Improving Equity and Attainment

through the development of research, evaluative and reflective skills

in Early Career Teachers

J.D. Scott and D.P. Robertson

University of Dundee

FINAL REPORT

June 2021

Scottish Council of Deans of Education

Scottish Attainment Challenge Project

CONTENTS

1. Project Members

The University of Dundee (UoD) aspect of the national SAC Research Project was designed and developed, in consultation and cooperation with appropriate colleagues within the School of Education and Social Work (ESW), by:

- Professor Teresa Moran, Depute Dean, School of Education and Social Work
- Professor James Scott, Research Team Leader, SAC Research (2017-2019)

The project has been led in two stages (each approximately of 2 years):

i)   Project Development, Initial Research and Course Development:
- Professor Teresa Moran, Depute Dean, School of Education and Social Work
- Professor James Scott
ii)   Research and Analysis of Findings, Course Amendment and Further Development:
- Professor James Scott
- Mr Derek Robertson

Other members of staff with leadership roles within aspects of the project have included

- Dr Yvonne Bain (now Professor Yvonne Bain, University of Aberdeen)
- Mrs Donna Dey

In addition to the above-named members of staff, the successive Associate Deans with responsibility for Initial Teacher Education (ITE) and successive colleagues responsible for the Masters programme have been involved in discussion and comment on the Scottish Attainment Challenge (SAC), aspects of this specific university project and the implications of SAC/this project for the teaching, learning, course structures and teacher competences acquired within their programmes. The Project Leads for all relevant ITE, Early Career Teacher (ECT) and Postgraduate Taught (PGT) programmes and courses within the school have also been involved in either two or three rounds of consultation on, and discussion of, SAC and this specific project. Members of staff from these teams have also participated in learning about, and discussion of, SAC itself, the national SAC Research Project and the impact of these on all relevant UoD courses. ITE, ECT and PGT students have participated in interviews and discussions related to the project itself, as well as the development of their own capabilities.

One of our four closely associated local authorities cooperated strongly with the university in the establishment of elements of the project. Other local authorities have made teachers available for involvement in various aspects of the project. Although the project was originally aimed at the analysis, development and enhancement of SAC-related skills, attitudes, competences and leadership abilities among ECTs, there has also been significant involvement of PGT students and, most recently, of ITE students.

The views of these wider groups have influenced the project. Participants have indicated that these discussions – and their greater awareness of SAC and the issues surrounding equity and excellence – have influenced both their own practice and, to varying extents, the nature of activities within ESW, local authorities and schools.

2. Executive Summary

Context

The Scottish Attainment Challenge (SAC) is one of the key educational initiatives currently being implemented in Scotland. It was announced by the First Minister at the launch of the national SAC Project in Dundee in February 2015. The Scottish Government website indicates that the Scottish Attainment Challenge (SAC) is "about achieving equity in educational outcomes" (Scottish Government, 2015) and proposes that: "equity can be achieved by ensuring every child has the same opportunity to succeed, with a particular focus on closing the poverty-related attainment gap" (*ibid.*).

This report forms part of an eight-university project jointly promoted by the Scottish Government (SG) and the Scottish Council of Deans of Education (SCDE) to research how, and how well, universities are developing pedagogies to support pre-service and early career teachers in reducing the attainment gap in literacy, numeracy and health & wellbeing (HWB).

Local Developments

The UoD project within the national SG/SCDE SAC Research Project has involved ITE, ECT and PGT students, along with members of staff, in understanding and researching how teaching, and thus learning, may be improved to ensure that the impact of equity-related issues – e.g. deprivation, poverty, illness and the pressures upon young carers –on teaching, learning and attainment is minimised. The project also has a practice-based focus on equipping teacher students at all levels to employ their improved skills to address equity-related issues within their school and classroom and to support them in developing more effective interventions to address the issues identified.

Beyond the SG/SCDE SAC Research Project, the University of Dundee became involved in SAC-related consultancy and research within a year of the 2015 national launch of SAC and, using this experience, has extended the scope of the project in several ways, including linking aspects of UoD staff research within the SG/SCDE Project to wider aspects of SAC and also including PGT students in SAC-related research, as well as the originally identified ECT and ITE groupings. Three Key Findings from the UoD Team's own wider SAC-related research, verified by its joint work with local authorities, which have most influenced the design and implementation of the Dundee aspect of the SG/SCDE Research Project are:

1. The need to involve classroom teachers in active participation in professional learning, leading to individual and wider research and analysis, in order to identify equity, learning and attainment issues impacting upon their own classes and in the consequent development and implementation of classroom interventions to improve aspects of learning within their learner group(s).

2. The need for teachers and leaders at all levels of the educational service to analyse the key equity, learning and attainment issues identified within their class/school/service and

for them then to be able to match these layered issues with *appropriate* service-wide, school-based, classroom-specific and learner-specific interventions.

3. The consequent need for teachers and educational leaders to develop and actively contribute to 'research communities' through which the research and findings of individual teachers and schools can influence classroom-level, school-level, local authority and wider practice, rather than leaving this solely to individual local authority or school interpretation of national policies.

Thus, although the key emphases within the UoD SAC Project are derived directly from the SG/SCDE Project and its four research questions, they have been modified by Key Findings 1-3 (see p.2 and p.7). This process resulted in the four UoD Research Themes of Section 4 (pp.7-8) which address all four national questions but have been expressed as three local UoD research questions, as follows:

1. How well were we addressing equity and attainment in our existing courses, what improvements are needed and what progress did we make by the "end" of the Project?

2. How can we involve, train and equip classroom teachers and potential school leaders for active participation in research and analysis to identify equity, learning and attainment issues impacting upon their own classes and in the consequent development and implementation of interventions to improve aspects of learning within their learner group(s).

3. How can we involve and commit university staff, teachers, headteachers and LA educational leaders to develop and actively contribute to a 'research community' through which:

    a. the research and findings of individual teachers can influence both classroom-level and wider practice

    b. research, teaching and collaborative work with teachers and local authorities by university staff support the development of effective learning, research and teaching interventions to mitigate the impact of social/health/other inequities

    c. political leaders, strategic education managers and headteachers support the development of a research community focused on equity and make meaningful use of individual and grouped equity-based research in planning initiatives to address and mitigate the impact of inequity on learning and attainment.

Methodology

A uniparadigmatic Mixed Methods Research (MMR) approach with a Pragmatic stance was adopted for this project (Cohen, Manion & Morrison, 2011, pp.21-30; Creswell, 2003, pp.3-22) combining aspects of documentary analysis; questionnaires employing both closed and open-ended questions; structured, open-ended interviews; analysis of student/staff-generated quantitative and qualitative research and analysis of national numeric, written and tabular data; analysis of national and local authority progress within SAC and a review of international approaches to improving equity and quality of achievement/attainment.

The analytical approach taken by UoD has involved the analysis and triangulation of a range of data sets, including:

1. The professional views of university staff, student teachers and teacher-researchers regarding aspects of learning, teaching, equity and attainment.
2. Data on course provision, content and emphases within UoD, including changes made in the light of the development of the UoD aspect of the national SG/SCDE project.
3. Data resulting from SAC-related research carried out by UoD students, including:
   o Areas of inequity and low attainment identified by students of the bespoke equity-related course developed for this project and of other relevant postgraduate courses investigated as part of this project
   o Areas for intervention identified by students from these courses
   o Equity-related interventions carried out
   o Impact of interventions on the identified areas of inequity or low achievement.
4. Data resulting from relevant aspects of SAC-related research carried out by UoD staff.
5. Data resulting from analysis of the progress made by the 9 SAC Authorities.
6. Comparative data resulting from analysis of international approaches to engendering increased equity and achievement/attainment.

The analyses identified above are on-going, as further data continues to be added to each of these data streams.

Initial Outcomes

The first two annual cycles of findings from this UoD SAC research project provided evidence of the original capability of UoD to support and encourage ITE/ECT teacher learning and research related to equity and attainment/excellence. They have also identified - and led to the development of - improvements to the set of learning pathways and individual units/courses provided, as well as the quality and nature of learning experiences within each course. The set of teacher-students supported by this aspect of the UoD project has been expanded to include later career stage postgraduate students as a result of early findings from the UoD project. Thus, a significantly broader group of students at all levels from undergraduate to headteacher have undertaken research on equity and attainment as a result of the UoD project and they have carried out interventions at every level from addressing the needs of individuals/small groups of learners to carrying out whole-school improvements, with each intervention designed to reduce the impact of inequity and to improve learning and attainment. Their research projects have themselves been analysed by members of the UoD staff team, generating findings related to the processes which class teachers and school leaders carry out in identifying the causes of underachievement, addressing inequities and identifying appropriate interventions to improve the issues identified.

Although there was a significant body of LA-funded (but unpublished, due to a lack of LA permissions) research on SAC within UoD, this national SAC research project has confirmed and consolidated many of the findings of that prior research, as well as providing a set of new findings to set in the public domain. The initial three annual cycles of SAC research within UoD has demonstrated that equipping teachers (at all stages of their careers) to understand, research and identify issues related to equity and attainment does appear to improve their practice. However, there is further work to be done in teacher education (at least within UoD,

although this may be a wider issue) to ensure that the investigation of catchment/class/individual equity issues is appropriately linked by all of our students (and thus, almost certainly, by all teachers) to the accurate identification and implementation of interventions which are most appropriate to addressing the inequities and learning challenges uncovered.

Progress and Future Developments

A significant majority of the research/learning strands identified in Sections 4-8 of this report have been addressed, not all have been fully addressed, one has not (yet) been addressed to any significant extent and there is still significant work to do in further analysing the findings from student and staff research and then reporting upon these, although initial high-level findings are contained in Section 9.

Several aspects of the UoD project require to be further developed. These include:

1. Further refinement of relevant teacher education courses within ESW to better equip student teachers at all stages of their careers to improve teaching, learning and attainment.

2. Specific attention to key ITE, ECT and PGT courses – particularly the Certificate course in Teaching and Learning for Equity - to support students in addressing the issues which their research identifies as crucial to improved learning and attainment by means of accurately focused interventions.

3. Further development of the undergraduate course to improve what is taught to students - and how - in the context of addressing inequity and improving attainment through research and focused interventions.

4. Continuing to train and refresh new and existing UoD staff members, with particular emphasis on understanding of the importance of equity and attainment, how these are best addressed through ESW courses, as well as the use of practitioner research to identify prevalent equity and/or attainment issues and appropriate means of addressing these.

5. Development of mechanisms to support and develop Equity-focused Research Communities within (and across) associated local authorities, supported by UoD.

3. List of Abbreviations

ASNs	Additional Support Needs
CfE	Curriculum for Excellence
CLD	Community Learning and Development
DCC	Dundee City Council
DYW	Developing the Young Workforce
ECT	Early Career Teacher
ES	Education Scotland
ESW	(the School of) Education and Social Work
GTCS	General Teaching Council for Scotland
HWB	Health and Wellbeing
HT	Headteacher
IDL	Interdisciplinary Learning
ITE	Initial Teacher Education
KU	Knowledge and Understanding
LA	Local Authority
MEd	Master's Degree in Education
MMR	Mixed Methods Research
NIF	National Improvement Framework
NQT	Newly qualified teacher
PEF	Pupil Equity Fund
PGT	Post-Graduate Taught
SAC	Scottish Attainment Challenge
SCDE	Scottish Council of Deans of Education
SG/SCDE	Scottish Government/Committee of Deans of Education
SIMD	Scottish Index of Multiple Deprivation
SIP	School Improvement Plan
SPR	Standard for Provisional Registration (from GTCS)
SQH	Scottish Qualification for Headship
SW	Social Work
T&L	Teaching and Learning
UoD	University of Dundee

4. Introduction

The twin foci of equity and quality/excellence are key aspects of many education systems' recent attempts to improve teaching, learning and attainment/achievement. Goddard (2007, p.5) suggests that increased discourse on equity and leadership has resulted from an increasingly ethnoculturally diverse global community due, in part, to 'great movements of people taking place around the world' (*ibid*., p.1). The view that school leadership and equity are inextricably linked may be found in transnational policy statements (e.g. Organisation of Economic Development (OECD), 2012), national policy documents (e.g. Scottish Government, 2016) and local authority/school policy statements. In the last two cases, many of the schools and some of the local authorities (LA) involved in the UoD SAC Project had equity, excellence (in attainment, although some included a wider view of success) and leadership in central positions within their policies. Others, however, mentioned these to more limited extents, with the centrality of equity being principally evident due to the 'relentless focus on Closing the Attainment Gap' of the Scottish national policy (Scottish Government, 2016, p.4) rather than to LA or school initiatives.

Attempts to set policy on equity and excellence are often conceptualised as an expression of neoliberal marketisation (e.g. OECD, 2012), focused on improving the economic health of nations through improved educational outcomes (*ibid*., p.3). Some academic sources resist the increased marketisation and managerialism inherent in leadership-focused approaches to increasing equity (Fielding (2006, p.353); Trnavcevic (2007, p. 79); Fitzgerald (2009, p. 155); Serpieri (2009, p. 130)), considering these to be potentially incompatible with the challenges of improving social justice while increasing excellence within the educational system (and its outputs). Fitzgerald (*ibid*.) suggests that, in some/many educational systems, teachers have been remade as 'producers of commodities' in order to contribute to the global economy, rather than addressing their pupils' individual circumstances, needs and development.

