Extra-curricular' role concerned instances when middle leaders were organising or otherwise involved with a range of outside events or internal activities not directly related to the curriculum. These tasks included organising interest groups such as chess clubs, involvement in concert rehearsals and school competitions. The 'Parent-liaison role' involved tasks quite different to those related to the Student-focussed role described earlier. For this role middle leaders were participating in parent council meetings, working with parent volunteers, facilitating parent workshops and other like tasks.

A number of participants explicitly mentioned that they look after staff physical and mental health issues, which underpinned the 'Staff wellbeing' role. The 'Communication' role emerged from a small number of participants who mentioned their work on school newsletters, managing information on school websites or contributing to school social media accounts such as Twitter.

3.4. Other issues

There were 160 comments in response to the final question inviting participants to make any other comments about their middle leadership roles. These were also content analysed for emerging themes. Two types of comments were immediately identified: positive aspects of roles and negative aspects. The positives were somewhat outweighed by the negatives. Three categories of positive aspects of middle leadership roles emerged. These are summarised and tallied in Table 10 below.

Table 10 Positive aspects of middle leadership roles identified from open question responses

Issue category	Tally
Opportunity to develop capabilities	7
Impact on student outcomes and teacher performance	3
Ability to relate to the needs of staff and the vision of senior leadership	2

The issues categorised as negative aspects of middle leadership roles referred to certain roles such as Administration and Student-Focussed, as well as their roles as part of the remit of their formal positions collectively. These are presented in Table 11. The most frequently occurring comments related to the lack of time, which included the difficulty in balancing the

various tasks needed to be performed and problems with work – life balance caused by excessive workload.

The second issue to emerge concerned a perceived overemphasis on administrative tasks, with several respondents observing that the amount of administration and "paperwork" involved in their roles had increased over time. This was closely followed by a category of response describing how some tasks these middle leaders perform are outside the remit of their formal position. The fourth major category concerned interruptions to key tasks due to unplanned events or emergencies. Several middle leaders referred to this as "firefighting".

Table 11 Negative aspects of middle leadership roles identified from open question responses

Issue category	Tally
Not enough time to perform the roles	53
Too much administrative work	16
Tasks or roles performed/expected that are not in the remit of the formal position	15
Roles/Tasks interrupted by unplanned occurrences	14
Middle leader roles need to be better defined	8
Problematic relationships with senior leadership	7
A felt lack of authority or power	3
The work of pastoral leadership not properly recognised	2
Feeling of being 'stuck in the middle' between teachers and senior leaders	2
Effects on mental health	2

Other themes that emerged from the analyses of responses were mentioned by less than 10 respondents and these are also included in Table 11. One-off responses were not included here as they did nor comprise a coherent theme involving more than one respondent, which was the basic criterion for theme categorisation in the content analyses (Gay et al., 2009).

4. Discussion and Recommendations

There are three main findings from analyses of the a-priori role clusters. First, all six roles were found to be prominent aspects of work for the participating middle leaders. This was evident in cluster means that were mostly above 3.50. There were no role categories with means below 3.00, suggesting the six roles may be salient ones, and providing initial support for the six roles theorised in the MLiS model.

The second finding was that the extent to which participating middle leaders were engaged in the six roles varied somewhat, with tasks relating to student issues the most prominent. This is a good thing, as it means that middle leaders are likely to be involved in work related to student achievement and wellbeing. Research to date has found limited evidence of the link between middle leader work and student outcomes (Harris, 2014; Strike, Fitzsimmons & Meyer, 2019), though the research that does exist suggests middle leaders can have impact here (Dinham, 2007). This is an area that could be more explicitly investigated in the Scottish context.

The middle leaders who participated in this study were also more engaged in managerial roles overall compared to the more leadership-oriented supervisory, staff development and strategic roles. Though the differences were only slight, the results are corroborated in the open question responses (see below). Participants seemed to be least engaged in supervising teachers. This might be a concern given the prominence of this role category in the extant literature (Busher, Hammersley-Fletcher & Turner, 2007; Fleming, 2014) and the expectations of Scottish educational authorities (General Teaching Council, Scotland, 2012).

