Re-thinking Educational Attainment and Poverty (REAP) - in Rural Wales

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REAP Rethinking Educational Attainment and Poverty - in Rural Wales
RESEARCH FINAL REPORT

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**Collaborative Institute for Education
Research, Evidence and Impact**

REAP Rethinking Educational Attainment and Poverty - in Rural Wales

October 2017

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Glossary of acronyms

ALN	Additional Learning Needs
CBLESS	College of Business, Law, Education and Social Sciences (Bangor University)
CF	Communities First
CI	Confidence Intervals
CIEREI	Collaborative Institute for Education Research, Evidence Impact
CPS	Child Poverty Strategy
CSI	Core Subject Indicator
eFSM	ever Free School Meal
ERW	Ein Rhanbarth ar Waith (School Effectiveness and Improvement Consortia)
Estyn	Her Majesty's Inspectorate for Education and Training in Wales
FSM	Free School Meal
GCSE	General Certificate of Secondary Education
GDP	Gross Domestic Product
GwE	GwE is 'Gwasanaeth Effeithiolrwydd a Gwella Ysgolion Gogledd Cymru' (School Effectiveness and Improvement Consortia)
Hwb Cymru	A Welsh Government's Learning in Digital Wales platform hosting a national collection of digital tools and resources to support education in Wales.
ITET	Initial Teacher Education Training
KS	Key Stage
LA	Local Authority
LEA	Local Education Authority
LSOA	Lower Layer Super Output Area
MAT	More Able and Talented
OCR	Optical Character Recognition
PDG	Pupil Development (formerly pre-March 2017 Deprivation) Grant
PISA	Programme for International Student Assessment
SCC	School Challenge Cymru
TPAC	Tackling Poverty Action Plan
TRAC	North Wales Regional project, led by Denbighshire County Council, supporting young people aged 11-19 disengaging with education and at risk of becoming NEET
UNCRC	United Nations Convention of the Rights of the Child
WG	Welsh Government
WMID	Welsh Multiple Index of Deprivation

NOTES

Note on the term and application of School Manager*-* for the purpose of this report, the term School Manager is used in lieu of Headteacher to reflect their management role of a school. Not to be confused with the contemporary School Business Manager in Wales and England - the Senior Financial and Administrative Managers in their schools who work alongside Headteachers.

Note on the term 'TAG' – Tlodi Addysg Gwledig (translated as Rural Education Poverty) was the working title for this research project, and the term can be found on the outward facing study documentation. The definitive title of **'REAP'** (Re-thinking Educational Attainment and Poverty) in rural Wales was favoured following the outcomes of the research.

Note on the use of PDG – Poverty Deprivation Grant and Poverty Development Grant are used interchangeably in this report to reflect a written statement made by Kirsty Williams, Cabinet Secretary for Education 27th March 2017, announcing a more appropriate renaming of the grant to better emphasise learner progression alongside reducing the attainment gap.[1]

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[1] Source: http://gov.wales/about/cabinet/cabinetstatements/2017/pupil/?lang=en

List of figures and tables

Executive summary

The aim of this report was to investigate the factors which affect poverty in rural education. The research was commissioned by ERW and GwE Regional Educational Consortia in February 2016 and was an 18 month study which completed in October 2017.

Data presented in this research report was collected during the 2016-2017 academic year, and data from 32,831 pupils, teachers, School Managers and Local Authority Officers are presented in five separate phases of the mixed method research. Phase 1 was an explorative qualitative study to gather perceptions of School Managers, with particular regard to rurality, poverty and educational attainment. Phase 2 of the research was based on the Phase 1 findings, being comprised of a quantitative investigation which adopted a multi-level framework to examine predictors of educational attainment in Key Stages 2 and 4. Phase 3 of the research was a stakeholder consultation with children and young people, where the 'Plickers' rapid response classroom polling app was used to collect and collate data about perceptions of poverty; this involved a total sample of 140 children and young people at Key Stages 2 and 4 in mostly rural schools. Phase 4 of the research involved a stakeholder consultation with local authorities. Twelve local authorities servicing the counties and schools where ERW and GwE are responsible for School Effectiveness and Improvement Service were invited to participate in the research to answer a focused questionnaire on a range of issues relating to anti-poverty themes, education planning and evaluations within their local authority. This penultimate phase informed us further, particularly on the research objectives of extending knowledge on needs emanating from poverty and the aspirations and perceptions of children in education in Wales. Phase 5 was an extended consultation using Hwb Cymru to host an online survey as a method for gathering the views of School Managers: 107 from mixed primary and secondary schools across 12 Welsh counties.

In Phase 1, 12 qualitative emergent themes stemmed from the face-to-face semi-structured interview data, and these are discussed in the summary of Phase 1. In Phase 2, national and local government

databases were analysed in a multi-level framework, and emergent relationships between pupil level and school level predictors and their effect on primary educational outcomes at Key Stages 2 and 4 are described in two models. In Phase 3, children and young people were consulted about their views on poverty and educational attainment. There was also clear evidence of a need to ensure that children are nourished well enough to concentrate in school and beyond. It was found that poverty diminishes the enjoyment of school experiences, especially through participation with peers, and that there seems to be a need to provide support for mental well-being, enjoyment and more beneficial social environments, suggesting a need for anti-stigma initiatives and counselling options. Not only will this assist with tackling worries from home and any low aspirations, it may assist with barriers commonly experienced by pupils, e.g. with the pressures of attainment targets. It is also clear that a blaming culture causes difficulties for those in poverty, throughout the education system, from the top down. In Phase 4, the evidence suggests that local authorities were unclear about their role in tackling poverty as anti-poverty leads/champions were hard to reach. The research suggests that there appears to be a lack of a single point of accountability for tackling poverty within local authorities. In Phase 5, more School Managers were asked about their opinions via a Hwb Cymru online survey with an opportunity to provide written comments. Most of the comments presented by the School Managers echoed what was found in Phase 1 of the research, but with hidden deprivation highlighted. A clear theme arising from these responses was the inadequacy of FSM as a measure of poverty, for either the schools or the individuals involved. Although most proffered their desire to meet the unmet perceived pupil needs, it was evident that the potential to find creative solutions to these challenges, such as anti-stigma initiatives, was restricted; difficulties identified, such as low aspirations, the engagement of both parents and children with children's learning and wider issues of community pride and well-being were severely compromised by a lack of resources and the exigencies of external judgments, regulations and processes.

In conclusion, the research found that there are multiple factors which affect educational attainment, and poverty is only one of these factors. In Phase 1, School Managers discussed what schools are doing to tackle disadvantage and poverty within rural school settings in Wales to reduce the inequalities in

education between those who are living in deprivation and those who have more means. One of the main findings for Phase 1 was that effort and pragmatic initiatives from teachers aid the engagement of disadvantaged pupils. However, School Managers were concerned that teacher initiatives were being suppressed by heavy workloads. Phase 2 showed that rurality does not confound the effects of poverty, and issues such as additional learning needs, attendance and poverty are substantial predictors of educational attainment. Phase 3 findings added to the evidence that poverty impacts on children and young people's experience and enjoyment of education in school. Phase 4 provided evidence that there seems to be a disparity between national policy directive on tackling poverty and how this is facilitated locally through local authorities. Dialogue and synergy between research-based policy and policy implementation should have a pragmatic application, but limited evidence of this was found. Phase 5 provided further evidence to reinforce the themes found in Phase 1. School Managers from across 12 local authorities in Wales provided comments that illustrated tackling poverty is a complex issue and should include engagement with cultural issues, the aspirations of parents, the culture of benefits and the need to recognise and understand that many parents work long hours in low paid jobs in Wales and have limited time to spend with their children. In turn, this places considerable restrictions on their capacity to undertake educational type activities outside of the classroom setting.

Summary of recommendations:

1. It is recommended that tackling poverty is a partnership between the school and the home. School Managers should continue to work closely and engage with parents to encourage them to believe that education begins at home. Current government initiatives to promote this idea should continue.

2. It is recommended that further quantitative longitudinal analysis from the end of the foundation phase would be invaluable in disentangling effects of some of the key factors on attainment. Funding to conduct this type of longitudinal research is needed.