The project reported upon within this document takes a different approach from the neoliberal, marketizing approach discussed in the opening two paragraphs. The joint Scottish Government and Scottish Council of Deans of Education Project (SG/SCDE) on the Scottish Attainment Challenge (Scottish Government, 2015) seeks to work through Scottish universities in order to support undergraduate student teachers participating in Initial Teacher Education (ITE) and also early-career teachers (ECT) in developing their own research skills, understanding of teaching and learning processes and teaching strategies. In this way, the SG/SCDE Project seeks to implement aspects of the Donaldson Report (Scottish Government, 2011) in exposing teachers to Masters-level learning and enhancing their pedagogical knowledge, research skills and understanding to better meet the needs of the individual learners in their classes.

This document is the final report on one of the university projects carried out as part of the SG/SCDE Project, that of the University of Dundee (UoD). The nationally-agreed aim of the UoD "Teaching and Learning for Equity" project has been to develop early career teachers' research, pedagogical and analytical skills through Masters-level learning in order to equip

them to play key roles within the system-wide improvements associated with Curriculum for Excellence, the National Improvement Framework, GIRFEC and, in particular, the Scottish Attainment Challenge. The project is particularly aimed at supporting teachers in improving the learning and attainment of children identified as coming from the lowest two deciles of the Scottish Index of Multiple Deprivation (SIMD 1 and 2).

The UoD project has involved ITE, ECT and PGT students, along with members of staff, in understanding and researching how improvements in teachers' knowledge and understanding, focus, use of research data and judicious choice of teaching interventions can contribute to improving equity, learning and attainment. The improvements deriving from such better focused and better-informed teaching help to ensure that the impact of equity-related issues – e.g. deprivation, poverty, illness and the pressures upon young carers – on teaching, learning and attainment is minimised. The UoD project also has a practice-based focus on equipping teacher students at all levels to employ their improved skills to address equity-related issues within their school and classroom and to support them in developing more effective interventions to address the issues identified. Taken together, the nature, importance and means of improving equity and attainment form a highly significant aspect of all taught courses provided within the University of Dundee (UoD) School of Education and Social Work (ESW) to support the professional learning of pre-qualification, immediate post-qualification and later career postgraduate students.

Within the UoD Project, equity and attainment have generated several strands of staff research. The first strand of research carried out within the UoD Project found that equipping student teachers to improve equity and attainment was generally evident within UoD courses at the commencement of the project, although not consistently in the context of national policy on equity and improving attainment, but gained a sharper, more developed and more nationally consonant form after three years of activity within the UoD project. Students are taught from the first year of their pre-qualification courses onwards that deprivation is a very important member of a set of barriers to learning, several of which can lead to inequities of learning and/or achievement and all of which must be addressed through an appropriate range of teaching and learning approaches to ensure that the learners who will be in their schools and classrooms have equity of opportunity to excel in their learning and to demonstrate this through the highest possible levels of attainment .

Each ESW course is designed to ensure that students foster an ethos of inclusion for *all* pupils, demonstrate and enact fairness to all pupils and address all relevant barriers to learning (see Section 9). School placements, and the work undergraduate and new graduate students (but also later postgraduate students) undertake before and after placements, are a key area for enhancing those students' understanding of children's backgrounds, their interaction with learning and the associated issues and factors which may manifest themselves in the classroom.

The second strand, analysis of ITE, ECT and PGT students' approaches to addressing inequity and underachievement as they develop their skills and understanding as a result of learning within ITE and Masters-level units and courses, is reported in Sections 8 and 9 of this report.

A group of UoD staff has been involved in conducting research related to SAC since early 2016, across a range of related research strands, designed to contextualise and be supportive of the specific work with students. These are:

3. UoD entered into an agreement to analyse and evaluate the work of one of the seven, later nine, "SAC Authorities" (announced by the First Minister at the launch of the national SAC Project in Dundee in February 2015) in its implementation of the Scottish Attainment Challenge.

    The time lag between national launch of SAC and the early stages of implementation varied across the nine Challenge Authorities but was significant in almost all cases, as many of the staff appointed to support the nine Challenge Projects did not take up posts until well through Session 2015-16, or even into early 2016-17. Thus, the UoD SAC Research Team's commencement of activities in early 2016 (after a period of team building and internal research) was timed well in terms of examining how SAC-related developments were being planned and established, as well as implemented and modified in the light of initial experience. After initial work from early 2016, three annual reports on the progress of SAC-related developments in the partner local authority were produced in 2017, 2018 and 2019.

    This report does not contain findings specifically related to UoD's work with that LA, Dundee City Council (DCC), as it was undertaken as a consequence of a commercial contract within which permission was not granted for publication. It is possible, however, to see a little of the outcomes of this work in the 2018 Education Scotland Inspection Report [1] on DCC which states:

    A research partnership with the University of Dundee, funded through the Scottish Attainment Challenge, is highlighting key messages as the Scottish Attainment Challenge evolves. These include an increased level of understanding data and use of research amongst headteachers as well as a strengthened understanding of SIMD and the impact this can have on learning and attainment. However, the research highlights a need for swift strategic decisions about the extent and reach of the Scottish Attainment Challenge targeted work across the city, particularly to include a greater proportion of the Dundee's children and young people living in SIMD 1 and 2.

    (Education Scotland, 2018, p.15)

Although the specific LA-linked research group completed its work in late 2019, wider research continues to support the UoD SAC Project and its continuation beyond the end of the national project. This has involved two further strands which again support and provide a wider context for the analysis of teacher and school research and intervention:

4. Analysis of the performance of the nine SAC Authorities from a range of available national and LA-provided data, seeking to identify and highlight verifiable instances of good practice.
5. Comparative analysis of Scottish and international policy, practice and outcomes in addressing inequity.

These last two research strands will, however, largely be reported upon after the completion of the SG/SCDE SAC Project.

Aspects of findings related to equity, transitions, SAC itself and its implementation across Scottish local authorities (LAs)from research strands 3-5 have, however, influenced UoD's approach to the original two strands of the SG/SCDE SAC Research Project, as have findings from preliminary and subsequent self-analysis by UoD teaching teams (aided by their students) within the School of Education and Social Work. Specifically, three Key Findings

from the UoD Team's own SAC-related research, verified by its joint work with LAs, which have most influenced the design and implementation of the Dundee SG/SCDE Research Project were:

1. The need to involve classroom teachers in active participation in professional learning, leading to individual and wider research and analysis, in order to identify equity, learning and attainment issues impacting upon their own classes and in the consequent development and implementation of interventions to improve aspects of learning within their learner group(s).

2. The need for teachers and leaders at all levels of the educational service to analyse the key equity, learning and attainment issues within their class /school/service and for them then to be able to match these layered issues with *appropriate* service-wide, school-based, classroom-specific and learner-specific interventions.

3. The consequent need for teachers and educational leaders to develop and actively contribute to 'research communities' through which the research and findings of individual teachers and schools can influence classroom-level, school-level, local authority and wider practice, rather than leaving this solely to individual local authority or school interpretation of national policies.

The UoD response to the SG/SCDE Research Project has been particularly influenced by the first two of these three findings, although some aspects have been influenced by the third. A fourth significant issue has also been identified within these research contexts:

The need for political leaders, strategic education managers and headteachers to be aware that 'one size fits all' approaches do not generally appear to produce the greatest impact on equity or attainment and that widespread interventions require to be informed by - and planned and developed in the light of - collated classroom and school-based research and analysis on specific equity and attainment issues.

This fourth issue has influenced the project to a more limited extent, as strategic LA/school leadership of SAC is not a specific focus of the SG/SCDE SAC research project.

To date, three cohorts of students have passed through the Certificate course on Teaching and Learning for Equity and a fourth is nearing completion (although somewhat delayed by the global pandemic: this is the only real inhibition caused to the UoD Project by the results of the pandemic). Two of these three cohorts have been comprised solely of ECT students. The middle cohort was a mixed group of ECT students and promoted school staff. The fourth cohort is likewise a mixed group.

Each of these cohorts has developed skills in researching and addressing equity issues and the body of findings from their research continues to develop. This has been accompanied by a parallel group of research projects by PGT students (mostly promoted school or local authority staff), drawn from five successive PGT cohorts, and also by research generated by staff of the School of Education and Social Work, both on the strategic development of the

national SAC initiative, on specific aspects (e.g. school-based case studies, numeracy) of equity and attainment and on the research, findings, activities and outcomes of the student groups noted.

Aspects of the findings from these processes and issues identified during the research are analysed are examined in Sections 8-10.

5. Research Questions

Questions 1-4 of the set of national research questions relating to the overall SG/SCDE SAC Research Project were used to interrogate current practice in UoD at the beginning of the SG/SCDE Research Project. They have subsequently been used during the UoD project to test changing perceptions and practice across staff and students within the School of Education and Social Work and will again be used near the conclusion of the Project to ascertain progress in these four areas.

The key emphases within the UoD SAC Project are directly derived from the national project but modified by Findings 1-3 from prior and continuing UoD research (p.7). This resulted in the five research strands of Section 4 (pp.7-8). These address all four of the national questions but have been expressed as three local UoD research questions as follows:

1. How well were we addressing equity and attainment in our existing courses, what improvements are needed and what progress did we make by the "end" of the Project?

2. How can we involve, train and equip classroom teachers and potential school leaders for active participation in research and analysis to identify equity, learning and attainment issues impacting upon their own classes and in the consequent development and implementation of interventions to improve aspects of learning within their learner group(s).

3. How can we involve and commit university staff, teachers, headteachers and LA educational leaders to develop a 'research community' through which:

   d. the research and findings of individual teachers can influence both classroom-level and wider practice

   e. research, teaching and collaborative work with teachers and local authorities by university staff support the development of effective learning, research and teaching interventions to mitigate the impact of social/health/other inequities

   f. political leaders, strategic education managers and headteachers support the development of a research community focused on equity and make meaningful use of individual and grouped equity-based research in planning initiatives to address and mitigate the impact of inequity on learning and attainment.

6. Framing the Question

Using its experience of SAC-related research as a stimulus to enhance the process, the UoD team approached the national SAC research questions through a framework combining national emphases with key local, national and international findings arising from its own SAC-related research. This framework is expressed in the three research questions of Section 5, linked to the set of UoD project research themes set out in Section 4 (pp.6-7).

Thus, UoD's work has focused on a research project involving ESW students and staff in the following four principal activities:

1. Supported self-analysis by, with and among course leaders and staff of all relevant undergraduate and postgraduate courses within ESW to ensure that equity and excellence in learning and attainment are key foci of all relevant ESW units and courses. Involvement of students in the process of course analysis. Analysis of course specifications, content and assessment to ensure that appropriate learning experiences and opportunities to demonstrate knowledge, skills and understanding in these contexts are present in each course, with appropriate developments where required. This process involves analysis of UoD staff knowledge and attitudes, analysis and, where needed, improvement of courses and capturing student views and feedback.

2. Development of a new taught Certificate course to provide principally ECTs, but also more experienced staff, with the necessary knowledge and understanding, skills and research approaches to understand and investigate how equity impacts on teaching, learning and attainment. [Accompanied by improvements to aspects of the ITE course and some PGT courses.]

3. Student (ECT and PGT) research-based activities, including:

   o Research and analysis by students to consider Scottish and international approaches to redressing the impact of inequity, in its various manifestations.
   o Identification by students of appropriate data to analyse catchment, class and individual factors and to analyse achievement and attainment.
   o Analysis, development and use of effective analytical tools to capture appropriate data.
   o Based on the above, identification of effective interventions to improve equity (and the contexts within which these interventions are most effective).
   o Design and use of focused interventions to address individual needs as identified by the above processes.

4. Staff research and analysis on individual, school, LA, national and international attempts to improve excellence and equity (and their interrelationships) with an intent to identify good practice, key issues and successful strategies at student, school and local authority levels. Research contexts here include:

   o The research and findings of individual teachers (from ECTs to school managers) in order to identify class/school issues and influence both classroom-level and wider practice.
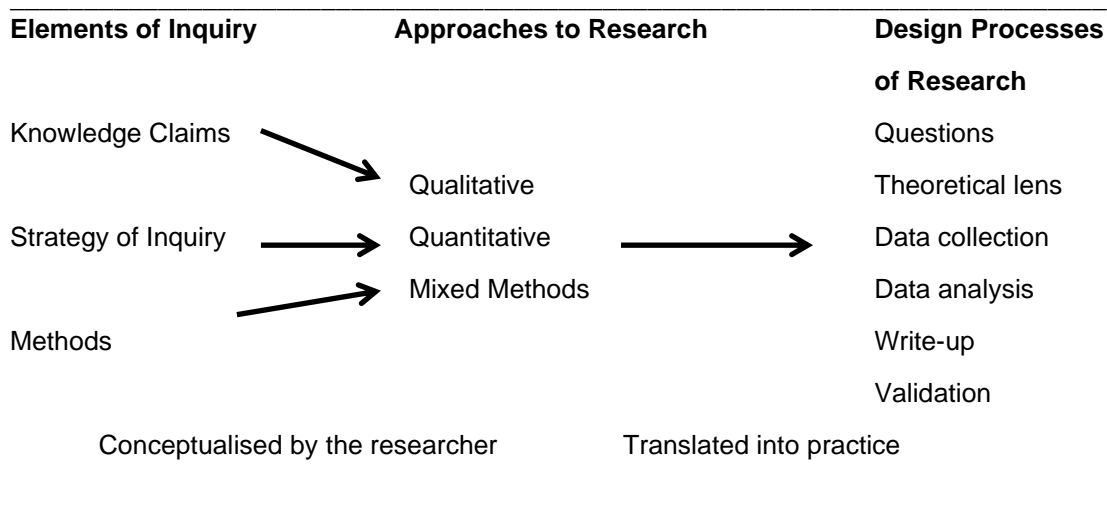
- The research and findings of university staff, in order to support the development of effective learning, practitioner research and teaching interventions to mitigate the impact of social/health/other inequity.