The third finding from analyses of the means was that middle leaders were less involved in some tasks within the six roles that would be considered important for teacher performance and school improvement (Danielson, 2007; General Teaching Council, Scotland, 2012; Lipscombe, Grice, Tindall-Ford & De Nobile, 2020). Of particular concern were the low means for induction of new staff (Staff Development role) and leading school policy change (Strategic role). Given middle leaders are often recruited due to their teaching capabilities and experiences of working in schools (Lillejord & Borte, 2020; Strike et al, 2019), there is an opportunity to explore untapped potentials and reduce senior leadership workload by exploring how middle leaders might be more engaged in this work.

The comparison of engagement in roles with perceived importance of roles, suggests that increasing induction and policy responsibilities might be welcomed by these middle leaders. The indication that supervisory, staff development and strategic roles were deemed more important than administrative and organisational work requires further investigation, but it appears that these middle leaders see their job as influencers of teacher capabilities and school development. This is a sentiment that has been captured in other recent research (Grootenboer, 2018; Lillejord & Borte, 2020).

The findings from the open ended questions suggest issues warranting further investigation. These were to do with possible new roles and issues of concern for middle leaders in relation to their roles.

The emergence of an external liaison role was noteworthy due to the number of mentions compared to other possible additional roles. The question of whether this is indeed a seventh middle leadership role category needs to be resolved. On one hand, many respondents referred to interactions with student agencies or itinerant professionals associated with student welfare. This points to the possibility that external liaison might be part of the student focussed role. On the other hand, there was also mention of interactions in relation to university teacher education students and work experience students from other schools as well as other non-welfare based entities. That suggests a separate role category. Although there is some evidence in the literature for such a role (Ashmore & Clay, 2016; Hammersley-Fletcher, 2002), the limited number of responses and the limited detail within many of those prevents a more definitive assertion of an external liaison role being made here. Further investigation would also clarify the salience and nature of extra-curricular, parent liaison and other possible new roles identified in this report.

In relation to other issues identified by the participating middle leaders, it was concerning to note that mentions of negative aspects of the role far outweighed the positives. This is not to say that these middle leaders are dissatisfied with their jobs or experiencing lower commitment to their responsibilities. Indeed the comments suggest they are very committed to middle leadership. The positive aspects mentioned relating to capacity building and student outcomes speak to high levels of commitment and drive, but there were obvious strains apparent.

The issue of time has been identified as a challenge, a source of frustration and a constraint in previous middle leadership research (Fitzgerald, 2009; Irvine & Brundrett, 2016; Lipscombe, Tindall-Ford & Grootenboer, 2020). Lipscombe, Tindall-Ford and Grootenboer found that a lack of systemic time allocation presented a significant limitation to the work of middle leaders engaged in a staff development role aimed at improving teaching practices. These notions were evident in the responses relating to the time to perform roles as well as concern about a proper work-life balance. Given that there was also concern about the amount of administrative work involved in their middle leadership position, there exists an opportunity to ameliorate the time issue by somehow dealing with the administration load. For example, Ridden and De Nobile (2012) describe 'junior leaders' who assist people in formal middle leadership positions that have substantial responsibilities.

The next three concerns of middle leaders were related problems. The occurrence of tasks over or above the actual "remit" (to use the participants' terms) and unplanned occurrences that disrupt planned work and allocated roles point to a need for middle leadership roles to be better defined, and by extension, the roles of middle leaders to be described more specifically. This is not a problem unique to Scottish school middle leaders. There has long been a recognised need to define what middle leaders do in schools with greater clarity (De

Nobile, 2018). The need for an "explicit formal job description" was an issue raised by Lipscombe, Tindall-Ford and Grootenboer's recent Australian study (2020, p.1074).

In light of the findings and the subsequent discussion some recommendations are suggested. These should be read in consideration of the limited size of the sample and the limited qualitative data, and with an eye on processes already in train within Education Scotland and the PLL.

1. The six role model of middle leadership provides a starting point for professional development efforts and recruitment efforts, but other roles should be considered as well.
2. The tasks with the lowest means in each role should provide focus points for consideration and planning of future professional development, especially in the areas of policy development and implementation and induction practices.
3. Possibilities for expansion of the supervisory, staff development and strategic roles should be explored.
4. Related to the above recommendation, possibilities for other (junior or emergent) leadership positions that comprise more administrative and organisational roles should be explored with the goal of reducing middle leader workload and providing further career path options for teachers aspiring to leadership.
5. Professional development that emphasises the positive aspects of middle leadership identified by participants, such as building the capacity of others and contributing to school development/improvement is encouraged.
6. Position descriptions and role requirements of specific formal middle leadership positions should be considered. These should also emphasise the positive aspects of middle leadership roles described above.
7. Further research into the roles ascribed to formal middle leadership positions aimed at a more definitive and comprehensive understanding of what middle leaders do in schools is needed to build on what is already known about their roles as well as better understand the issues and concerns associated with those roles.