3. It is recommended that consideration should be given to how poverty diminishes the enjoyment of school experiences, especially through participation with peers, that more resources should

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be available to provide support for mental well-being, anti-stigma initiatives and counselling options. Not only will this assist in reducing worries from home and any low aspirations, it may also assist with barriers commonly experienced by students, e.g. pressures of attainment targets.

4. It is recommended that local authorities should employ anti-poverty champions rather than many employees in different departments working on different aspects of poverty as an 'add-on' to their existing posts, with no real certainty regarding how to tackle the issue on a strategic level.

5. It is recommended that social services are still needed to cooperate with families in need of support. Funding to tackle poverty should focus on empowering children and young people to value the long-term benefit of education.

Introduction

In February 2016, Bangor University was commissioned to undertake a research study on behalf of ERW and GwE Regional School Improvement Consortia. The aim of the research was to undertake a review and analysis of the factors and effects of poverty and rural isolation on educational outcomes.

The commission specification for the research was to:

o Identify whether or not there are key characteristics such as isolation, travel to work distances, car ownership, limited connectivity and bandwidth, reduced access to core amenities, smaller schools with narrower curriculum choice, recruitment and a shortage of bilingual skills which can be attributed factors to rural poverty or contribute to the ability of schools to overcome poverty hurdles.

o Engage with regions, LAs, parents, School Managers, government funded bodies and pupils to identify the hurdles facing schools and learners living and working in rural areas.

o Assess the validity of e-FSM as a proxy for poverty in schools and its impact on the level of funding for pupils via PDG.

o Identify schools and communities where successful strategies have been implemented to reduce the impact of rural deprivation on attainment (case studies of exemplary practice where available).

o Include, where possible, any potential learning from Scotland and elsewhere, especially those who evaluate curricular changes similar to those planned in Wales, with a particular focus on identifying any key rural implications.

o Judge the impact of city-centric policy development in education on rural isolation.

o Evaluate the impact of the reduced proportion of resources supporting rural schools as a consequence of SCC and PDG being based on e-FSM.

o Identify the impact of low speed connectivity/poor digital competence skill levels of parents, pupils and teachers on the pace at which digital communication is and could be used to reduce the impact of rural poverty on attainment.

o Identify the effectiveness of and the potential strengthening of a self-improving system and school to school support on rural schools – specifically if there are additional hurdles.

o A short review of rural collaboration across the world and strategic interventions successfully in operation.

o Assess the impact and levels of (in comparison to other areas) adequate or poor-quality teaching.

The Research Management Board agreed to narrow the focus of the commission as specified in the submitted tender.

Aims and objectives clearly identified (page 22), this final report provides the research study's findings based on the samples and methods employed in the research as detailed in Table 1.

Table 1 Overview of the Phases, samples and methods employed in the research

Phase	Sample size	Method
Phase 1	8 School Managers interviews (5 secondary and 3 primary)	Qualitative Face to face, semi-structured interviews with School Managers
Phase 2	32,571 children and young people 16, 453 (KS2 dataset) from 787 primary schools across 12 local authorities, and 16,118 (KS4 dataset) from 154 secondary schools across 12 local authorities	Quantitative Multi-Level Regression Analysis
Phase 3	140 children and young people	Qualitative Stakeholder consultation with children and young people via Plickers questionnaire
Phase 4	5 Stakeholder consultations with Local Authorities Officials	Qualitative Semi-structured questionnaire via online and telephone interviews
Phase 5	107 Extended consultations with School Managers	Qualitative Extended consultation with School Managers via questionnaire
Total sample size (n)= 32,831		

Background

Defining Poverty

Poverty in academic and policy-based discourse is mainly categorised in terms of absolute and relative poverty. The former is defined by United Nations Educational, Scientific and Cultural Organization (UNESCO) as: "the amount of money necessary to meet basic needs such as food, clothing, and shelter."[2] This does not, however, concern itself with broader issues relating to societal inequality. However, relative poverty, as defined by Townsend (1979, p.32) often indicates wider societal differences as: "resources are so seriously below those commanded by the average individual or family that they are, in effect, excluded from ordinary living patterns, customs and activities." Social exclusion, as popularised by the New Labour Government of 1997, is defined as: "the dynamic process of being shut out … from any of the social, economic, political and cultural systems which determine the social integration of a person in society." (Walker & Walker, 1997:8). It can often be difficult to distinguish these terms from each other, but both crucially indicate a series of processes leaving individuals, and sometimes communities, disconnected from social functions and significant forms of cultural capital. Such processes can often influence success within the education system.

Poverty in Wales

One in three Welsh children aged 0-16 (200,000 children) are living in poverty in Wales (Welsh Government, 2015a). UNICEF (2016) note that child poverty is measured as the percentage of children in households with incomes below 50 % of the national median income (after taking taxes and benefits into account and adjusting for family size and composition).

At birth, there is an 18.9-year difference in healthy life expectancy between the least and most deprived area of Wales (Public Health Wales Observatory, 2011; Buck & Maguire, 2015). However, this statistic is misleading as poverty is not that clear-cut in Wales. There are areas that are more deprived than others across the whole of Wales. Based on income poverty alone, around 20% of the population of Wales live in permanent poverty and up to another 50% live close to the 'poverty line'. Some are in poverty because of a lack of income due to lack of employment, but most people in poverty in Wales

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live in a household where at least one adult works (Egan, 2017). Children living in poverty in Wales (estimated to be 17% of the child population) are more likely than their peers to be growing up in chaotic family situations where there is sub-optimal family health and wellbeing, perhaps caused by social problems such as drug or alcohol abuse, family breakdown and a general culture of low aspirations (Grigg, Egan, McConnon & Swaffield, 2014; Buttler Sloss & Roberts 2010; Willow 2001).

Willow (2001) states that poverty affects children when attending school, for example, children report being excluded from school trips, missing meals, using lunch money for evening leisure activities and being bullied for wearing unfashionable or dirty clothes.

Living in poverty increases the likelihood of poor long-term outcomes for children, including low academic attainment, delinquency, substance misuse and mental health problems. The intergenerational effects of disadvantaged childhood outcomes in one generation becoming a risk factor for the next of the same family are well documented (Hutchings et al., 2013).

Welsh Government policies and poverty in education

In Wales, education is a devolved issue, and whilst educational policies may reflect those of England or are borrowed from different nations such as Finland (Sahlberg, 2010), the Welsh Government has responsibility for educational policies and most of the schools are state run (Welsh Government, 2008). School performance is inspected by Estyn (Estyn, 2012), and there is a great emphasis on accountability to the Regional Education Consortia.

Regional Education Consortia are charged with raising standards of school leadership, teaching and taking a specific lead on monitoring the progress of targeted funding and support for disadvantaged children (Welsh Government, 2012).

The Welsh Government have a Child Poverty Strategy, and three strategic objectives were outlined to reduce child poverty in the Children and Families (Wales) Measure (National Assembly for Wales, 2010). These included reducing the number of families living in workless households, improving the skill level of parents and young people in low-income families so that they can secure well-paid employment, and lowering the inequalities that exist in the health, education and economic outcomes for children living in poverty, by improving their outcomes. However, authors such as Grigg et al., (2014) have noted that despite efforts to reduce the poverty gap between children from high-income families and children

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from low-income families, there is still a wide gap between poverty and achievement in Wales. Children from disadvantaged backgrounds fall behind at all key stages of education. According to the Children's Commissioner for Wales (2013), those from more prosperous backgrounds outperform those from more disadvantaged backgrounds in terms of language, social and emotional development before children start school. There is widespread evidence of the same trends occurring in Europe, with children as little as 2 years old being excluded or marginalised at pre-school for underdeveloped social, emotional and cognitive development associated with poverty (Havrdova et al., 2016). The Joseph Rowntree Foundation estimates that children in poverty are at least six months behind the norm in school readiness (Joseph Rowntree Foundation, 2008) as they do not read, play number games, paint, learn songs or chant nursery rhymes every day. Children living in poverty threshold are more likely to experience learning difficulties and developmental delays (Brooks-Gunn & Duncan, 1997).