- Inputs from LA managers, headteachers and colleagues to analyse and address equity at local, national and international levels in order to make meaningful use of individual and grouped equity-based research in planning initiatives to address and mitigate the impact of inequity on learning and attainment.

A further activity – an early outcome of the research being carried out by ECTs, later postgraduate students and staff – was identified by those involved: the development of 'research communities', including LA and school managers as the development proceeds, focused on equity and attainment through which the research and findings of individual teachers can influence both classroom-level and wider practice and through which school and LA leaders can harness the developing research capability of their colleagues to address a range of equity-related issues affecting individual schools and LAs, as well as providing exemplification of good practice for the wider educational community. As will be seen later (Sections 9-11), this proved to be particularly problematic for a range of reasons.

7. Methodological Approach

Research theorists describe research design as a set of steps and choices through which the researcher defines a research pathway. One influential theorist, John Creswell (2003) played a central role in the development and understanding of Mixed Methods Research (MMR). His comprehensive approach influenced the adoption for this study of a methodological approach based on the work of the wider group of MMR theorists (e.g. Denzin and Lincoln (2003), Cohen, Manion and Morrison (2011) and Sarantakos (2005)) within which Creswell is a leading voice. Creswell's research approach is summarised in Figure 7.1:

Figure 7.1   Research Design: Elements, Approaches and Design Processes

Elements of Inquiry	Approaches to Research	Design Processes of Research
Knowledge Claims		Questions
	Qualitative	Theoretical lens
Strategy of Inquiry	Quantitative	Data collection
	Mixed Methods	Data analysis
Methods		Write-up
		Validation
Conceptualised by the researcher	Translated into practice	

From Creswell (2003, p. 5)

Preliminary research for this study had suggested that it might be best framed using an MMR approach (Creswell, 2003; Cameron, 2011; Tashakkori & Teddlie, 2003). Consideration of Creswell's (2003) three central Elements of Inquiry (knowledge claims, strategies of Inquiry and methods) supported the concept that MMR would offer the most appropriate philosophical approach and would yield an effective research design to take this study forward, not least because it was evident in initial scoping of the project that both quantitative and qualitative data would need to be gathered and analysed. Creswell's (2003, pp. 6-12) Knowledge Claims parallel other researchers' consideration of ontology, epistemology, methodology or, more globally, paradigms (Kuhn, 1962; Guba & Lincoln, 1994).

Creswell's four Knowledge Claim Positions are Postpositivism, Constructivism, Advocacy/Participatory and Pragmatism. Aspects of all four *could* have had relevance for this study. Pragmatism is, however, strongly associated with problems whose analysis necessitates a study with multiple data sets and a need to adopt both qualitative and quantitative methods. Cherryholmes (1992), Tashakkori and Teddlie (1998), Creswell (2003), and Cohen *et al.* (2011) all see Pragmatism as the appropriate philosophical underpinning for MMR studies using pluralistic approaches.

Strategies of inquiry, or *methodologies* (Crotty, 1978; Mertens, 1998, 2003), operate at a more applied level than the philosophical self-placement inherent in paradigms (Creswell, 2003). The three principal sets of methodological strategies used in the social sciences are those associated with quantitative, qualitative and MMR approaches. In this study, the analysis of several sets of statistical data suggests the need for a quantitative approach but other aspects e.g. documentary analysis and interviewing suggest a qualitative strategy. The need to collect and analyse both qualitative and quantitative data suggests an MMR strategy.

The final element of inquiry (Creswell, 2003, p. 17) informing a research approach relates to *methods* of data collection and analysis. The choice of methods relates to whether the intent is to specify the type of information to be collected in advance of the study or to allow it to emerge from participants in the project (Creswell, 2003, p.17). Given the nature of the UoD Project's research questions, there is an evident need to use both predetermined (e.g. statistical analysis and questionnaires) and emerging methods (e.g. participant interviews, students' research findings), as well as a mixture of open/closed questions, multiple forms of data and a mixture of statistical and textual analysis. This is a further (and telling) indicator of the need for an MMR approach.

The 'Five Ps': A Conceptual Framework for Mixed Methods Research

A year after Creswell and Tashakkori's brief definition of MMR in the *Journal of Mixed Methods* (2006), Creswell and Plano Clark provided further support for the use of MMR across a broad range of research: "Its central premise is that the use of quantitative and qualitative approaches in combination provides a better understanding of the research problems than either approach alone" (Creswell & Plano Clark, 2007, p.5). Cameron (2011) advanced this process by identifying the key components - 'the 5Ps': Paradigms, Pragmatism, Praxis, Proficiency and Publishing - of a rationale for using an MMR approach, thus addressing the challenges, controversies and crises faced by MMR researchers (Onwuegbuzie & Collins (2007, p.304)). Cameron's 5Ps approach, along with aspects of the work of Tashakkori and Teddlie (2003, 2010) and Onwuegbuzie and Collins (2007), form the framework for this research. Further details of Cameron's "5Ps" Approach are offered in Appendix 1.

Approach

Given the discussion above, a uniparadigmatic MMR-based approach with a Pragmatic stance was adopted for this project, combining aspects of documentary analysis, a questionnaire employing both closed and open-ended questions, structured open-ended interviews, analysis of student/staff-generated quantitative and qualitative research and analysis of national numeric, written and tabular data.

8. Analytical Approach

Sections 3 to 6 have demonstrated how the UoD aspect of the SG/SCDE SAC Research Project has engaged with SAC-related research and has sought to address the four national research questions related to SAC through blending the university's own prior experience of SAC-related research with the four national research questions.

This approach has, as noted in Section 6, generated an analytical framework for the UoD SAC Research Project which comprises the following:

1. Supported self-analysis by, with and among course leaders and staff of all relevant undergraduate and postgraduate courses within ESW to ensure that equity and excellence in learning and attainment are key foci of all relevant ESW units and courses. Involvement of students in the process of course analysis. Analysis of course specifications, content and assessment to ensure that appropriate learning experiences and opportunities to demonstrate knowledge, skills and understanding in these contexts are present in each course, with appropriate developments where required. This process involves analysis of UoD staff knowledge and attitudes, analysis and, where needed, improvement of courses and capturing student views and feedback.

2. Development of a new taught Certificate course to provide principally ECTs, but also more experienced staff, with the necessary knowledge and understanding, skills and research approaches to understand and investigate how equity impacts on teaching, learning and attainment. [Accompanied by improvements to aspects of the ITE course and some PGT courses.]

3. Student (ECT and PGT) research-based activities, including:

    a. Research and analysis by students to consider Scottish and international approaches to redressing the impact of inequity, in its various manifestations.
    b. Identification by students of appropriate data to analyse catchment, class and individual factors and to analyse achievement and attainment.
    c. Analysis, development and use of effective analytical tools to capture appropriate data.
    d. Based on the above, identification of effective interventions to improve equity (and the contexts within which these interventions are most effective).
    e. Design and use of focused interventions to address individual needs as identified by the above processes.

4. Staff research and analysis on individual, school, LA, national and international attempts to improve excellence and equity (and their interrelationships) with an intent to identify good practice, key issues and successful strategies at student, school and local authority levels. Research contexts here include:

    o The research and findings of individual teachers (from ECTs to school managers) in order to identify class/school issues and influence both classroom-level and wider practice.

- The research and findings of university staff, in order to support the development of effective learning, practitioner research and teaching interventions to mitigate the impact of social/health/other inequity.

- Inputs from LA managers, headteachers and colleagues to analyse and address equity at local, national and international levels in order to make meaningful use of individual and grouped equity-based research in planning initiatives to address and mitigate the impact of inequity on learning and attainment.

The analytical approach taken by UoD has involved the analysis and triangulation of a range of data sets, including:

1. The professional views of university staff and students regarding aspects of learning, teaching, equity and attainment.
   - Analysis of findings from interviews with course leaders, members of ESW staff and students, including content, approaches to equity and attainment, student awareness (of equity and excellence/attainment/achievement) and satisfaction, areas for improvement and recent improvements.
   - Documentary analysis of course descriptors and teaching materials, analysis of reports on courses, including content, approaches, areas for improvement and recent improvements.

2. Data on course provision, content and emphases within UoD, including changes made in the light of the development of the UoD aspect of the national SG/SCDE project, including:

   - Analysis of findings from interviews with course leaders, members of ESW staff and students, including content, approaches to equity and attainment, student awareness (of equity and excellence/attainment/achievement) and satisfaction, areas for improvement and recent improvements.
   - Documentary analysis of course descriptors and teaching materials, analysis of reports on courses, including content, approaches, areas for improvement and recent improvements.

3. Data resulting from SAC-related research carried out by UoD students, including areas for intervention identified by students of the specific equity-related course and of other relevant postgraduate courses and also equity-related interventions carried out. This includes:

   - Catchment/school/class issues driven by inequity.
   - A rationale for, and approach to, an equity/attainment-related intervention.
   - Nature of the curricular area(s) and intervention to be carried out by the student.
   - Outcomes achieved with respect to the original issue(s) identified.

4. Data resulting from subsequent UoD staff analysis of student's findings and actions. This includes analysis of:

   o The nature and frequency of equity-related issues identified by students.
   o The nature of evidence gathered by students for identification of each equity-related intervention.
   o The categories and nature of the interventions carried out by students across relevant courses.
   o The correlation between students' identification of deprivation/learning issues within their LA/school/class and their rationale for intervention.
   o The nature and effectiveness (including the evidence gathered to demonstrate that effectiveness) of interventions

5. Data resulting from wider aspects of SAC-related research carried out by UoD staff. This includes analysis of:

   o Nature of international and national discourse on equity and/or improving attainment/achievement (e.g. Neoliberal influence)
   o International approaches to equity and quality (=Scottish "excellence")
   o National policies on equity and/or improving attainment/achievement
   o Scottish policy on equity and/or improving attainment/achievement
   o Local authority policies on equity and/or improving attainment/achievement
   o Internal/external evaluative data on effectiveness of strategies to improve teaching and learning to increase equity and/or achievement/attainment.

9. Analysis

The findings deriving from the research framework developed in Sections 4-8 are analysed here:

A   Analysis and Improvement of UoD Courses

Initial Analysis of UoD Courses

Section A relates to the first two aspects of the UoD analytical framework (p.16).

On initial consideration, this area appeared to provide an appropriate entry point to the UoD project, as it had the potential to address almost all of the national and UoD research questions and also to fulfill a local need to review and improve those courses accessed by ITE and ECT students. Consequently, research commenced on this thread as soon as the UoD bid for participation in the national project had been lodged. Three aspects of research and analysis have been carried out within this thread so far, although there are still matters to be taken forward (see Section 11).   The three completed aspects are:

I.   Initial research to establish the extent to which equity and excellence could be demonstrated to be key foci of relevant UoD Education courses (ITE, ECT, PGT). Gaps in provision and issues of concern were also sought for subsequent improvement.
II.   Analysis of all relevant courses, including open-ended questionnaires and follow-up interviews with relevant staff members, to establish strengths and areas for development
III. Wider analysis of student, staff, teacher, headteacher and local authority views on (a) the efficacy of their own approaches to equity and attainment and, where relevant to the respondent, (b) the quality and efficacy of relevant UoD courses in improving teachers' abilities to improve equity and attainment.

In addition, some preliminary research (through meetings with Associate Deans, course leaders and key members of staff) had been undertaken before the UoD bid was submitted.

Aspect (i)
An initial cycle addressing aspect (i) of this research area was carried out as soon as the UoD bid had been accepted. Analysis of the findings identified that most UoD ITE, ECT and PGT course leaders were confident/very confident that their course(s) met students' needs to understand, plan for and act upon (in)equity. There was, however, a mismatch between their views and available evidence in two contexts: (a) whether equity/excellence were being specifically addressed across courses in a manner consonant with the National Improvement Framework and the national SAC programme and (b) whether courses' learning opportunities supported students at *all* stages of learning from undergraduate student to HT learner. Identified issues related to ECTs, but also to aspiring Middle Leaders and Deputes.