5. Conclusion

This report has presented the findings of a study of middle leaders in schools under the jurisdiction of Education Scotland. Six role categories were measured and compared via examination of quantitative data. Additional role categories were suggested through the analysis of qualitative data. Issues relating to middle leadership roles were identified from the qualitative data and discussed. Discussion of the findings concluded with a set of recommendations for consideration by Education Scotland and the PLL.

Like many studies of this type, the one reported here has limitations that should temper any interpretation of the results, reading of the recommendations or future action. The participants involved represent a portion of the total population of middle leaders. The analysis of quantitative data was non-empirical, based on a-priori data clusters, albeit underpinned by a sound theoretical framework. In addition, not all participants contributed responses to open questions so the qualitative data should be considered in that light.

These issues notwithstanding it is hoped that this report will be useful for professional development efforts being planned by the PLL. It is also hoped that this report may be used to inform the ongoing development of middle leadership positions in Education Scotland. Finally, it is hoped that this report will provide a springboard for further investigations and knowledge building regarding the role of middle leaders in schools, especially those aimed at clarifying roles and determining potential impacts of teachers and students.

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Appendix A: Descriptive statistics for all quantitative items

Descriptive Statistics

	N Statistic	Range Statistic	Minimum Statistic	Maximum Statistic	Mean Statistic	Mean Std. Error	Std. Deviation Statistic	Variance Statistic	Skewness Statistic	Skewness Std. Error	Kurtosis Statistic	Kurtosis Std. Error
Gender	540	3.00	1.00	4.00	1.7574	.02041	.47423	.225	-.298	.105	1.722	.210
Age	541	4.00	1.00	5.00	2.6211	.04017	.93425	.873	.219	.105	-.506	.210
Exp	540	4.00	1.00	5.00	2.2463	.03727	.86602	.750	.517	.105	.113	.210
TimeInPos	540	4.00	1.00	5.00	2.6204	.04845	1.12583	1.267	.755	.105	-.264	.210
ML01	541	4.00	1.00	5.00	4.6839	.02649	.61607	.380	-2.207	.105	5.820	.210
ML02	535	4.00	1.00	5.00	3.4860	.05116	1.18325	1.400	-.487	.106	-.529	.211
ML03	536	4.00	1.00	5.00	3.7817	.05167	1.19615	1.431	-.704	.106	-.415	.211
ML04	540	4.00	1.00	5.00	3.9444	.03845	.89353	.798	-.455	.105	-.399	.210
ML05	535	4.00	1.00	5.00	3.9364	.04784	1.10653	1.224	-.831	.106	-.172	.211
ML06	531	4.00	1.00	5.00	3.9209	.04176	.96219	.926	-.747	.106	.119	.212
ML07	538	4.00	1.00	5.00	4.2993	.03853	.89361	.799	-1.379	.105	1.827	.210
ML08	538	4.00	1.00	5.00	4.3959	.03825	.88718	.787	-1.746	.105	3.152	.210
ML09	538	4.00	1.00	5.00	2.8346	.06115	1.41834	2.012	.118	.105	-1.256	.210
ML10	540	4.00	1.00	5.00	3.4278	.05177	1.20311	1.447	-.535	.105	-.527	.210