The Welsh Government has two key strategies that aim to reduce this negative impact. The first strategy regards learning and teaching led interventions within their Tackling Poverty Action Plan 2012-2016 (Welsh Government, 2012a), whilst the second strategy focuses on student, family and community-focused interventions within their Pupil Deprivation Grant Scheme (Welsh Government, 2012b). The Pupil Development Grant (PDG) is one of the main ways the Secretary of Education is tackling the effect of poverty on educational attainment. According to Egan (2013), 17% of children in Wales live in relative poverty, and the key indicator is how many receive free school meals (FSM). Moreover, the education gap between children in poverty (FSM indicator) and their better-off counterparts can begin during nursery class age and often peak during GCSE results which crucially impact upon life chances and career prospects (Kenway et al., 2005).

Another way of tackling issues of disadvantage due to poverty is through the Regional Education Consortia which are helping schools to perform better and tackle poverty through learning from best practice (Grigg et al., 2014). International evidence has confirmed that extensive professional development is behind the most successful programmes in raising standards for all learners (NFER, 2013).

School Effectiveness Framework

The School Effectiveness Framework is a universal targeted programme aimed at reducing educational attainment gap by commissioning programmes that aim to make the most significant contribution to child-poverty indicators. These include strategies to improve the literacy and numeracy skills of children and to promote effective governance at schools to achieve positive outcomes for children working with families and communities (Welsh Government, 2012).

According to research by Estyn (2010), in Wales, there is an educational attainment gap of 32-34% between children living in poverty compared with other young people leading up to and taking their GCSEs. The Children and Families (Wales) Measure (2010) is underpinned by several broad aims, which include reducing educational attainment gaps between children from different socio-economic backgrounds. Indeed, in accordance with Article 12 of the United Nations Convention on the Rights of the Child, mechanisms should also be in place to allow pupils to be involved in making decisions, planning and reviewing actions that affect them within the educational system and beyond. The participation of children in determining their own learning needs may well be a fundamental step in understanding how schools can adjust school cultures to address the social and cultural determinants of lower outcomes. This is also supported by the School Effectiveness Framework (2008), especially in the third priority – to reduce the impact of poverty on educational attainment. Furthermore, this emphasis is also reflected within the Child Poverty Strategy for Wales 2010 which aims to reduce inequalities in fields such as health, economics and education for children from the most deprived backgrounds.

Free School Meals eligibility

Pupils are entitled to FSM if their families receive Income Support, Income Based Jobseekers Allowance, Support under Part VI of the Immigration and Asylum Act 1999, Income-related Employment and Support Allowance, Child Tax Credit (provided they are not entitled to additional benefits such as Working Tax Credit and their annual income does not exceed £16,190), element of State Pension Credit, Working Tax Credit 'run-on', or Universal Credit (Welsh Government, 2013). The performance of pupils eligible for FSM is lower than those who are not eligible at all stages and in all key performance indicators. The 2012-15 quantitative tables of achievement and FSM show that an

increasing number of pupils are not eligible for FSM, which contradicts what is known about the increase in rural child poverty in Wales. This casts doubt on the FSM scheme's validity together with the Pupil Development Grant Scheme.

Welsh Multiple Index of Deprivation

The Welsh Government has an official measure of relative deprivation for small areas in Wales, called the Welsh Index of Multiple Deprivation (WIMD). The latest report was in 2104 (Welsh Government, 2014), with the next due in 2019. The WIMD is designed to identify those small areas where there are the highest concentrations of several different types of deprivation. As such, WIMD is a measure of multiple deprivation that is both an area-based measure and a measure of relative deprivation in Wales. In WIMD 2014, there were pockets of high relative deprivation in the large cities and the South Wales valleys and in some coastal and border towns of North Wales. The overall picture in 2014 was similar to that of WIMD 2011, with six of the ten most deprived areas in WIMD 2011 remaining in the ten most deprived areas in WIMD 2014.

The legal framework on children's rights, child poverty and achievement

The Child Poverty Act 2010 included a statutory target on the eradication of child poverty by 2020. This Act was amended significantly by the Welfare Reform and Work Act (2016), which repealed this statutory target and the obligation on both the UK and devolved governments to develop child poverty prevention strategies.

The United Nations Committee on the Rights of the Child, in its 2016 concluding observations, urged the UK to re-establish clear targets and mechanisms for the eradication of child poverty and to consider the impact of welfare reforms on vulnerable children (paras. 70-71). In response to the repeal of large parts of the Child Poverty Act 2010 (now renamed the 'Life Chances Act'), Scotland introduced its own Child Poverty Bill in 2016. In Wales, the Children and Families (Wales) Measure (2010) places a duty on Public Bodies, including local authorities as well as Welsh Ministers, to develop and implement Child Poverty Strategies. The measure is intended to ensure that the actions of public bodies contributing to the eradication of child poverty are well-defined and can be monitored.

The Rights of Children and Young People (Wales) Measure 2011 placed a duty on all Welsh Ministers to have due regard to the substantive rights and obligations within the United Nations Convention on

the Rights of the Child (UNCRC) and its optional protocols. Since 2014, the duty to have due regard to the UNCRC extends to all Ministers when exercising any of their ministerial functions.

The rights of children and young people in Wales are also preserved by the United Nations' Sustainable Development Goals (UNSDG) which further strengthens policies and enforceable legislation in Wales. Wales was the first country to put into legislation the principles behind the Sustainable Development Goals through the Well-being of Future Generations (Wales) Act 2015. The Act establishes a statutory Future Generations Commissioner for Wales, whose role is to act as a guardian for the interests of future generations in Wales and to support the public bodies listed in the Act to work towards achieving the well-being goals. The Act also establishes Public Services Boards (PSBs) for each local authority area in Wales. Each PSB must improve the economic, social, environmental and cultural well-being of its area by working to achieve the well-being goals (Future Generations Act, Welsh Government, 2015). The Future Generations Commissioner for Wales views education and curriculum development in Wales as pivotal conduits in realising the goals set out by the 2015 UNSDG 2030 to end extreme poverty and fight inequality and injustice. In ensuring children are not disadvantaged by poverty, schools are of vital importance, developing the skills needed for children and young people to be successful in the future through their educational experiences promised by Donaldson's new curriculum framework Successful Futures (2015); "Successful Futures", the new curriculum framework, should see "*children and young people develop as ethical, informed citizens of Wales and the world*" (Donaldson, 2015:29). It is acknowledged that laws cannot eliminate poverty (Morgan, 2010), but it can be used to improve the impact of poverty.

Poverty and rurality

Reporting on eradicating child poverty, the Children in Wales network report (2009) notes that the characteristics and impact of poverty and rural isolation has drawn the attention of public authorities and informed them of the need for a rural measure by the Rural Policy Unit in the Department for Rural Affairs on government policies. The report of the Rural Wales Poverty and Deprivation Committee (2008 p.10) also states that the rights and needs of people living in rural areas should be

identified as rights and equality policies which should improve the quality and efficiency of services and the importance of a rural measure for the results.

A Bevan Foundation report on Rethinking Poverty (2014) also acknowledges that people living in poverty or whose income are around the poverty threshold in rural settings in Wales (particularly disabled people) have higher and more urgent needs as they have much higher than normal fuel and food costs (Record of proceedings 2014, Welsh Government, 2012).

A qualitative study on poverty and ethnicity by Holton et al. (2013) has sought to go beyond the boundaries of income poverty and the link with educational attainment by focusing on the experiences of 27 families from five ethnic groups living in a big city, along the North Wales coast, in the South Wales valleys and rural areas. The study's findings indicated that parents consider children's education to be of key importance and that education and their home surrounding is likely to have a major impact on their continued poverty levels. The study also revealed that children's choices are often limited and are influenced by other factors such as key aspects of their human capital, such as health and skills, their access to help and advice, contact with information and resources which may help to escape poverty and social norms, including gender roles.

Research by Petterson and Burke Albers (2001) demonstrates that both poverty and gender play a role in determining a child's development. The study showed that the levels of cognitive skills developed by girls were significantly affected by income levels. Poverty had less impact on the cognitive skills developed by boys. In addition, poverty had little impact on the motor skills demonstrated by girls, whilst boys living in poverty had significantly higher motor skill scores than those living in more affluent families.