The preliminary research (confirmed by subsequent initial research findings) suggested the most obvious gap in provision was related to ECTs. Thus, the development of an equity-related course for ECTs (and others) was included in the final version of the UoD bid.   Lesser gaps in equity-related learning pathways available to some groups of postgraduate students were also identified. Minor adjustments were made to the Into Headship course (within the

national guidelines), further strengthening the focus of aspiring headteachers on equity. The new Teaching and Learning for Equity module (part of a new equity-related Certificate course instituted as a result of the preliminary research) was also made available more widely across Masters-level pathways to reach a larger group of students.

Aspect (ii)

Aspect (ii) - comprising analysis of all relevant ITE, ECT and PGT courses - took place near the end of the first full year of the UoD SAC research project. Methods employed included a questionnaire (using closed and open-ended questions) and semi-structured interviews with course leaders and members of staff teaching some of the courses. The purposes of this aspect of the research were to identify progress, i.e. how equity and excellence were either being introduced into, or enhanced within, ITE, ECT and PGT courses. In so doing, strengths, good practice and areas for development were identified within the different courses and the UoD SAC research project team sought to identify if/how colleagues were involving, training and equipping classroom teachers and potential school leaders for active participation in research and analysis related to the equity, learning and attainment issues impacting upon their own classes and schools.

Findings from aspect (ii) centred on specific taught courses. They were published to Course Leaders and their teams to assist them in ensuring that relevant ESW courses were appropriately amended so that each course would address equity and excellence in a manner relevant to the needs of the student group (or groups) engaged with the course, but also consonant with national policy. However, ESW managers (the Depute Dean, with relevant Associate Deans) also used the findings to consider strategic issues related to student pathways through ESW from undergraduate to doctoral research and also the influence of these courses on professional pathways from student teacher to HT (and/or local authority management/ leadership). The courses analysed comprise:

The Undergraduate Course

In the first year of the undergraduate (ITE) programme, students undertake a joint module with Social Work and Community Education students entitled *Values, Self, Society and the Professions*. The module is specifically concerned with equity and examines issues such as protected characteristics. Students also examine section 1 of the Standards. Each of the three pedagogical modules examines the use and effectiveness of differentiation and all examine inclusion, but the key focus on inclusion is in the pedagogy module linked to the third and final school placement. During each placement, students are expected to research pupil needs, including ASNs, specific to the contexts of pupils in their classroom. Each curriculum module also considers how to make each curriculum area accessible to all pupils (e.g. through differentiation). There is also an elective module across third and fourth year called *Health and Wellbeing* (HWB). Again, aspects of poverty and inclusion provide a particular focus within this module.

In the improved version of the undergraduate programme, introduced after the last course review (2017), a core module called *Permeating Matters, with* a key focus on aspects of poverty and inclusion, replaced the third-year electives. This module has the following contexts:

- HWB
- Inclusion
- exploring equity in relation to teaching.

These developments applied to the cohort which started in 2017 and reached this point in 2019. A fourth-year module entitled *Policies, Practices and Issues in Education* has also been added (from 2020). The module has been designed to offer flexibility to explore current initiatives and issues in education and thus will have different foci over time. Currently, it targets the National Improvement Framework (NIF) and "closing the (attainment) gap". As part of the support mechanism for the new programme, a link has been formed with Poverty in Scotland who will provide input to each cohort on this theme.

A further recent development has seen our ITE students having to seek evidence of how ESW itself is implementing social justice to allow them to see how their academic community is looking at equity and social justice. In framing this, they must consider how teaching may be improved to ensure that the impact of equity-related issues on learning and teaching is minimised and how learners' achievement/attainment can be maximised through appropriate learning and teaching strategies, specific interventions and teacher research on learner community challenges or issues, as well as upon learners' responses to teaching. They must also consider in what ways teaching may be improved to ensure that the impact of equity-related issues on teaching and learning is minimised.

Within the recently added IDL module, students carry put a reflection on personal, societal and professional values and how they can complement each other. They seek to understand what factors impact on our individual and shared values, to consider how people in poverty are seen in society and how that has changed in the past 20 years.

All of the above is linked to an ethos of inclusion – students must now determine if fairness is demonstrated and enacted, both by the school and by themselves. The 'research and then act' methodology extends to requiring students to address <u>all</u> barriers to learning. A significant focus is placed upon challenging deficit models <u>and</u> building different ones, through influencing student teachers and using structured research to inform these processes. The "Dundee theme' is that of trying to improve the situation and circumstances of local communities through encouraging teachers, schools and LAs to use focused research to improve their work.

The PGDE Courses and the 'Learn to Teach' Programme

Primary

Primary PGDE students familiarise themselves during placements with the context of the catchment, school and classroom in which they are working. Given the nature of our associated local authorities, for many this will mean teaching children from SMID 1-40 areas.

In demonstrating that they meet the GTCS Standards for Provisional Registration during their placement, students must show that they:

- embrace the values of social justice
- act and behave in ways that develop a culture of trust and respect
- demonstrate a professional commitment to motivating and inspiring learners taking into consideration barriers to learning
- develop knowledge and understanding of the sector, schools and learning communities in which they teach and their own professional responsibilities within them (including knowing how to engage appropriately in systematic investigation and how to access and apply relevant findings from educational research).

One of the PGDE summative assignments requires students to analyse the role inclusive practice plays in raising attainment. Pre-assignment, students learn about SAC, the pupil Equity Fund (PEF) and improving outcomes in Literacy, Numeracy and HWB, as well as considering the interventions for equity as identified in the NIF. These aspects draw on student learning/experience in order to improve awareness and develop their future practice. This significant focus is intended to draw upon student learning and experience in this context, to enhance their awareness in this area and to develop their future practice. However, there are also specific foci across the PGDE programmes on:

- the impact literacy and numeracy play in life chances of children and young people and the consequent importance of these two subjects. This is echoed in the input our PGDE Secondary students receive on 'Literacy Across Learning'.
- strategies to support learners who have had reduced literacy and numeracy experiences. In the key areas of phonological awareness, spelling, reading, listening & talking, writing, enriching vocabulary, counting/structure of number, place value (including decimals), calculations and fractions, inputs are balanced between subject knowledge, possible misconceptions in these areas and how these will manifest, key resources and examples of best practice/quality pedagogy
- inclusive pedagogy and aspects of inequity which may require specific adaptations to learning and teaching (including exposure to teaching strategies which can increase engagement and motivation in all learners and which can be used/adapted in their own classrooms)
- the encouragement of research-based methods in teaching and learning
- the importance of the learning environment
- reflecting on the students' own beliefs of the teaching of literacy and numeracy, their aspirations and their expectations of learners
- understanding of language and numeracy acquisition in order to identify difficulties and those learners who require challenge or have a surface level understanding of a concept
- gathering and accessing a bank of resources which may be used to assess and support learning e.g. POLAAR resource from Education Scotland, Highland Literacy blog, high quality and current pedagogical articles/books, diagnostic assessments etc.
- working in collaboration with the Local Authorities to ensure consistent messages
- the importance of working with and engaging parents.

In the summative assignment – HWB: Responsibility of All - students have engaged with literature and theories of wellbeing, child centred approaches, ecological theory, government policy and the challenge of converting this into practice. A whole school approach – to building relationships, transitions and all the other aspects mentioned – is considered. In

addition, students may elect to focus on an area such as assessment, differentiation, collaborative pedagogy - in their attempts to review the literature in effective development of ROA/HWB in the classroom.

PGCE (SIR) students have also had inclusive practice in literacy in a four-session unit - Literacy Across Learning, Listening & Talking, Developing Vocabulary & Spelling in STEM Subjects and Developing Reading & Writing Skills in STEM Subjects, all of these reinforce the foci listed in the bulleted list above. Again, although these strategies are relevant for *all* learners, they impact most with those students whose learning has been impeded by one or more factors and who find accessing STEM subjects challenging for a variety of reasons (including living in SIMD 1-10).

Secondary Courses

Secondary PGDE students study the impact Numeracy and Literacy have on the life chances of young people. Early in the course, students debate key issues in Scottish education including the NIF, Closing the Equity Gap, SAC, PEF and Developing the Young Workforce (DYW). This focus provides students with an understanding of the issues resident in all classrooms. During subject-specific inputs they are further challenged to consider how to meet the needs of *all* learners and are introduced to strategies, activities and resources that provide opportunities for all learners to access the curriculum.

Early on in the course, students engage in debate on key issues in Scottish education including the National Improvement Framework, Closing the Equity Gap, The Scottish Attainment Challenge/Pupil Equity Fund and Developing the Young Workforce. This focus provides students with a basic understanding of the issues at play in all classrooms, irrespective of the ability and socio-economic background of the young people in the class. Throughout their subject-specific inputs they are further challenged to consider how they must meet the needs of *all* learners and are introduced to strategies, activities and resources that provide opportunities for all learners to access the curriculum.

Information from sources such as PISA and SSLN is used to identify issues affecting attainment and to support planning appropriate and engaging learning experiences for young people, especially from more deprived backgrounds. During placements, students investigate the SIMD profile of the school (and other catchment-related factors), considering implications for their practice. There is an expectation that they will gather and evaluate information about all of the learners in their classes to ensure they are meeting learners' needs (including ASNs).

Whilst on placement, students are encouraged to investigate the SIMD profile of the school (and other catchment-related factors) and to consider how and whether there are implications for their practice. They also visit and work alongside teachers and other professionals who have responsibility for working with young people across the learning community. At one point, they are specifically asked to visit another setting within the wider school community to begin to understand the importance of linking with a variety of professionals. Again, as part of their research whilst on placement, there is an expectation

that they will gather and evaluate information about all of the learners in their classes to ensure they are meeting learners' needs (including ASNs).

Aspects of the above are mirrored in the subject-specific content of the Chemistry, Home Economics and Physics courses. The 'generic' inputs on HWB listed above are built upon by the subject-specific tutors and are contextualised in their subject areas. In the past two years, the opportunity has been developed for the mathematics staff to provide a 'how to teach mathematics' surgery for the other subjects to ensure that messages about consistent practice and expectations of numeracy are shared. From 2018/19, there will also be joint work with the PGDE Primary students to discuss and begin to develop everyone's knowledge, understanding and thinking about transition and again the importance of joined up working between primary and secondary to ensure 'no child is left behind' as a result of a deeper appreciation and acceptance of everyone's strengths and differences.

In the generic inputs on lesson and curricular planning, the principles of curriculum design are employed to emphasise the importance of the seven design principles, the Skills for Learning, Life and Work and how these interact and can be developed through each of the subject areas. In Mathematics, a particular emphasis is placed on the relevance of Mathematics to the lives of young people in semester 2's work and consequently in the students' final in-school placement.

One of the PGDE Electives relates to Co-operative Learning, with a specific focus on how to use this as a means of including learners of all abilities.

Postgraduate Courses for Early-Career Middle Leaders, Deputes and Headteachers

Having addressed "gaps" in ESW's provision with respect to equity, the pattern established with pre-qualification and ECT students is continued with aspiring middle leaders, deputes and headteachers. UoD offers all parts of the SCEL suite of courses for Middle Leaders and Into Headship and In Headship for deputes/headteachers. Each course has core components which examine inclusion and equity and aspects of the programme of assignments specifically evaluate these issues. For students who continue to an MEd. in Strategic Educational Leadership, built upon the individual SCEL courses, these core components of the individual courses are augmented by optional modules in the areas of equity, additional support needs and inclusion.

Aspect (iii)

Subsequent Analysis of UoD Courses

As part of Aspect (iii), an analysis of performance, strengths and weaknesses in all relevant ITE, ECT and PGT courses took place in June 2019. 20+ teacher educators, NQTs, headteachers and local authority personnel were interviewed using a structured but open-ended approach, seeking to identify their viewpoints on the strengths and areas for further development evident within the relevant UoD undergraduate and ECT courses (with a particular emphasis on equity and excellence), to identify differences and synergies and to inform future developments within ESW.

A summary of the findings from this phase is contained in Table 1.

Table 1 UoD Teacher Education Courses: Strengths, Development Areas and Significant Comments

Views of Participant Group	Areas of Strength	Areas for Further Development	Comments
NQTs	Collegiate approach. Supportive culture.	Amplify advice on addressing poor behaviour and ASNs. Make explicit links to GTCS SPR	Placements need to be more focused on the professional file and the GTCS SPR.
Teacher Educators	The "attainment gap" is well-linked to wider issues of poverty and HWB. This is well structured, using a variety of resources. The new Masters modules on Equity and Equality and Teaching and Learning for Equity. Neoliberal hegemony is challenged effectively. Clear focus on informed KU of pedagogy to improve T&L. Permeating foci on values and societal issues.	Importance of role of the teacher should be more prominent in courses; too much emphasis on inter-agency working. Emphasise teaching fundamentals. Provide a more unified explanation of Scottish Government policy initiatives; offer more opportunities for students to debate these policies – philosophy and implementation.	Changing policy initiatives are challenging to accommodate timeously in Masters courses; less of an issue in PGDE. We are placing many students in very challenging classes at very early stages in their development; good planning and preparation for this is essential. Are we losing sight of the wider aspects of learning e.g. the Arts?
Head Teachers (HTs)	Students/NQTs are willing to engage in professional dialogue. Students/NQTs are willing to engage in professional reading and professional learning opportunities (better than more established staff).	WE ALL need to work harder on developing a culture that understands the 'story behind the learner'. Link PGDE year more closely to Induction year. Improve mentoring for ECTs. Improve LA/TEI partnerships - damaged by staff turnover.	Challenges for ECTs of absorbing wider school context while concentrating on teaching well. A sense that the Donaldson SCQF 11 vision is slipping. Issues re NQTs changing schools after Year 1. Remove dependence on ES
Local Authority (LA) Staff	Students/NQTs are good at working collaboratively. Students/NQTs are willing to engage in professional reading and professional learning opportunities.	Improve LA/TEI partnerships, as these have been damaged by staff turnover. Continued need for a focus on how the informed use of data can help to address the attainment gap.	Schools are struggling to cope with requests for placements. Need for care by schools and TEIs in avoiding placements that might not be best suited to the student's stage of development.