ML11	537	4.00	1.00	5.00	3.3333	.05355	1.24089	1.540	-.294	.105	-.804	.210
ML12	540	4.00	1.00	5.00	3.2500	.03981	.92507	.856	.006	.105	-.021	.210
ML13	538	4.00	1.00	5.00	3.5242	.03795	.88035	.775	-.082	.105	-.170	.210
ML14	539	4.00	1.00	5.00	3.6011	.04304	.99929	.999	-.359	.105	-.268	.210
ML15	541	4.00	1.00	5.00	3.2163	.05045	1.17355	1.377	-.178	.105	-.769	.210
ML16	538	4.00	1.00	5.00	3.9387	.03889	.90207	.814	-.536	.105	-.203	.210
ML17	533	4.00	1.00	5.00	3.5385	.05399	1.24639	1.553	-.360	.106	-.923	.211
ML18	541	4.00	1.00	5.00	3.8115	.05163	1.20090	1.442	-.760	.105	-.369	.210
ML19	541	4.00	1.00	5.00	4.2643	.03895	.90595	.821	-1.161	.105	.863	.210
ML20	537	4.00	1.00	5.00	3.9497	.04282	.99217	.984	-.831	.105	.328	.210
ML21	537	4.00	1.00	5.00	3.2533	.04866	1.12764	1.272	-.385	.105	-.546	.210
ML22	536	4.00	1.00	5.00	3.7873	.04224	.97803	.957	-.502	.106	-.308	.211
ML23	537	4.000	1.000	5.000	4.36313	.041184	.954360	.911	-1.492	.105	1.526	.210
ML24	539	4.00	1.00	5.00	3.6345	.04846	1.12508	1.266	-.487	.105	-.551	.210
ML25	539	4.00	1.00	5.00	3.2096	.05104	1.18487	1.404	-.176	.105	-.772	.210
ML26	538	4.00	1.00	5.00	3.3234	.04370	1.01362	1.027	-.358	.105	-.130	.210
ML27	541	4.00	1.00	5.00	3.4529	.04227	.98324	.967	-.373	.105	-.034	.210
ML28	537	4.00	1.00	5.00	2.8268	.04828	1.11878	1.252	.057	.105	-.653	.210
ML29	535	4.00	1.00	5.00	3.9944	.04670	1.08011	1.167	-.803	.106	-.213	.211
ML30	538	4.00	1.00	5.00	3.4888	.04513	1.04679	1.096	-.278	.105	-.519	.210
ML31	536	4.00	1.00	5.00	3.7575	.04999	1.15724	1.339	-.701	.106	-.294	.211
ML32	539	4.00	1.00	5.00	3.4360	.04436	1.02980	1.060	-.468	.105	-.148	.210
ML33	540	4.00	1.00	5.00	3.8037	.03876	.90062	.811	-.399	.105	-.162	.210
ML34	540	4.00	1.00	5.00	3.6093	.04139	.96175	.925	-.319	.105	-.268	.210
ML35	541	4.00	1.00	5.00	3.7579	.04281	.99562	.991	-.562	.105	-.060	.210
ML36	541	4.00	1.00	5.00	2.9612	.04930	1.14680	1.315	.039	.105	-.703	.210
MLISF	542	4.00	1.00	5.00	4.6402	.02842	.66166	.438	-2.371	.105	7.411	.209
MLIAD	539	4.00	1.00	5.00	3.3655	.04359	1.01201	1.024	-.424	.105	-.135	.210
MLIOR	535	4.00	1.00	5.00	3.5047	.04395	1.01647	1.033	-.491	.106	-.116	.211
MLISU	535	4.00	1.00	5.00	3.6093	.04353	1.00686	1.014	-.517	.106	-.142	.211
MLISD	538	4.00	1.00	5.00	4.0037	.03938	.91337	.834	-.890	.105	.742	.210
MLIST	538	4.00	1.00	5.00	4.1822	.03675	.85237	.727	-.883	.105	.332	.210
Valid N (listwise)	442											

Appendix B: Descriptive statistics for a-priori clusters representing role categories

Descriptive Statistics

	N	Range	Minimum	Maximum	Mean		Std. Deviation	Variance	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
SF	517	3.50	1.50	5.00	4.0522	.03184	.72401	.524	-.701	.107	.176	.214
AD	532	3.67	1.33	5.00	3.7591	.03136	.72340	.523	-.574	.106	.306	.211
ORG	526	4.00	1.00	5.00	3.6340	.02942	.67467	.455	-.376	.106	.129	.213
SU	526	4.00	1.00	5.00	3.4297	.03954	.90683	.822	-.455	.106	-.220	.213
SD	528	3.67	1.33	5.00	3.5451	.03107	.71394	.510	-.115	.106	-.147	.212
ST	521	4.00	1.00	5.00	3.5585	.03103	.70827	.502	-.197	.107	.064	.214
Valid N (listwise)	468											