Horgan's (2007) research demonstrates that there is a difference in the way in which poorer boys and girls approach school. Boys as young as nine in poorer schools were disenchanted with school. Horgan (2007) suggests that boys begin to disengage with education to a greater extent than girls due to the way in which they react to educational disadvantages faced by children growing up in poverty, the difficulties faced by teachers in disadvantaged schools and the differences in the ways that boys and girls are engaged.

Autor et al., (2015) have suggested two reasons as to why boys in poverty do not engage with school as effectively as girls. Firstly, better quality schools may be able to accommodate individual approaches to learning and facilitate greater engagement for boys. The research suggests that the quality of the school can be associated with family advantage. Secondly, the gender gap within school may be influenced by the neighbourhood in which the children are living in. For example, boys living in poorer areas are more likely to participate in gang activity which would lead them away from educational achievement (*ibid*).

There is evidence to suggest that problems associated with financial pressure, family pressure and rural isolation are increased by poverty, and can also be exacerbated for children living in rural locations due to difficulty accessing public services due to inflexible public transport (Willow, 2001; Walsh, 2009; Douglas, 2009). Furthermore, children living in small rural communities may be reluctant to ask for help for fear of breaches in confidentiality (Baker & Stalford, 2004).

Organisation for Economic Co-operation and Development (OECD) PISA standardised assessments

The Programme for International Student Assessment (PISA) standardised tests are carried out in Wales and results have proved disappointing to all, including parents, teachers and governors, with children and young people from Wales performing worse than their European counterparts. Specifically, the PISA results showed that there is an educational attainment gap of 32 to 34% between children living in poverty compared with other children at ages 14 and 15/16 (Egan, 2012; Estyn, 2010). The strong policy focus on closing the educational attainment gap appears to have been stimulated partly through disappointing Welsh results in 2009 international PISA assessments (Welsh Government, 2012). Furthermore, the likelihood of the persistence of such gaps is significant, given cycles of intergenerational deprivation. Indeed, a review of population surveys in European countries found that low educational attainment, material disadvantage, unemployment and social isolation are associated with increased prevalence of mental ill-health which are likely to exacerbate depression and anxiety (World Health Organisation, 2012).

End Child Poverty Network Cymru

End Child Poverty Network Cymru have outlined many key considerations for the Welsh Government in relation to eradicating child poverty through education within their report (End Child Poverty Network Cymru, 2012). They point to the need for inclusive education which includes developing a wider set of outcomes beyond academic achievement to ensure that children are given the right support during the appropriate period in their schooling. The Network also highlights the need for the best possible start for all children, as evidenced within Flying Start and the Foundation Phase. In particular, the Network points to a need for increased early interventions and family support, emphasising the importance of the early home learning environment and parental involvement to enhance children's prospects. Flying Start does not make available widespread access for all low-income families across all parts of Wales. For example, rural localities can often face challenging difficulties such as social exclusion and isolation due to poor public transport links. Education funding has also been singled out by the Network as a key Welsh Government priority. Welsh Government (2017) Prosperity for All: the national strategy, Taking Wales Forward, identifies 5 priority areas: early years, housing, social care, mental health and skills, which they claim has the potential to make the greatest contribution to long-term prosperity and well-being as these areas show that earlier intervention and more seamless services can make a real difference to people's lives.

Regardless of Welsh Government's commitment to increase education funding 1% above the block grant received from the UK Government year on year and the recently reported budget threats made by Welsh Government treasury at local authority levels, educational attainment should be regularly scrutinized to provide important insights that identify trends in early educational performance.

Egan (2012) states that while teachers undoubtedly make an impact, it takes an effective leader to ensure that the whole school is successful in reducing the attainment gap through regular monitoring and a clear vision. However, many argue that this approach places too much emphasis on the school alone. Some research has shown that 20% of variability in pupils' achievement is due to school influences, whilst roughly 80% is accounted to pupil level factors (Rasbesh et al., 2010). Many scholars, therefore, discuss the need for a balance of both school and external influences in reducing the attainment gap (Joshi et al., 2011; Egan, 2012). Egan (2012) states that concentrating on one area

alone is not sufficient and argues for an all-encompassing approach. To address the attainment gap, both school-level interventions and external interventions are required.

Despite increased Welsh Government funding and resource allocation, Wales remains an area of low educational attainment exacerbated by a range of social problems. Indeed, addressing the impact of poverty and social exclusion in Wales involves careful consideration of over-arching, and the literature and research discussed shows that multi-faceted social factors of individuals' and communities' lives and factors such as location and family learning backgrounds should be at the forefront when attempting to tackle these difficult issues.

The Welsh Government have stated that tackling poverty needs a "smarter approach", not simply focused on geographical area. There are also public concerns that leaving the European Union could damage the poorest areas of Wales.[3]

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[3] Source: Securing Wales' Future, Transition from the European Union to a new relationship with Europe, Welsh Government 2017

Aims and objectives of the research

Aim:

The main aim of the research was to investigate the validity of the Free School Meals (FSM) initiative

as a proxy for poverty in schools and its impact on the Pupil Development Grant funding.

Objectives:

The objectives of the research were to:

o Identify the needs, aspirations and perceptions of a specific range of research
   participants.

o Establish the nature of the relationship between poverty, attainment, budget, policies, resources,
   location of schools, parenting skills, third sector enterprises and government leadership, schools,
   local authorities and Consortia.

o Use theoretical perspectives to evaluate the differing impacts of adequate or poor teaching, a range
   of urban and rural policies offering guidance on future needs provision, including identifying a self-
   improvement and support system for rural schools to overcome barriers and combat the impact of
   poverty.

Ethical considerations

The research described in this report was given ethical approval by the Ethics Committee of the College

of Business, Law, Education and Social Sciences, (CBLESS), Bangor University.

Consent was received by all research participants. All audio files and transcripts were anonymised, and

any identifiable information (such as names and locations) were removed during the transcription

process.

Conceptual framework

Often, a conceptual framework's purpose is defined as a way of explaining and organising ideas in

order to achieve the aims of the research project. It may be a written or a visual presentation

"explaining either in a pictorial form or in a narrative form, the main things to study - key factors,

concepts or variables - and the presumed relationship amongst them" (Miles and Huberman, 1994). It

provides a structure and content for the entire study based on literature and personal experience. A

conceptual framework is developed so that participants' views and issues are usefully collected and

analysed as a filtering tool for selecting appropriate research questions and related data collection

methods.

By analysing the influences and applying them throughout the research process as a whole systems approach, it supports the development of the research's theoretical framework. This is considered to be a crucial step in terms of understanding policies, effectiveness of services, interaction with "service users", planning a social and educational anti-poverty provision.

Problems and needs

The definition and concept of need is complex and multi-layered. Differentiating factors and their interplay are often blurred by issues such as personal experiences, problems, real needs, provisions and unmet needs, perceived gaps in services, expectations, preferences and choices. The needs of pupils, practitioners and key stakeholders are very different to each other in terms of policy planning or commissioning services, as are their actual priorities and needs.

The research will evaluate the actual and perceived needs and the extent to which a wide range of provision is a priority for pupils, school leaders, local authorities, Consortia and policymakers.

Institutional Context

Recent research and theoretical frameworks provide compelling evidence for the role of a critical organizational leadership and support system for changes in the provision of an educational service (Iles & Sutherland, 2001); in this case, the provision and implementation of anti-poverty and educational attainment services.

Governmental and institutional leadership and roles were evaluated to empower change in the implementation of ancillary national plans for combating poverty and increasing educational attainment in pupils at three levels: Micro, Meso and Macro.

Examining these issues at Micro level explored how parents and pupils are affected by policies and services, and indeed if poverty is an inherent and unrelated phenomenon of educational attainment and underperformance, or whether there is a close correlation between them.

At Meso level, examining the individual institutional context involved school leaders and practitioners in delivering and supporting change in service provision.

Governmental leadership and directives in the context of national policy will be reviewed at Macro level.