Despite attempts to focus discussion on equity and attainment and on courses/methods to improve these, these findings suggest that there was a significantly greater concentration on equity among UoD staff, all of whom were already engaged in devising better ways of assisting students' learning about, and sharpening their focus on, equity and attainment than in the other groupings. In the other three constituencies, all of whom appeared focused on more general issues such as probation, placements, becoming an effective teacher and collaborative working in school, the focus on equity and attainment was less (to much less)

evident, although it did appear with all 3 groups to a limited extent. It was particularly interesting that Numeracy, which is deliberately highlighted in our courses - more than Literacy and HWB - as it is the greatest issue for at least two of the LAs (and is known by them to be so) – did not emerge within the interviews, except from UoD staff. This issue will be further considered in considering the analysis of findings within Part B of this section.

Particularly in the earliest cycles of discussion and self-analysis, there was some limited evidence within some discussion groups of underlying neo-liberal values related to poverty. Since this appeared to lead to negative views about learners from impoverished backgrounds in a very few cases, a particular emphasis has been adopted in staff and student discussions to remove such concerns. Work has been carried out to challenge deficit models and to assist colleagues and students in building more positive models by influencing teachers and structuring research carried out, emphasising the need to improve the situation of local communities through research.

Although not a part of the interview process summarised in Table 1, there has been consistent and, in a majority of cases, significant feedback throughout the project from students participating in the ECT and PGT courses that they feel better equipped to deal with inequity. Across our four associated LAs, both HTs and relevant LA personnel have also consistently noted the overall strength of candidates for DHT and HT posts who have undertaken Into or In Headship and/or who are pursuing a full Master's degree, especially when compared to candidates who have not had such learning experiences. This is also true of ECT Teaching and Learning for Equity students but there are still too few of these for consistent messages about their quality to have returned from HTs or LA staff to any extent.

B   Student Research

Section B relates to the third aspect of the UoD analytical framework (p.16).

The UoD project has encouraged groups of students to learn about and evaluate Scottish and international approaches to redressing the impact of inequity in its various manifestations (both on learning and attainment), to carry out further research on equity and attainment and to use their improved knowledge, skills and understanding of these key issues in planning a significant intervention based on the identified needs of their learners and their school and wider communities. ESW staff members have supplied the academic input and have been engaged over the last three to four years in developing a strategic overview of students' activities through analysing data derived from the students' work (see Part C of this section).

(i)   Undergraduate Students

As noted in Part A of this Section, undergraduate students are now carrying out initial research into equity and designing interventions to combat inequity. Since this is a relatively new addition to the undergraduate course, the two years of data related to this research has not yet been considered alongside the longer-term findings from ECT student research and other SAC-related research. It is intended to add this data to the wider set of data obtained

from ECT and PGT students and to analyse the extent to which the connections between the findings of their research and the nature of the intervention(s) chosen by them becomes more sophisticated. Given that the extent and nature of the undergraduate research is not as comprehensive as that carried out by ECT and PGT students, this will require some work by UoD staff to compare and align findings. This is considered further in Section 11, with other related issues.

(ii)   ECT Students

ECT students (and some later-career students) gained access to new PGT modules and the Certificate course in Teaching and Learning for Equity in 2016-17. Three cohorts of ECT students have completed the course (but the fourth cohort has been delayed because of the global Covid-19 pandemic); several of the students listed in Table 2 have used this learning opportunity as a focus within their Masters pathway.

Almost all students have carried out two phases of research:

I.   Involving academic research on the factors linking deprivation and low achievement, researching appropriate strategies to improve learning in one or more of the three key areas of literacy, numeracy and/or health and wellbeing, analysing the schools' catchment and the SIMD profile of the school, identifying the impact on key pedagogical and pupil engagement issues in their class and combining the outcomes of this research to identify a practitioner research project in which they would implement an intervention (as part of class work and of the school improvement plan (SIP)) in one or more of the three key areas.

II. Involving gathering, analysing and using data, amending their practice in the light of the data gathered, implementing an intervention and producing a research report on the two phases of their work, along with a "plain English" PowerPoint/Prezi presentation for parents to explain how their children's learning had been enhanced and improved.

Table 2a contains the equity-related issues identified by each of the ECT students and the curricular area which formed the specific focus of their intervention:

Table 2a   ECT Student Research and Interventions to Improve Equity

Cohort	Student	Issue 1	Issue 2	Principal Focus
EC1	1	Poverty	Poor Literacy	Literacy
EC1	2	Poverty	Closing attainment gap	Literacy
EC1	3	Poverty	Closing attainment gap	Specific Pupil Group
EC1	4	Poverty	Student engagement	Literacy
EC1	5	Deprivation	Low attainment	Numeracy
EC1	6	deprivation	Closing gender gap	Pedagogy
EC1	7	Deprivation	Poor Literacy	Literacy
EC1	8	Poverty, housing	Specific Learner Needs	HWB
EC1	9	Poverty	Closing attainment gap	Literacy
EC1	10	Poverty	Low attainment	Literacy
E2	11	Poverty	Low attainment	HWB
EC2	12	Closing the Gap	Poor Literacy	Literacy
EC2	13	Poverty	Parental engagement	HWB
EC2	14	Poverty	Attachment	Literacy
EC2	15	Child poverty	Poor behaviour	HWB
EC2	16	Poverty	Closing attainment gap	HWB
EC2	17	Closing attainment gap	Poor Literacy	Literacy
EC2	18	Inequity	Poor Numeracy	Numeracy
EC2	19	Deprivation	Closing attainment gap	Literacy
EC2	20	Poverty	Poor Literacy	Literacy
EC3	21	Deprivation	Low attainment	Numeracy
EC3	22	Poverty	Poor Literacy	Literacy
EC3	23	Social inequity	Social immobility	Pedagogy
EC3	24	Poverty	Poor Literacy	Literacy
EC3	25	Pupil voice	Deprivation	Numeracy
EC3	26	Poor motivation	Poor Literacy	Literacy
EC3	27	Deprivation	Parental engagement	Pedagogy
EC3	28	Poverty	Poor Literacy	Literacy
EC3	29	Deprivation	Setting	Pedagogy

The results are analysed in Part C below.

(iii)   PGT Students

Postgraduate students in taught courses (PGTs), such as Into Headship, In Headship and a range of Masters-level pathways, have also been encouraged to be involved in academic research on the factors which link deprivation and low achievement, although at a more strategic level than their ECT colleagues. Those who were prepared to undertake a PGT project which met the criteria for the UoD SAC project have been included in the data set.

Their research involved them in researching, planning, implementing and reporting upon a strategic project which they lead within their school. The project must be relevant to their school improvement plan (SIP) and they are encouraged to consider SAC, PEF and the NIF as key foci for their strategic project. As a consequence, a significant subset of each of four cohorts of PGT students has taken up this option for their final project. Once again, several students listed in Table 2b have used this learning opportunity as part of their Masters pathway.

Table 2b PGT Student Research and Interventions to Improve Equity

Cohort	Student	Issue 1	Issue 2	Principal Focus
PG1	30	Deprivation	Leadership of learning	Improved learning
PG1	31	Deprivation	Parental engagement	HWB (& Communication)
PG1	32	Closing the Gap	Raising Attainment	Specific Pupil Group
PG1	33	Positive destinations	Community engagement	Curriculum
PG1	34	Deprivation	Student engagement	HWB
PG1	35	Inequity in digital learning	Quality of L&T	Digital Learning
PG1	36	Inequity in digital L&T	Quality of L&T	Digital Learning
PG2	37	Inequity: Special Needs	Improving Lit. & Num.	Specific Groups
PG2	38	Inequity of Support	Parental engagement	HWB
PG2	39	Poor emotional resilience	Poor behaviour	HWB
PG2	40	Poverty-related gap	Positive destination gap	Specific Pupil Group
PG2	41	Closing the Gender Gap	Poor Literacy	Literacy
PG2	42	Closing attainment gap	Leadership of learning	Pedagogy
PG2	43	Closing attainment gap	Specific Learner Needs	Specific Pupil Groups
PG2	44	Deprivation	Poor behaviour/relns.	HWB
PG2	45	Deprivation	Split community	Vison, engagement
PG2	46	Closing attainment gap	Specific Learner Needs	Self-analysis
PG2	47	Closing the Gap	Raising Attainment	Closing the Gap
PG2	48	Closing attainment gap	Staff Attainment Skills	Pedagogy
PG3	49	Poverty-related gap	Closing attainment gap	Pedagogy
PG3	50	Positive destinations	using ICT to support learn	Digital Learning
PG3	51	Food poverty	Student engagement	HWB
PG3	52	Transition issues	Positive destination gap	Specific Pupil Group
PG4	53	Poverty-related gap	Student engagement	HWB
PG4	54	Inequity: Special Needs	Play-based learning	Specific Groups
PG4	55	Improved community eng	work-related learning	Pedagogy
PG4	56	Very High deprivation	Student engagement	HWB
PG4	57	Inequity of Support	Community engagement	HWB
PG4	58	Deprivation	Poor Numeracy	Numeracy
PG4	59	Inequity in Literacy	Improving reading	Literacy
PG4	60	Underachievement	Inequitable curriculum	Curriculum

The results are analysed in Part C below.

C Staff Analysis of Student Approaches and Interventions.

The research and actions of several groups of ECT and PG students were analysed in early 2021. In total, the research findings and chosen interventions of 60 students provided the data sets for this work. (N.B. A further 8 sets of ECT and PGT students' data have since become available but these will be included in the 2022 analysis). Student activities studied were drawn from students working within the 4 LAs with which the UoD works most closely; three of the four LAs are well-represented in both tables and the fourth is strongly represented in Table 2a, but is absent from Table 2b.

Members of the UoD project team have been engaged in gathering data on student projects from both groups (ii) and (iii) and it has been noted earlier that group (i) and the late entries from groups (ii) and (iii) will be added to this programme at a later time.

Tables 2a and 2b have been selected from the larger body of data collected; they help provide a high-level summary of the UoD Team's analysis of students' research. The data sets collected include:

1. The nature and frequency of equity-related issues identified by students.
2. The nature and quality of evidence gathered by students for identification of each equity-related intervention.
3. The categories and nature of the interventions carried out by students across relevant courses.
4. The correlation between students' identification of deprivation/learning issues within their LA/school/class and their rationales for intervention.

Much of the fine detail of catchment/school/class data and of the specific actions of individual students and the outcomes generated by them have been omitted here, partially to ensure student anonymity (as there are still fewer than a hundred students whose actions are being reported upon) and partially to avoid identifying LAs. These data sets include:

1. The effectiveness of students' use of data as a tool to support decision-making
2. Students' individual rationales for reconciliation (or not) of societal and learning issues where these appear to conflict
3. School, LA and national influences – some more significant than others from school to school - on students' decision-making
4. Students' individual understanding of national, LA and school policies and initiatives, how they interact and how they impact on their own work in the context chosen
5. The extent to which students have taken all appropriate factors into consideration in forming their conclusions about which intervention(s) to pursue
6. Our own analysis (and that of the course tutors) of the appropriateness of the students' choices of intervention.
7. The nature and extent of interventions by course tutors to support and advise students where the student intervention appeared either to be inappropriate or not the most appropriate.

The second group of data has been retained and will be anonymised for future publication.

i)   Analysis of ECT Students' Research Projects

Across the 3 cohorts analysed in Table 2a, 29 ECT students completed the final project of the Teaching and Learning for Equity module, passed the course and are represented in the table. A further 4 students failed and a small number of others had deferred their studies for appropriate reasons or have not yet completed their studies (e.g. due to the COVID-19 situation) at the point of collation and analysis of data in early 2021; these students are not (in some cases, not yet as noted above) represented. In each cohort, students were predominantly from Primary School contexts, with a small number from special needs environments.

The catchment/class issues identified by students as impacting on the learning of their class were as follows:

a) Poverty   (16 instances: 55%)
b) Deprivation   (7: 24%)
c) Social inequity   (2: 7%)
d) A need to "Close the gap"   (2: 7%)
e) Others   (2: 7%).

Deprivation was consistently defined by students as encompassing more factors than poverty alone (e.g. health, young carers, parenting issues). Social inequity was identified in schools where two or more contiguous parts of the catchment demonstrated significant SIMD differences. "Others" included a case where a pupil survey had identified a need and a case where poor motivation was an issue, for various reasons.