These three viewpoints support the development of a conceptual framework to examine the alleged significant underfunding in schools in Wales and the evidence for the validity of pupils eligible for free meals as a proxy for poverty in schools through the Development Grant/School Challenge Cymru programme.

A diagrammatic representation of the conceptual framework of the research is shown in Figure 1:
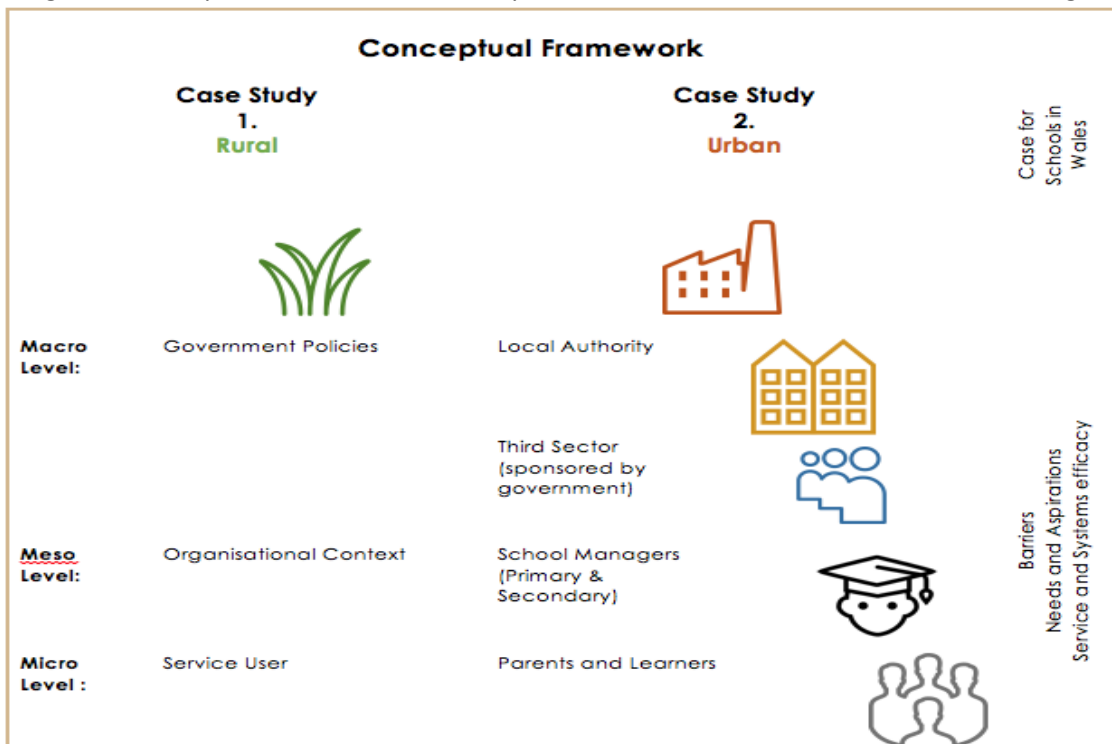
Figure 1: A diagrammatic representation of the conceptual framework of the research

Inclusion criteria for the research:

o Participants will not be excluded from the research unless they satisfy the research's exclusion criteria.

Exclusion criteria for the research:

o Parents and pupils suffering from health disorders which will deteriorate their condition, well-being and safety by their participation.

o Pupils who have been excluded from school because of issues unrelated to poverty, ability, additional/special educational conditions.

Phase 1: Qualitative semi-structured interviews with School Managers

Sampling

The sample included 8 schools (5 primary and 3 secondary) from six ERW and GwE regional Consortia areas in Wales. A sampling matrix was established by ERW and GwE in order to select School Managers from schools with different categories of support (green, yellow, amber and red). Some schools were in a coastal location, others in the countryside and the remainder in rural areas close to towns.

Procedure

Eight semi-structured interviews were conducted from November 2016 to January 2017 with School Managers, during or after school hours. Two researchers organized and conducted the interviews which lasted 1-2 hours on average. The interviews were audio recorded with digital sound recording equipment. The interview schedule (see Appendix 1) was available bilingually in Welsh and English, and School Managers could choose to be interviewed in their preferred locations. Both researchers were native North Walians, fluent in both English and Welsh, and both had previous experience of working in South and North Wales. Both researchers also had experience and knowledge of the primary, secondary, further and higher education sectors in Wales. See Table 1 for the characteristics of the schools and the language used during the interviews. Figure 3 shows Welsh Government School Support Categories.

It is recognised that some schools have changed their support category rating since the samples were selected due to governmental and Consortia procedures. There was no change for two of the five high schools and no change for two of the three primary schools. The schools that changed category increased by one (e.g. from yellow to green) or two categories (e.g. from amber to green), with none moving into a lower category.

Table 2: Characteristics of Phase 1 schools, including language medium of the interviews

Consortia	Support Category 2015	Support Category 2016	Location Urban/Rural/Coastal	Sector Primary/Secondary by code	Language of interview	Date of interview
GwE n=4	(orange)	(orange)	Rural (coastal)	U5	English	18/11/2016
	(orange)	(green)	Rural (by towns)	U3	Welsh	09/11/2016
	(yellow)	(yellow)	Rural (countryside)	C2	Welsh	09/12/2016
	(red)	(orange)	Rural (coastal)	C3	English	09/12/2016
ERW n=4	(yellow)	(yellow)	Rural (by towns)	U4	English	13/12/2016
	(yellow)	(green)	Rural (countryside)	U2	English	14/11/2016
	(yellow)	(green)	Rural (countryside)	U1	Welsh	14/12/2016
	(green)	(green)	Rural (countryside)	C1	Welsh	19/01/2017
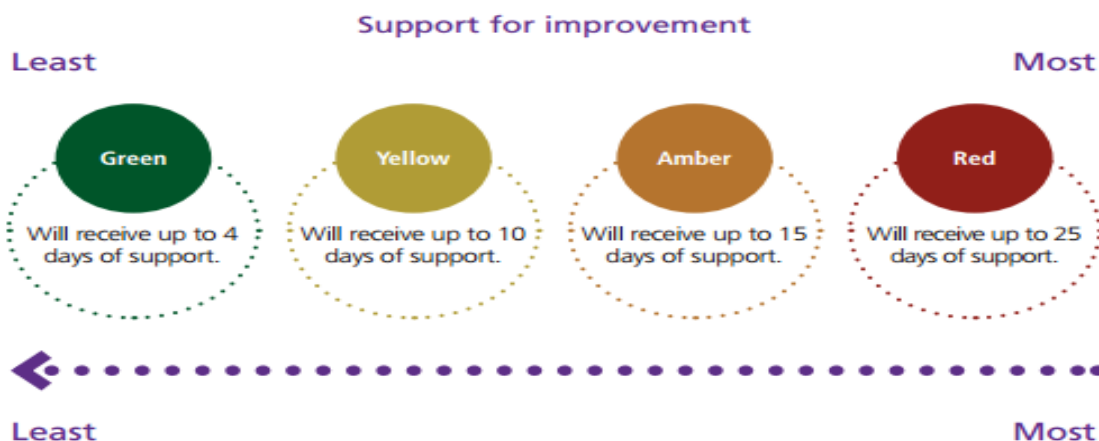
Figure 2: Diagrammatic representation of Welsh Government School Support Categories

Qualitative data analysis

The interviews were transcribed verbatim from audio files. After this, the data was coded by two researchers using the computer program Atlas.ti (Version 8), which was used to generate reports from manual and automatic coding. We used the thematic framework method (Ritchie et al., 2014) in order to organize the data into codes and sub-codes. A division of the project management committee were involved in the process of analyzing the qualitative data. Twelve main themes emerged from the data:

• School location

• Pupil Development Grant (GDP)

• Leadership

• Curricular and Extra-Curricular experiences (opportunities)

• Celebrating success

• Family engagement

• Active community links

- Regional Consortia

- Local authority

- Estyn

- European Schemes e.g. CYNNYDD

- Welsh Government

We will report on each of these categories in turn in the results section.
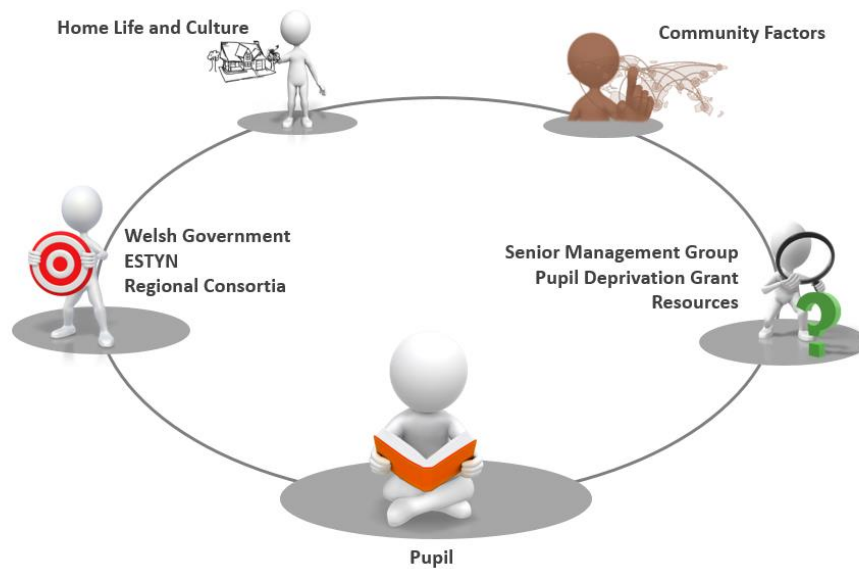
Figure 3: Factors affecting the educational attainment of pupils experiencing poverty

School Location

Figure 4 shows a Venn diagram that classifies schools according to their rural location (U1, U2, C1, and C2) or their urban/coastal location (U3, U4, U5, C3). The qualitative data is analyzed with these groups in mind. Although the research concentrated conceptually on the rural and urban schools as defined by the WMID, we also explored the possibility of a third (coastal) case study. In empirical reality, it was impossible to categorize many into neat types as most would fall within several. For example, some schools considered themselves to be coastal yet rural and near-urban. Phase 5 of the research demonstrated that schools offered their own geographical identity that differed somewhat from the definitions used by Welsh Government and WIMD.
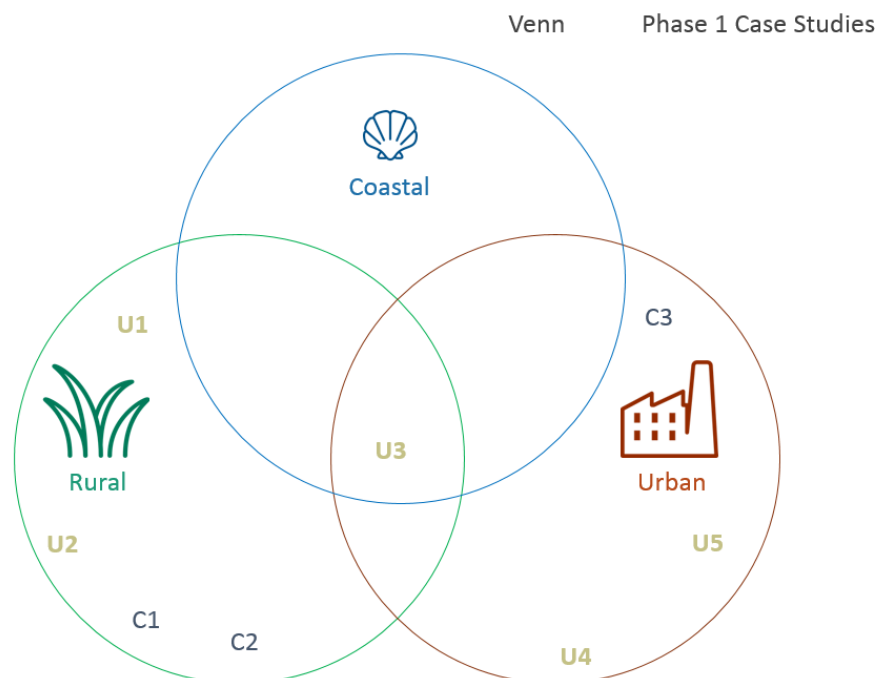
Figure 4: Venn diagram showing selected Phase 1 schools sample according to rural, coastal and urban locations
Key Primary = C (n= 3), Secondary = U (n= 5)

Phase 1 results

Pupil Development Grant (PDG)

Every Manager in both groups talked about the Pupil Development Grant (PDG) as a government grant for targeting specific pupils from disadvantaged backgrounds. Receiving free school meals is the criteria for obtaining these funds, therefore the number of pupils who receive free school meals is an important criterion in order to attract additional funding for the school. Each child receiving

free school meals attracts an additional £1,150 at present. The percentages in the number of pupils who receive free school meals varied a great deal from school to school, from three or four free school meals pupils in the most advantaged areas to around 40% free school meals pupils in the most deprived areas.

All school staff are made aware of who is on the list of free school meals, and some managers, especially in the more urban/coastal areas try to encourage more families to apply for free school meals so that the PDG numbers increase. School Managers regard PDG as additional funding for employing more teaching staff. For example, U5 states:

As we are a school with significant numbers of free school meals, that is helpful, but unfortunately, due to the funding formula within our local authority, we do not receive sufficient funding to pay for all our teaching staff. So what we find is that we have to look at using or deploying some of the Pupil Development Grant to support the teachers that we require in front of the pupils in the classroom. And that's quite significant because Pupil Development Grant there should be an extra source of funding for extra work, and it's not necessarily the case because of insufficient funding coming from the local authority.

In more affluent areas, many pupils do not receive free school meals, therefore there is less money from PDG reaching those schools. In the most rural areas, only a few received free school meals.

As U1 said:

The pity here I feel is that more parents and more children are worthy of free school meals, but due to the restriction of eligibility criteria, if you like, what you are allowed to have in terms of benefits, if you like, that it prevents parents from getting on the list, and there is some pride also belonging to a lot of parents, where they said, "No, I do not want for my child," or, "I do not want my child to be seen as a child from a family who have free school meals." And I feel strongly here, that in rural Wales, that that is a major reason why the figures are small and are falling. You will see in some areas, the number of claims from children in urban areas are going up! And there is a different pattern in the rural areas, the numbers and percentages are going down, while in the towns and cities, they are going up! And it is, it is my definite view that this is true of our area.

U4 said that early interventions are also supported by the PDG.

...… so it is identification at an earlier stage, and then intervention being put in place to support looking at reading ages. We do CATS testing. At the end of Year 6, we bring all the children in from the primary schools to do the CATS testing here…
...Within the school we operate a vertical curriculum, which allows MAT children from, at the end of Year 8, to choose two level 2 qualifications in Year 9, so other children will pick up two qualifications in Year 10 and two in Year 11, but the MAT children will pick up an additional two in Year 9. What that means is, it allows us, the More Able and Talented pupils in year 11, we can adjust their timetables. So last year, if you go back to September 2015, 67% of our Year 11s already had their Level 2 at the end of Year 10, so what we were able to do then was to give them more time for their English and maths and science.

Leadership

Managers from urban/coastal areas (U3, U4, U5) and one from a rural countryside location (C2) said that they were very proud of the things they do to support pupils from disadvantaged families in terms of policies, free resources, money towards trips and help with school uniforms etc. for all children who need it. As C2 stated:

We are putting something in place that will help us, and then want to try to extend that out as well. For example, we are going to see a pantomime next week, and I know that we have some families with two, three children, in the same family, so we hope to put something in place so that the cost could be a little bit less.

Although there may be a stigma attached to making an application for free school meals, parents are encouraged by some School Managers to complete the application forms as the money from the PDG benefits the school financially. Some, like U3, are willing to help parents fill out forms:

There is also a stigma attached to that, but the school will benefit financially from it, so we are trying to ensure that parents… and like I mentioned at the beginning, I can think of examples where we have had parents in here and we have helped them to complete forms……

Overall, the data shows that School Managers have high aspirations for their pupils and that those in rural areas avoid using being in a rural area to be an excuse for underachievement. For example, U2 said:

So we've just driven standards and it's almost a no blame, no excuse culture, you know, our children can do it, we are not going to stand in their way to do it ……. I think what we've had to do as well is, we are not allowing being in a rural area to be an excuse, right, but what we tend to find in this area is that everybody is… it's a proud community, rural communities are proud. They may be entitled to claim, but they don't.