Students also identified a consequent learning issue resulting from the catchment/class issue. All four LAs from whom the students were drawn have significant learning issues in Literacy and Numeracy. In at least two of the four, Numeracy is a significantly greater issue, particularly after Primary 3; in one, Literacy and Numeracy are approximately equally significant.

The main learning issues identified by students as impacting on the learning of their class were as follows:

a) Attainment (either 'closing the gap' or overall poor attainment)   (10: 33%)
b) Literacy   (9: 31%)
c) Pupil/Parent Engagement   (2: 7%)
d) Numeracy   (1: 3%).

The remaining 7 entries were all individual entries (gender inequity, specific pupil needs, attachment issues, behavioural issues, social immobility, deprivation and setting) and were generally specific to a small to very small number of pupils in the class.

Given the Numeracy issues across the 4 LAs and the focus of the course itself on improving teaching and learning, the balance of specific issues was surprising, although the focus on attainment appeared to reflect teachers' concerns about how "successful" they and their classes were perceived to be – by parents, the school and the LA. In an attempt to understand how students were approaching the perceived issues of inequity, UoD staff analysed the nature, focus and outcome of the interventions they carried out. One collated data set is published here, although the UoD team holds further, more detailed data for future publication.

The principal intervention areas were: (i) Literacy (mostly related to Phonics) (15: 52%), (ii) HWB (5:17%), (iii equal) Numeracy (4: 14%), (iii equal) Pedagogy (4: 14%). The remaining instance related to the specific learning needs of a small group within the class.

Discussion

There appears to be a significant mismatch between the specific issues identified for intervention and the interventions carried out. Slightly fewer than a third of the learning issues identified related to Literacy but over a half of the interventions were to improve Literacy. Despite the background LA or school issues with Numeracy, only one student identified Numeracy as an issue, yet 4 students decided to carry out a Numeracy intervention (the others being to address general low attainment or deprivation). Three students had identified engagement/ behaviour issues but 5 decided to carry out an HWB intervention (the others being to address general low attainment or specific needs). One pedagogical intervention addressed an issue of setting but the others were attempts to address parental engagement, social immobility and gender issues. Although a major part of the work presented by UoD course staff relates to consideration of LA/school issues and identification of individual learners' issues, it appears that this did not always carry through into the identification and implementation by students of appropriate interventions.

ii)   Analysis of PGT Students' Research Projects

Across the four postgraduate cohorts of middle/senior school leaders in Table 2b, 31 PGT students (from a larger set of students undertaking these courses) completed a final equity-related project and passed the course. None of the students who undertook an equity-related project failed the course, although 4 of the students who took a non-equity project did fail. Several others have deferred their studies for appropriate reasons, or have not yet completed their studies (e.g. due to the COVID-19 situation) at the point of collation and analysis of data in early 2021; these students are not (in some cases, not yet as noted above) represented. In each cohort, students were from Primary School or Secondary School contexts, with a Primary majority, and also a small number from special needs environments.

The main overarching catchment/school issues identified by PGT students as impacting on the learning of their school were as follows:

a) Closing the (varied) Gap (10: 32%)
b) Deprivation (7: 23%)
c) (equal) Digital learning inequities (2: 6%); specific pupil needs, (2: 6%); Support needs, (2: 6%); Positive destinations (2: 6%)
e) Others (community engagement, emotional resilience, food poverty, Literacy, transitions, underachievement) (6: 20% in total).

Deprivation was identified by students in a manner similar to the ECT definition.

The main issues identified by students as deriving from the identified school/catchment issues were as follows (1 student identified 2 issues, providing 32 in total:

a) Engagement (by parents, learners or the community) (9: 28%)
b) Weak overall attainment (4: 13%),
c) (equal) Literacy (3: 9%)
     (equal) DYW/positive destinations (3: 9%).

Five factors: leadership of learning, learning and teaching, Numeracy, behavioural issues and specific learner needs tied for fifth place with two occurrences. The remaining 3 entries were all individual entries (digital learning, play-based learning and curricular structure) but were generally major whole-school projects affecting all or many learners and teachers.

The balance of specific learning issues was also surprising here, with little or no emphasis on Numeracy or Literacy, although this time the focus on attainment clearly identified students' concerns about overall attainment and this was particularly marked in the minority group of secondary Deputes. In an attempt to understand how students were approaching the perceived issues of inequity, UoD staff analysed the nature, focus and outcome of the interventions they carried out. In general, these were larger-scale interventions than those seen with the ECTs, but a significant group of primary-based students (almost all from small schools) focused on the specific needs of a small group, or groups. Even in these latter cases, Literacy and Numeracy were uncommon.

Again, only one data set is quoted here. The main intervention areas were: (i) HWB (9: 29%), (ii) specific learning needs (6: 19%), (iii) pedagogy (4: 13%), (iv) digital learning (three large-scale secondary projects to enhance the learning of all/many pupils) (3: 10%). Two themes tied for fifth place with two occurrences each – curricular structure (secondary) and Literacy (primary). The remaining four instances related to leadership of learning, curricular tracking, positive destinations and Numeracy.

Discussion

Again, there appears to be a mismatch, more so between the school/catchment issues and the learning issues than between the specific issues identified for intervention and the interventions carried out. This is quite surprising given the greater experience. promoted status and, at least theoretically broader vision, of these students. Almost a third of the learning issues identified related to pupil/parent/community engagement and this aligned well with the HWB interventions. After this identifiable correspondence, the remaining issues and interventions are frequently difficult to match up, with Literacy and Numeracy only the subjects of intervention to a very limited extent.

iii)   Comparative Analysis of ECT and PGT Students' Research and Interventions

Table 3 supports comparative analysis of ECT and PGT students' research findings and interventions:

Table 3a ECT/PGT Student Research Findings and Interventions to Improve Equity

Issues	Societal/catchment		Learning/teaching		Interventions	
	ECTs	PGs	ECTs	PGs	ECTs	PGs
Poverty	55%	3%				
Multi-Deprivation	24%	23%	3%			
Social Inequity	7%		3%			
Closing the Gap(s)	7%	32%				
Digital Learning		6%		3%		10%
Specific Needs		6%	3%	6%	3%	19%
Support		6%				
Attainment (Lit/Num)		3%	33%	13%		
Literacy		3%	31%	9%	52%	6%
Parental Engagement		3%	7%	28%		
Numeracy			3%	6%	14%	3%
Behaviour			3%	6%		
HWB					17%	29%
Pedagogy				6%	14%	13%
DYW / +ve Destinations		6%		9%		3%
Transitions		3%		6%		
Leadership						3%
Play				3%		3%
Curriculum				3%		9%
Other	7%	6%	14%			

The most evident feature arising from an initial analysis of Table 3a relates to the evident differences between ECT and PGT students in terms of identified research findings and chosen interventions. This is perhaps most evident in the identification of the balance of societal and catchment issues where almost all ECT students opted for a form of words which related to poverty and deprivation whereas PGT students opted for a more widespread set of issues. Given their stages of professional development and experience, this does not appear surprising, although other factors, such as the appearance of secondary school-based students in the PGT ranks also appears to have influenced students' analysis.

However, the table merits closer inspection: therefore, to support a closer analysis of the issues evident In Table 3a, it has been subdivided it into three zones, as presented in Tables 3b, 3c and 3d.

Table 3b Major Societal/Catchment Issues

Issues	Societal/catchment		Learning/teaching		Interventions	
	ECTs	PGs	ECTs	PGs	ECTs	PGs
Poverty	55%	3%				
Multi-Deprivation	24%	23%	3%			
Social Inequity	7%		3%			
Closing the Gap(s)	7%	32%				
Digital Learning		6%		3%		10%
Specific Needs		6%	3%	6%	3%	19%
Support		6%				

Table 3a shows 93% of ECT students' identified societal issues and 76% (including a portion from lower rows of the table) of PGT students' societal issues. By comparison, only 9% of the learning issues lie in this zone for either group. However, this does not necessarily imply that learning issues are unrelated to broader societal issues. There are several reasons why learning issues may lie elsewhere but still be related to broad societal problems. Interestingly, only 3% and 29% respectively of the chosen interventions lie here and none are directly targeted at addressing poverty or deprivation issues (although some of the interventions in other parts of the Slide 5 table are related to these).

Digital learning is highlighted in green here as one *might* have assumed that this could/would be an area of strength for addressing a range of learning deficits. It is also worth considering the axiom that poverty can inhibit young people's learning through lack of access to digital resources, but there is relatively little evidence of either factor being addressed here. Specific Needs are highlighted in pink as the response of almost 1 PGT student in 5, although only identified as a societal or learning issue by 6% of them.

This reflects a wider pattern as the response to a perception of broad societal or learning issues for a significant minority of PGT students was to intervene to address the needs of one to four learners in their class. This is neither an impossible outcome, nor always an inappropriate one as it is possible that the composition of the student's class is itself skewed in some way, requiring specific interventions for only a few members. However, the intention of the project was that students would identify an issue pertaining to inequity, poor learning and/or low attainment which was widespread within their class/school/community and intervene to improve that issue. Analysis of the detailed data held by UoD project staff suggests that, in most of these instances, this was not so.

Table 3c Major Learning/Teaching Issues

Issues	Societal/catchment		Learning/teaching		Interventions	
	ECTs	PGs	ECTs	PGs	ECTs	PGs
Attainment (Lit/Num)		3%	33%	13%		
Literacy		3%	31%	9%	52%	6%
Parental Engagement		3%	7%	28%		
Numeracy			3%	6%	14%	3%
Behaviour			3%	6%		

The major issues related to learning and achievement – the areas of Literacy, Numeracy, Attainment, Parental Involvement and Behaviour – all appear in Table 3c. No ECT student identified any of these as a catchment issue, despite weak parental engagement being evident in the school plans of a minority of these students. 9% of PGTs' societal issues do reside here, although only one of the students identified attainment issues in Literacy/Numeracy, specific Literacy learning issues or parental engagement issues. No student of either group saw Numeracy as a widespread issue across their catchment.

Analysis of individual students' project reports showed that the attainment issues identified by both groups of students in the Learning & Teaching column are weighted approximately 2:1 towards Numeracy in both sets of students' reports. Combining these with the Learning issues, about 42% of ECTs and 14% of PGTs saw Literacy (learning or attainment) as a learning/attainment problem in their class. Correspondingly, about 25% of ECTs and roughly 15% of PGTs saw Numeracy learning or attainment as a learning problem in their class. Examination of published LA statistics for these authorities suggests that, to varying degrees, the opposite pertains, as Numeracy is generally a greater LA-wide issue than Literacy across the LAs concerned – although this does vary across schools).

52% of ECT students - more than the identified need - decided to carry out a Literacy intervention (with varying degrees of justification and, in some cases, despite tutor/school advice to the contrary). However, only 6% of PGT students intervened in Literacy, although this was less than half of the identified need. In Numeracy, however, only 14% of ECT students (half the need) and 3% of PGT students (a fifth of the need) intervened in Numeracy.

Table 3d Other Significant Areas of Intervention

Issues	Societal/catchment		Learning/teaching		Interventions	
	ECTs	PGs	ECTs	PGs	ECTs	PGs
HWB					17%	29%
Pedagogy				6%	14%	13%
DYW / +ve Destinations		6%		9%		3%
Transitions		3%		6%		
Leadership						3%
Play				3%		3%
Curriculum				3%		9%
Other	7%	6%	14%			

In Table 3d, the remaining quarter of PGT students' identified learning issues may be seen, as are the remaining 14% of ECT students' identified learning needs: the latter group are not linked to any of the major issues above but are listed individually on p.30. Several areas are highlighted in pink as interventions in these zones appeared to have less validity, based on analysis of students' own findings, their school/class data, the relevant school improvement plan and/or LA plan and national frameworks such as the National Improvement framework (NIF).

It is particularly interesting that almost one-third (31%) of ECT students chose to intervene either with respect to an HWB-related issue or a broad-spectrum pedagogical issue. A significant majority of these cases did not relate to a specific need or issue identified within these students' research. This issue has greater significance with PGT students, where over two-fifths (42%) made such interventions. Students in both the ECT and PGT categories largely came from primary school or special school backgrounds. In a majority of cases, they also appeared to demonstrate a more limited understanding of the wider curriculum in their project reports, focusing almost exclusively on Literacy, Numeracy and Health & Wellbeing (HWB). There also appeared to be a lack of clarity – on a wider basis than solely this group – about the NIF itself and its meaning for their work.

The PGT students also have an 18% "tail" of largely one-off interventions in developing the Young Workforce (DYW), leadership, play and the curriculum, despite there being limited (or no) research evidence apparent in their project reports to support these actions. A majority of these occurred as a result of "external" influences (i.e. directly by school leaders, through the school improvement plan or due to LA requirements), in some cases despite their own findings and tutor involvement with the student and/or school.