Curricular and extra-curricular experiences (opportunities)

All School Managers interviewed indicated that opportunities provided for extra-curricular experiences were important in tackling the underachievement of pupils from deprived backgrounds, but opportunities varied vastly in terms of their quality and quantity. The evidence presented demonstrated that school staff actively took it upon themselves to seek, create and maintain global opportunities for pupils, with some exceeding their capacity and expected standards in the removal of known barriers to engagement. Others resorted to more traditional, historical and localised industry vocational opportunities/pathways. Almost all schools tailored their extra-curricular opportunities to match the expressed needs and aspirations of pupils, with specific consideration given to future employability factors. External funding is often sought for extra-curricular opportunities, as U2 stated:

We've also taken the decision to become a lead creative school for the Welsh Arts Council, we are in year 2 of that. We've used that as an opportunity to raise literacy standards across the school; we've used that as an opportunity to give youngsters the opportunity within the creative arts so they… our film is on the Welsh Government website, we were identified as an area of good practice for the creative schools, and because of that, we've been invited to become a pioneer school. So, we've gone ahead and done it ourselves, you know, we got sort of £20,000 over two years, but it's because of using as a curriculum initiative and targeting literacy but working with creative practitioners and …… So we've been acknowledged for that as well, which is great.

Opportunities in the school involved using the school resources to facilitate after-school activities such as homework clubs, where pupils could be supervised whilst completing their homework and be taken home on the school minibus. Generally, the schools have better internet connectivity than rural homes, although this may be due to individual families' ability to provide internet services in the home. Rural school staff work hard to overcome all manner of barriers and appear to take a proactive and reactive approach to opportunities within school time, based on the knowledge they have on individuals' ability and aspirations, immediate community resources and family circumstances. U2 stated:

"……we are not allowing being in a rural area to be an excuse, …… But, what we tend to find in this area is that everybody is – it's a proud community, rural communities are proud."

Good School Managers have an understanding of the challenges and experiences of pupils living in deprivation in Wales. As U5 said:

…when people understand that context and the challenges that pupils face …… then, it is easier to decide which strategies that are going to be effective for pupils, because there is also this assumption that free school meals pupils don't perform as well because of ability, and that's totally wrong, …… there are huge factors that have affected the children before they have actually arrived at school, so by the time they get to secondary school, you know, the things like low birth weight, have the mothers smoked during pregnancy? There are a shed load of factors there that we have no control over. All we can do is educate the children like we can here, to teach them about the dangers of smoking, to teach them about... so it's trying to be proactive, isn't it?

Celebrating success
All eight School Managers interviewees spoke about celebrating success of the pupils in their class or their school. There was an encouraging sense from all the interviewees regarding behaving positively towards the pupils for their good behaviour and for displaying progress of achievement in the schools. However, when comparing the data in terms of the interviewees being from a rural or an urban school, it was evident that there was some detriment (negative reinforcement) involved for the rural setting.

C2 said that they did take house points away from the pupils for unwanted behaviour such as being loud in the corridors.

None of the four interviewees from the urban setting mentioned the element of punishment. For both settings, much more emphasis was placed by the interviewees on rewarding the pupils for their good behaviour and their achievements. Some of the tangible rewards mentioned were the awarding of certificates to the pupils and an end of project party. C3 said:

It is about rewarding children for what they do, and in a way, that helps them. A good example, we did a lot with working with a group, 'Lost in the Past' it is called, and it is an Art Programme with Dementia sufferers, and the children got a huge amount out of that and had a little party. The reward for them was working with these people, and the little part that they had at the end, you know, the experiences that they got, they thought, "Well, we're out of class." It was the older children, but, you know, I think they got an appreciation out of it, and I think that was incredibly valuable as an education.

Celebrating success through social media feeds was also done by some schools. For example, U5 said:

(We)… celebrate success through the Twitter feed, which is instant. We celebrate success on the TVs around school. There are children who have been involved in representing the school at national events. They are acknowledged. We'll have, we have an internal email system and staff briefings where people say, "Can you congratulate so and so for this?" or, "Can you be aware that so and so has managed to succeed, can you congratulate him?"

Overall, success is celebrated in a variety of ways and is celebrated differently in urban-set schools as compared to rural-set schools. The variety of different methods of celebrating success is emphasised by U4, who said:

...... it's links with college, it's taking them out on trips, and it's involvement in activities whereby they can travel to XXXX (city) university. We've got good links there, we have taken pupils there and spent a day doing physics and chemistry revision. We have also spent time in XXXX (name) college, following science courses where our staff have gone to the college and use the facilities that we don't have in school to do experiments which are more relevant. Cultural trips, involvement in artwork, having art displayed in the local miner's museum… we've had artwork displayed in one of the local community centres in XXXX (name of place). It is assemblies, they have passed the PSE programme, it's external speakers coming in, it's achievement evening, it is talking about achievement, it is giving certificates out at the end of every term, it's prizes, either a selection box at Christmas or an Easter Egg, you know, if pupils have done particularly well. In the more subjects they will have some sort of reward, all of that is hopefully raising attainment and thereby, social mobility.

Family engagement

Attendance at school
Schools are required under the Education (Pupil Registration) (Wales) Regulations 2010 to take an attendance register twice a day: at the start of the morning session and once during the afternoon

session, thus School Managers are acutely aware of the factors involved in pupils not attending schools and identify these as having detrimental effects on academic attainment. As U3 stated:

…the only thing that has the biggest direct influence in the school is presence, but the reason attendance is poor is because of lack of enforcement at home and lack of importance that is given in the home for good attendance at school …… It's a constant sermon …… if the pupils are not here, we can't help them with their education.

School Managers express concerns over the ineffectiveness of current methods used to reaching out to parents who, in their view, would benefit from understanding the importance of good attendance and school achievement**.** There is a sense of preaching to the converted using the traditional methods of parental engagement. For example, reporting on a quantitative percentage of absenteeism to parents can have little effect as the figures can often be misleading to parents - as U3 notes:

…when I'm talking [to parents] about 90% [presence], it doesn't mean anything to parents. But in saying, "If you look over the last 5 years, your child has missed six months of schooling," that has an impact.

There are synergies between schools in the way they approach parents when they have concerns over absenteeism; sensitivity and non-threatening language is used in initial letters, and staff such as Pupil Support Officers will coordinate meetings between school staff and parents, or the school may provide a counsellor on a weekly basis.

Most School Managers mentioned that they exhaust all internal methods of exclusion first before working with parents in cases of non-attendance. However, non–compliance with the attendance rules of the Local Education Authority (LEA) can and do end with prosecution of the parents as the final straw for non-attendance of pupils. School Managers are under pressure to follow LEA and Welsh Government guidelines (Welsh Government, 2012).

Support from parents at home
Parental support is seen as paramount for educational achievement. Where parental support is strong, educational attainment is high, but when the level of parental support is low, school staff themselves cannot provide much in terms of practical 'hands-on' support. Some families are in need of more social care because they are not coping well. As C3 explains:

…we've got families who, you know, have massive social problems, partners in jail, for instance. For one family, four or five children.

There is also an acknowledgement that some parents are unable to support pupils at home because of their own experiences of education. These barriers are well established in the literature on andragogy. To quote C3:

…we've got parents who can't get up in the morning and who have got no purpose or direction themselves, who were badly served educationally when they were in school, and they are not transmitting to their children the importance and value of education. And I don't think that there is a great deal that schools can do about that, and that is the motivation is that that interest in education and the willingness for them to do better than they did.

Some school staff try to engage parents and pupils' curriculum development at home but experience unwillingness as parents perceive that education should be confined to schools, as detailed by C1:

...we are trying to support, well, what we say to parents is that …… they are part of their children's education as well, and that's not just sending their child to school and expecting that it will be achieved there…

Many School Managers reported that both preventative and restorative approaches are used when working with many agencies at both primary and secondary levels. However, some Managers feel that their efforts are not acknowledged by the very systems designed for seamless support of families. As C3 states:

…I make referrals for things like… family support or child in need support, and it's… there's lots of well-meaning words, but nothing really seems to happen.