Discussion

There are clear, but anticipated, differences between the research findings and/or interventions of the ECT students and those of the PGT students. Based on interpretation of their project reports, these appear to relate to several factors:

- The breadth (and depth) of experience of PGT students compared to ECT students: this appears particularly true with respect to Catchment-based issues where ECT students have a largely homogeneous (93%) view that almost all issues are directly related to poverty and deprivation whereas only 58% of PGT students saw poverty and deprivation as the key catchment issues. Altogether, ECT students identified approximately half a dozen catchment issues whereas PGT students identified over a dozen. The concept that experience is the key issue here is supported by the content of project reports wherein ECT students tended not to seek issues beyond poverty and deprivation, thus mimicking much of their own course-based learning but omitting the parts where they are asked to look beyond the main national policy factors and to seek more local issues. PGT students generally gave a more rounded analysis of their catchment and drew to a lesser extent upon the national policy documentation.
- Primary school teachers tended to adhere more closely to the national policy imperatives (e.g. countering the effects of poverty of multiple deprivation) and key areas than secondary school teachers. Secondary school teachers appeared almost exclusively in the PGT group, featuring as almost a half of those involved there. The overall balance and foci of the two student groups are thus significantly different.
- ECT students intervened to a much greater extent in aspects of Literacy than their PGT counterparts. On a lesser scale, this is also true of interventions in Numeracy.
- PGT students intervened to a greater extent in aspects of HWB than their ECT counterparts. To a greater extent, this is also true of specific interventions with individuals and small groups within a class.

There are also clear discontinuities between the societal and learning issues found through student research. It is equally true that there are some profound discontinuities between societal issues and the interventions carried out. This might be expected, as students will, perhaps inevitably, find it easier to relate the identified learning issues to teaching interventions. However, issues of low attainment (one-third of all ECT learning issues and one-eight of their PGT equivalents) went unaddressed by any direct, targeted intervention. Some of these were, however, addressed by general pedagogical interventions to be carried out across the school and some were addressed by HWB initiatives, although no evident link could be found to these.

The over-emphasis on Literacy interventions amongst ECT students has already been noted. This was not so with PGT students where almost no such interventions were carried out. Numeracy has again been covered. Of particular concern is that poor learning and underachievement in Numeracy appeared as a major target within relevant LA plans and

some school plans but was only identified to a very limited extent by students and addressed to no greater extent, despite prompting by school and LA plans and by tutor interventions.

There are some surprising voids: neither the quality and nature of the school curriculum nor the quality of leadership featured to any extent. Whilst the latter may have been due to delicacy on the part of ECT students about becoming involved in issues that are beyond their level of responsibility, this is not so for the PGT students where leadership was, in many cases, a significant aspect of their roles.

The curriculum, however, is another matter. Given the highly significant and often repeated curricular changes occurring (at least in secondary) due to the appearance of Curriculum for Excellence from 2010, it appears very strange that only one secondary student addressed this area; the student concerned had gained the agreement of their colleagues that the curricular changes introduced since 2010 had not effectively addressed inequity and led a full curricular review. Again, this may be less appropriate with ECT students, but the under-representation of curricular matters does not seem accurate. This is equally true of ICT-based learning which might have been expected to be highly visible as a counterbalance to inequity amongst both ECT and PGT students but was not.

Finally, ECT and PGT course tutors both noted a minority of students which appeared to try to choose an intervention which bore little or no relevance to the known and/or newly researched issues of their school and its local community. Many of these were diverted to more successful areas by partnership working between course tutors and schools. However, this category was heavily represented within the small group of failed students.

C Wider Research on Improving Equity and Attainment.

The UoD project team carried out research into international and UK approaches to improving equity and attainment. This was done for two reasons: (a) to support development of appropriate aspects of the new or improved courses related to equity and attainment and (b) to provide a research basis for analysis of Scottish, LA, school and individual findings and interventions.

This work has examined pedagogical, political and transnational influences on these topics and has analysed the recommended approaches and interventions where quantitative and/or qualitative data was available for scrutiny. Of particular interest have been two themes:

- the work of the 9 Scottish "SAC Authorities" and their ongoing outcomes
- the transnational neoliberal drive to direct approaches to combatting inequity and the response of some academic and teacher groups to this drive.

Portions of this work may be found within new/revised course structures and content. However, after the end of the national SG/SCDE SAC Research Project, papers will be completed and published by members of the UoD project team on these themes.

10. Conclusion

Significant work has been carried out within the School to address the aims of the project. This has included:

- upgrading and refocusing relevant ITE and postgraduate courses to better address equity and attainment
- the development of bespoke units and a certificate course for newly (and recently) qualified teachers incorporating specific foci related to equity, increasing attainment, the use of a research-based approach in such activities and the identification and use of appropriate interventions to increase equity and attainment
- three cycles of staff discussion, information and training related to the above actions
- an attempt to support and further develop commitment by all relevant members of UoD staff to these principles. This has been accompanied by consultancy in one associated local authority, particularly with respect to the use of research in combatting inequity and raising attainment, and also joint working with another associated local authority.

The findings from this UoD SAC research project have provided evidence that ESW had a strong capacity to support and encourage teacher learning and research related to equity and attainment/excellence. Further findings have identified that this capacity has been increased through improvements to the set of learning pathways and courses provided, as well as the quality and nature of learning experiences within each course.

Compared to the period before the inception of the SG/SCDE SAC Research Project, a significantly broader set of UoD student teachers at all levels from undergraduate to headteacher have undertaken research on equity and attainment as a result of this project and have carried out interventions at every level from addressing the needs of individuals/small groups of learners to carrying out major whole-school improvements, all designed to reduce the impact of inequity and to improve learning and attainment. That research has itself been analysed by members of the UoD staff team, providing insights into the processes which class teachers and school leaders carry out in addressing inequity and underachievement.

Although there was a significant body of LA-funded (and thus unpublished) research on SAC within UoD, this national SAC research project has confirmed and consolidated the findings of some of that previous research as well as providing a set of new findings to set in the public domain. This current phase of SAC research has demonstrated that equipping teachers (at all levels) to understand, research and identify issues related to equity and attainment does appear to improve their practice. However, there is further work to be done in teacher education (at least within UoD, although this may be a wider issue) to ensure that the investigation of catchment/class/individual equity issues is appropriately linked by all of our students (and thus, almost certainly, by all teachers) to the accurate identification and implementation of interventions which are most appropriate to addressing the inequities and learning challenges uncovered.

A range of specific outcomes has also emerged with respect to the UoD research questions. These include:

1. **Addressing equity and attainment in our existing cours**es

All relevant ITE, ECT and PGT courses within ESW have been analysed, either three or four times. An initial course leader-based survey, followed by a full review of each course, led to a number of changes to the undergraduate course, extended provision within the set of courses appropriate for ECTs and provision of a wider set of pathways involving research on equity and attainment for PGT students, particularly middle leaders and aspiring/substantive headteachers. A first few students from the programmes supported by the UoD project have now moved on to using equity and/or the improvement of attainment as key foci within their full Masters degree programme.

UoD staff members' awareness of SAC, PEF, 'Closing the Gap'(s) and the NIF have been the subject of interviews, cross-course discussions and focus groups. The third research phase demonstrated a high degree of awareness of these issues among the staff sample chosen, although this has still to be more fully tracked across all educational staff members. Some input has also been made to SW and CLD students to ensure that their awareness of these agendas is also at an appropriate level. As well as these broadly-based analyses, some in-depth 'drilling down' has been carried out with staff members and with PGT students.

2. **Involving, training and equipping teachers and school leaders for active participation in research into equity, learning and attainment issues**

The principal foci of the UoD project with respect to teachers have been:

 (a) to equip them to research and analyse their own classes in order to identify issues of inequity impacting on learners' abilities to learn and attain at the highest possible level, and

 (b) to provide structured support for the development of their own abilities to develop and implement interventions to improve aspects of learning within their learner group(s).

There have been significant successes within these processes, as over 60 ECT and PGT students have completed courses in which they have successfully carried out the processes outlined in (a) and (b) above. Likewise, the amended ITE course is now supporting each cohort of undergraduate students in learning the basic processes of research and intervention, ready for more detailed application after graduation. The new module and certificate course in Teaching and Learning for Equity has seen three cohorts of students, almost all ECTs, complete the course by learning about equity and attainment, researching within this field and carrying out focused interventions to improve the learning of their class. A fourth cohort will begin after the summer break. Other Masters students have taken/are taking the course as part of their Masters degree. For students in promoted school posts, the Into Headship course has been enhanced to allow and encourage students to address equity and attainment as key elements of their research and their leadership project.

There have, however, been some issues, as staff changes in several associated LAs have seen interest in supporting the full Certificate course in Equity diminish, particularly in one LA, with significantly more students taking the key equity-related module than completing the full Certificate course. However, some of those students have used their equity module as part of a move upwards to a full Masters degree programme. UoD itself, also partially due to staff changes (3 of the original 4 members of the original UoD project team have either retired or

been gained a promoted post at another university), needs to be more proactive in internally highlighting, as well as externally advertising, the importance of this Certificate. (See Section 11.)

3. Involving university staff, teachers, headteachers and LA educational leaders in developing a 'research community' focused on equity and attainment

Significant numbers of individual ITE, ECT and PGT teachers have carried out individual research into equity and attainment, analysing issues at classroom and whole-school levels and carrying out class-based or whole-school interventions as a result of their findings (and as part of the wider SIP). A majority of ECT students and a large majority of PGT students have demonstrated that they have influenced classroom-level and/or wider practice. A minority of these have demonstrated improved attainment as a result.

From a group of UoD staff members engaged in wider SAC research activities, two have so far been involved in carrying out research related to students' actions within this project and one has recently completed a paper on LAs' responses to the national SAC project itself. Since the space to report findings related to analysis of students' research is strictly limited within this paper, a further paper will be produced to consider the linkages between classroom-level research, teacher interventions and school equity profiles.

As noted earlier, one of the four major purposes of the project was to develop an equity-based research community encompassing the 4 LAs, united and supported by UoD. This aspect has not (yet) happened to any significant extent, partially due to LA staff turnover (and consequent priority changes, as noted by LA interviewees themselves in Table 1) and partially due to greater financial and supply staffing constraints than had been expected in almost all of the 4 LAs. Mechanisms for resolving these issues and achieving this valuable outcome are discussed in Section 11.

4. Interaction Between Research Policy and Practice

Aspects of staff research carried out within the UoD Project suggest that there can be a disconnection between the development of national, local authority and/or school policy, the understanding of what is intended (within local authorities, schools and/or classrooms) and the quality and nature of implementation within individual schools and classrooms. Unfortunately, the findings suggest that this phenomenon does apply to the key issues of increasing equity and raising attainment, at least in some LAs and some schools. Recent staff research carried out by UoD staff members as part of this SAC Project (as reported in SERA SAC Seminar 1) suggests that, although both student teachers and more experienced teachers can develop the appropriate research skills to assist them in identifying inequity or low attainment and although they can be trained to understand how inequity/attainment can be addressed, they appear quite frequently to then carry out classroom interventions which address issues other than those which they have identified as key to the underachievement of their pupils.

11. **Taking ideas forward**

The Dundee SAC Project has resulted in the topic of equity becoming a central aspect of the teaching and learning experience on our programmes. In future, we shall aim to ensure that the emphasis on the aims of our work are not only central to our new ITE modules and Post Graduate Certificate courses but across all our programmes in a permeative manner. We are determined to ensure that a clear and informed focus on equity will be central to the teacher identity of those who study with us at the University of Dundee.

The UoD aspect of the national SG/SCDE SAC Project will continue, albeit in modified form, even though the national project is nearing completion. Although a significant majority of the research/learning strands identified in Sections 4-8 have been addressed, not all have been fully addressed, one has not (yet) been addressed to any significant extent and there is still significant work to do in further analysing the findings from student and staff research and then reporting upon these, although detailed initial high-level findings for some of research threads are contained in Section 9.

Several aspects of the UoD project require to be taken forward. These include:

1. Further refinement of relevant ESW teacher education courses to better equip student teachers at all stages of their careers to improve teaching, learning and attainment.
2. Specific attention to key ITE, ECT and PGT courses to support students in addressing the issues which their research identifies as crucial to improved learning and attainment by means of accurately focused interventions.
3. Further development of the undergraduate course to improve what is taught to students - and how - in the context of addressing inequity and improving attainment through research and focused interventions.
4. Addressing internal and external understanding of the Certificate course in Teaching and Learning for Equity, including publicity and improving the understanding of appropriate UoD members of staff and of appropriate LA staff, HTs and potential students.
5. Development of a mechanisms to support and develop Equity-based Research Communities, probably based within each local authority.

Course Improvements to Enhance Students' Abilities

Three phases of research and analysis have been carried out within this thread so far. The need now is for the ESW Leadership Team, with course leaders, to ensure that each of the relevant ITE, ECT and PGT courses is reviewed in the light of the need to provide appropriate learning, research and project work in the context of equity and attainment for students at each stage of their academic/professional development.

The findings of this report have identified two specific issues, as well as the overarching need to continue to sharpen the focus of all ESW teacher education courses on individual needs, equity, learning and improved attainment. The first of these requires ESW to further develop the ITE course to set a stronger foundation of knowledge and skills with respect to researching

pupil issues and needs and then identifying appropriate interventions to address the issues uncovered. The second requires this process to be carried through ESW's ECT and PGT course in a systematic manner appropriate to the stage and experience of the students concerned. This may require improvements to a range of courses for practising teachers and school leaders.

We aim to ensure that equity-related topics become a more prominent feature across the four research themes of our School. Although we already have some recent research projects focusing on equity-related topics connected with the impact of COVID-19 and with local authority implementation of SAC, we are planning how the themes of Practice and Pedagogy in particular, can contribute to our growing body of research into equity in education. We intend for our research to make a valued contribution to the wider discourse about equity in education and for it to impact on the continual development of our ITE and Post Graduate programmes.

Publicity and Understanding

Again, the findings of this report have identified two issues. The first, that of limited publicity for, and limited LA engagement with, the Certificate course in Teaching and Learning for Equity, has not stemmed the flow of students for the principal module but has significantly diminished the number going on to complete the Certificate course. Some students, however, have opted for a full Masters pathway strongly angled towards improving Equity and Attainment.

It is necessary, however, for ESW to publicise the course appropriately with all relevant LAs and to involve relevant LA coordinators in supporting and promoting the course. Equally, it will be necessary for ESW to ensure that all relevant staff understand the changing learning pathways and ensure that an Equity and Attainment Masters pathway for early and middle-career teachers is appropriately advertised and supported, alongside the Strategic Educational Leadership pathway incorporating the SQH and the Into and In Headship courses.

Research Community

Again, there are three issues to be taken forward here. The first concerns the incorporation of data from ITE students' research and interventions into the UoD staff data sets to support a broader analysis of students' understanding of (in)equity and of how they convert that understanding to appropriate action. Given that the extent and nature of the undergraduate research is not as comprehensive as that carried out by ECT and PGT students, this will require some work by UoD staff to compare and align findings.

The second relates to the development of a coherent and ultimately self-sustaining research community focused on mitigation of the impact of equity on teaching, learning and attainment is still very much 'works in progress'. The full development of a wider research community involving PhD students within the university and the full group of educational staff within ESW will need to be accomplished by other means than physical attendance at an ESW

Equity-Based Conference Day, although there is some concern within ESW (and across some other universities) that employing an on-line forum as a vehicle for such a complex development is not necessarily guaranteed to be successful. Other mechanisms (e.g. linkages to LA in-service days, joint planning with 'new' LA coordinators, use of existing UoD events and conferences and an on-line support forum) will need to be developed to take this forward. So far, a significant degree of progress has been made in establishing foundations for these subsequent moves. This will require effective partnership working for further progress to be made.

The third relates to LA cooperation and joint working. Significant changes within the central education teams of all four associated LAs have taken place over the last two-three years. In addition, many of the LA liaison staff were secondees who have been returned to their previous roles, often without replacement. The School of Education and Social Work's main Local Authority contact retired in December 2019. At this time a new management structure was taking shape within ESW and efforts to transition those working relationships with new staff were underway. The arrival of the COVID-19 pandemic proved to be a real hinderance to this work with time and effort being redirected to the immediate challenges for all our teacher education programmes. Therefore, one of our main targets for the forthcoming year is to re-establish and to reinvigorate our links and partnerships with our Local Authority partners in relation to this project. The promotion of our Post Graduate Certificate in Equity to teachers across our local authority partnerships will play a central in our future work in this area.

5. References   [1 page]

Bazeley, P. (2010). Computer-assisted integration of mixed methods data sources and analyses. In Tashakkori, A. & Teddlie, C. (Eds.), *Sage Handbook of Mixed Methods in Social & Behavioural Research* (pp.431-467). Thousand Oaks, CA: Sage.

Cameron, R. (2011). Mixed Methods Research: The Five Ps framework. *The Electronic Journal of Business Research Methods, 9*(2), 96-108. Retrieved from www.ejbrm.com

Cherryholmes, C.H. (1992). Notes on Pragmatism and Scientific Realism. *Educational Researcher, 14, 13-17.* Retrieved from: http://www.educ.ttu.edu/uploadedFiles/personnel-folder/lee-duemer/epsy5382/documents/Notes%20on%20pragmatism%20and%20scientific%20realism.pdf

Cohen, L., Manion, L., & Morrison, K. (2011). *Research methods in education.* Abingdon: Routledge.

Creswell, J.W. (2003). *Research design: Qualitative, Quantitative and Mixed Methods approaches (2nd ed.).* London: Sage Publications.

Creswell, J.W., & Plano Clark, V.L. (2007). *Designing and conducting Mixed Methods Research.* Thousand Oaks, CA: Sage Publications.

Creswell, J.W., & Tashakkori, A. (2007). Differing perspectives on Mixed Methods Research. *Journal of Mixed Methods Research, 1*(4), 303-308.

Crotty, M. (1978). *The foundations of social research: Meaning and perspective in the research process.* London: Sage Publications.

Denzin, N.K., & Lincoln, Y.S. (2003). *Strategies of Qualitative Inquiry (2nd ed.).* Thousand Oaks, CA: Sage Publications.

Education Scotland (2018). *Inspection of Local Authorities. How well is Dundee City Council improving learning, raising attainment and closing the poverty-related attainment gap? Livingston, Scotland: Education Scotland*. Retrieved from: www.education.gov.scot/Documents

Fielding, M. (2006). Leadership, personalization and high performance schooling: naming the new totalitarianism. *School Leadership & Management*, 26(4), pp. 347-369.

Fitzgerald, T. (2009). Just leading? Social justice and socially just outcomes. *Management in Education*, 23, (4), pp. 155-160.

Goddard, J.T. (2007). School leadership and equity: results from an international comparative study*. School Leadership & Management* (formerly *School Organisation*), 27(1), pp. 1-5.

Greene, J. C. (2007). *Mixed methods in social inquiry.* San Francisco, CA: John Wiley & Sons.

Guba, E.G., & Lincoln, Y.S. (1994). Competing paradigms in Qualitative Research. In N.K. Denzin & Y.S. Lincoln, *Handbook of Qualitative Research* (pp. 105-117). Thousand Oaks, CA: Sage Publications.

Johnson, R.B., & Onwuegbuzie, A.J. (2004). Mixed Methods research: A research paradigm whose time has come. *Educational Researcher, 33*(7), 14-26. Retrieved from www.tc.umn.edu/~dillon/CI%208148%20Qual%20Research/Session%2014/Johnson%20&%20Onwuegbuzie%20PDF.pdf

Kuhn, T.S. (1962). *The Structure of scientific revolutions.* Chicago, IL: University of Chicago Press.

Mertens, D.M. (1998). *Research methods in education and psychology; Integrating diversity with quantitative and qualitative approaches.* Thousand Oaks, CA: Sage.

Mertens, D.M. (2003). Mixed methods and the politics of human research: the transformative-emancipatory perspective. In A. Tashakkori & C. Teddlie (Eds.). *Handbook of mixed methods in social and behavioral research.* Thousand Oaks, CA: Sage Publications.

Morgan, D.L. (2007). Paradigms lost and pragmatism regained. Methodological implications of combining qualitative and quantitative methods. *Journal of Mixed Methods Research. 1*, 48-76.

Morse, J. (2003). Principles of mixed methods and multimethod research design. In A. Tashakkori & C. Teddlie (Eds.). *Handbook of mixed methods in social and behavioral research.* Thousand Oaks, CA: Sage Publications.

Onwuegbuzie, A.J., & Collins, K. (2007). A typology of Mixed Methods sampling designs in social science research. *The Qualitative Report, 12*(2), 281-316. Retrieved from: http://www.nova.edu/ssss/QR/QR12-2/onwuegbuzie2.pdf

Organisation for Economic Co-operation and Development (OECD) (2012). Equity and Quality in Education: Supporting Disadvantaged Students and Schools. Retrieved from http://dx.doi.org/10.1787/9789264130852-en

Patton, .Q. (1990). *Qualitative evaluation and research methods* (2nd ed.). Newbury Park, CA: Sage Publications.

Sarantakos, S. (2005). *Social research (3rd ed.).* Basingstoke: Palgrave Macmillan.

Scottish Government (2011). Teaching Scotland's Future: Report of a review of teacher education in Scotland. Edinburgh: The Scottish Government. Available online. Retrieved from: http://www.scotland.gov.uk/Resource/Doc/337626/0110852.pdf

Scottish Government (2015). *Scottish Attainment Challenge*. Retrieved from http://www.gov.scot/Topics/Education/Schools/Raisingeducationalattainment

Scottish Government (2016). *Delivering Excellence and Equity in Scottish Education.* Edinburgh: Scottish Government.

Serpieri, R. (2009). A 'war' of discourses. The formation of educational headship in Italy. *Italian Journal of Sociology of Education*, 1, pp. 122-142.

Tashakkori, A., & Teddlie, C. (Eds.). (2003). *Handbook of mixed methods in social and behavioral research.* Thousand Oaks, CA: Sage Publications.

Tashakkori, A., & Teddlie, C. (Eds.). (2010). *Sage handbook of mixed methods in social and behavioral research.* Thousand Oaks, CA: Sage Publications.

Teddlie, C., & Tashakkori, A. (2009). *Foundations of mixed methods research: Integrating*

quantitative and qualitative approaches in the social and behavioral sciences. Thousand Oaks, CA: Sage Publications.

Trnavcevic, A. (2007). School leadership and equity: Slovenian elements. *School Leadership & Management* (formerly *School Organisation*), 27, (1), pp. 79-90.

APPENDIX

Appendix 1: The "Five Ps Approach to Mixed Methods Research

The key elements of the "5Ps" approach to Mixed Methods research, as defined by Cameron (2011) are:

P1: Paradigms
Tashakkori and Teddlie (2009, p.84) describe six contexts for MMR which have been re-grouped by others, generating three principal means through which MMR researchers deal with paradigms: the aparadigmatic, multiparadigmatic and uniparadigmatic stances.

In aparadigmatic research, paradigms are ignored and methodology is considered as independent of epistemology (e.g. Patton (1990). The aparadigmatic position is not quite untenable but all researchers have some form of philosophical position, stated or not, influencing their work.

Multiparadigmatic research employs more than one paradigm, through the 'complementary strengths' thesis, the 'multiple paradigms' thesis or the dialectical thesis (Tashakkori & Teddlie, 2003). These either use different paradigms in separate parts of the research (Morse, 2003), or select a 'best fit' paradigm for the design, or mix sets of assumptions, understandings, predispositions, values and beliefs (Greene 2007, p.12). None of Tashakkori and Teddlie's attempts to exemplify the mutiparadigmatic approach explain why or how paradigms are selected for mixing. Issues of incommensurability, where mixed paradigms have conflicting ontologies and/or epistemologies, can potentially cause problems.

This study, however, adopts a uniparadigmatic stance, where a single paradigm supporting quantitative *and* qualitative methods is selected. In principle, this resolves the issues of dealing with multiple paradigms based on incompatible approaches. Although not without issues, Pragmatism is often chosen (Johnson & Onwuegbuzie, 2004; Morgan, 2007) as the philosophical basis for MMR, originally because it was the only significant stance available to most mixed methods researchers. Teddlie and Tashakkori (2009), however, see Pragmatism as *the* most appropriate MMR paradigm and there is significant academic backing for this stance. Other paradigms may be employed, especially Realism (now freed from Positivist ontology and Marxist associations), either in the form of Scientific Realism or Critical Realism (which also fits well with the need to analyse how the processes of improving equity and attainment are planned, led, implemented and analysed).

P2: Pragmatism
Within Cameron's 5Ps framework (2011), pragmatism (with a 'small p') is not a reference to Pragmatism. As she (*ibid.*, p.101) suggests, it describes researchers in understanding key debates in MMR literature and then adopting and effectively defending an informed stance at the interface between philosophy and methods. Patton (2002) suggests a pragmatic approach to reduce bias and enhance flexibility (Patton 2002, pp. 71-72).

P3: Praxis
Praxis is 'the practical application of theory' (Cameron, 2011, p.102). Here, the key relate to methodological and data integration, also to concerns regarding over- or under-elaboration

of integration in design. MMR designs are well integrated when 'methods intentionally interact with one another during the course of the study' (Greene, 2007, p.125). Cameron agrees with Bazeley that the level of integration in some MMR studies is too low, seeing integration as a function of 'the extent that different data elements and various strategies for analysis of those elements are combined … thereby producing findings that are greater than the sum of the parts' (Bazeley, 2010, p. 432).

P4: Proficiency
MMR researchers must be 'methodologically trilingual' (Cameron, 2011, p.104), i.e. capable of using quantitative, qualitative and mixed methodologies. There is, however, a danger of superficiality rather than genuine integration in this. Bryman's (2008, as cited in Cameron, 2011, p.104) study of MMR-based articles in social journals over the decade 1994-2003 found almost half presented qualitative and quantitative findings separately and only 18% offered genuine integration. This project attempts integration of data, instruments, analysis and reporting.

P5: Publishing
The 'fifth P' is either Publishing or Politics, depending on the context. Both words convey aspects of the issue as P5 addresses the challenges of presenting (and being enabled to present) MMR research within the research community. This concerns the willingness of publishers/other academics to accept MMR research, due to their own innate paradigmatic views. It is therefore appropriate to be mindful of the audience(s) served by this report.