U4 expands on the complexities and in-depth issues involved in co-working with agencies and families:

Barnardo's …… Local Authority Teams, Mucada, which is the substance misuse service, so we bring counsellors in to work with pupils that we have identified as having an issue, and we use the sexual relationships team from the local authority, which is made up of nurses, people on the health side, the youth service to come in and deliver a programme in Year 9, a full day programme. So we do a lot on smoking, dealing with alcohol issues, that is all in PSE. But that is a general theme within the area because we know the community has health problems, you know, we've got high rates of heart disease in this area, type II diabetes, obesity, hypertension. There are all sorts of issues…

Housing quality

Housing quality did not appear to be a substantial issue in relation to educational achievement in rural areas. The overall view of the School Managers was that housing was generally of a reasonable standard (with a few rare examples of sub-standard maintenance of rented properties). Overcrowding and being a 'young carer' were seen as bigger issues in terms of housing/home quality. None mentioned the availability (or conversely non-availability) of literacy resources e.g. books at home.

Home culture and aspirations

School Managers in the secondary schools all stated that they strategically plan to raise aspirations of pupils by setting targets alongside parents and working in collaboration with local colleges. As U4 explains:

It's about trying to raise aspirations. It is about trying to get parents on board and to inform parents, involve them and get the message across of what we are trying to do, and to seek their support and to make them aware. But it is also to focus on the pupil, and because we are a small school, to have a clear idea of that pupil's pathway and what the progression needs to be.

Home culture also has a direct impact on higher education aspirations of pupils who have the academic ability to succeed. However, this is not always in a positive direction. As U1 explains:

...if you would create a table of 10 schools there, we'd be at the bottom of the table for the number of children that have applied to university. And it is clear that it is the home circumstances of these children that makes them think twice about attending university. Clearly, the message from the Head Teacher and the Management Team is, take advantage of this opportunity now because the fees are probably going to go up, so it'll cost you more. And even then, 36% decided not to choose university, and that is 'huge'. This number is huge, considering the number who go through 6th form with us. And I just have to speak with the children, money, finance and the risk of falling into debt is the main reason why these children do not go. They get a job, apprenticeship or whatever …… But it is their choice not to go to university.

Active community links

In all eight schools, the community was a topic that was referenced often. In general, School Managers spoke positively regarding what the community had to offer in terms of resources. The closeness of the community seemed to be an important factor. This was exemplified by this comment by C1:

… we work in three schools also, so their extended community is there. XXXX (school name) school is a church school too …… there is plenty of grassy areas on the schoolyard and to work…

Community resources included libraries, a cinema and a leisure centre. The School Managers in both very rural and more coastal communities spoke about the closeness of the community. Also, the landscape itself was seen as a feature that offered opportunities for the pupils, demonstrating the importance of experiential learning. U5 said that:

One of the things that our children living in this amazing coastal location is that they don't realise how fortunate they are. And we've started negotiation with a local business that promotes sporting activities which cost nothing, such as walking the coastal path, looking at opportunities for coasteering, there are, they have kayaks, they are going to allow the children to go kayaking without having that huge cost.

Transport was an issue for some of the rural School Managers, e.g. U5 said:

Being in the location that we are in, which is a fair distance from the closest city, then transport is an issue…

The quote by U3 expands on this issue of transport further:

…there are no trains… In terms of public transport… specific buses bring pupils to school, so there is no need for public transport for that …… there are no buses after half-past four…… we have two minibuses here …… we also use the school's minibus to take any pupils home from homework club ...… and, where necessary, from other extracurricular activities.

However, in rural schools quite closely located to towns, Managers also mentioned that public

transport was an issue, especially late in the evening or on weekends.

Regional Education Consortia
Some School Managers noted positive support received from the ERW/GwE Consortia. This is

exemplified in the quote by U4:

Well, ERW provides us with support in terms of we've had visits from the Science Advisor XXXX (name) who is coming to work with our department, looking at Schemes of Work in Key Stage 3 and how we can raise attainment in Key Stage 4. Obviously, a concern there now that Science is expected to, with the new measure, it is expected to get two GCSEs from pupils from 2018. A BTEC will stand for 2017 …… He's been coming in to help the member of staff presently due in post …… We felt that having a Science Advisor would be beneficial to the department, and therefore, to the pupils…….

And the benefits from Consortia Continuous Professional Development events was explained well by

U3, e.g.:

Yes, there have been conferences, several conferences. That's the one thing that the Consortia – GwE – have done is to hold conferences on the impact of poverty on attainment and achievement of pupils. GwE has done so where there has been good practice, where there are schools where GwE considers there to have been good practice, and where Estyn has said that there is good practice in terms of performance and how these pupils are achieving, to share good practice …...

However, other School Managers reported that they were not fully aware of ERW/GwE Consortia

initiatives or of the role of the Consortia. Some comments include the following from C3:

There has been a couple of conference-type courses, and that is about all I can think of if I am honest… I think that there is some confusion about what Regional Consortia are there for at the moment…

Some noted that their initiatives were school-led. For example, U5 noted:

It would be good if we knew which initiatives there were, and nobody has come with any initiative to suggest, so why don't you do this with free school meals children? And the thing is, there isn't a specific blueprint for what to do with free school meals children. Um, we, I think we led on this initiative, and other schools have thought, "Oh that's a good idea. How about we do that as well?" because you have to …... use your initiative to look at the best way of supporting our pupils…

Some School Managers suggested that more support and funding has started to filter down to schools

from the Welsh Government in recent years since poverty has become a national priority, as TAGU1

noted:

This is a national priority, to respond to students in deprivation and poverty, and it comes down through the Consortia, through local councils in this county, and finally down many schools too…

Local authorities are responsible for the budgets each school receive, and therefore, the local

education authority is blamed when budgetary cuts affect the extent to which schools feel they can

support less privileged pupils. As U5 highlighted:

I do get frustrated that there isn't recognition of the work that certain schools have to do with… individuals coming from deprived backgrounds, in trying to get their attainment up …… [With the] Pupil Development Grant there should be an extra source of funding for extra work, and it's not necessarily the case, because insufficient funding coming from the local authority.

U5 also noted that it is only recently that poverty is being tackled in a way that is felt by the recipients

through the extra money made available through other non-local authority funding:

And it's only recently that I've started to see a difference in the last two years since Schools Challenge Cymru was set up. For the first time in any discussion I've had at local authority level that there was recognition that we were slightly different to other schools, and I never got that until that there was that recognition that we were facing those challenges …… one of the differences is that, as a school, with the local authority not having the funding to refurbish the school …... and the money coming from Schools Challenge Wales, it's certainly made children feel as if they are valued.

There is also a sense of unfairness around an excessive focus on metrics and measuring performance.

U3 explains that the current metrics of following the achievement of Free School Meals pupils is a 'bit

of a nonsense':

...Which bit of 'nonsense' in a place where the numbers are very, very small. And there are examples of schools, especially from Estyn, who are considered to be excellent schools, but they do not get a green or amber category because of the number of free school meals children not reaching their target, do not reach the target. …... So, when the numbers are small, I do not think there's any meaning to it, to tell you the truth…

Estyn

The schools auditing body, Estyn, scrutinizes how the PDG is used in all schools. U3 explains:

...when they're in school, Estyn inspectors specifically ask now, "What use do you make of the Pupil Development Grant?" And of course, that Estyn being Estyn ask, "What is the effect of that?" That is, what use are you making of it? And we are able to say, "We've employed an extra teacher. We've employed a learning coach. We've employed a welfare officer," or whatever to support these pupils. And, of course, Estyn ask you what effect has it had? Of course, what they are interested in is the quantitative data, right? The results.

All schools should record the attendance of each pupil. Traditionally, schools with high numbers of free school meals pupils have worse attendance. C3 believes that Estyn's expectations regarding school presence have been unreasonable:

Estyn have put a rod through everybody's back through putting emphasis on attendance as a way of improving educational standards… Yes, when it's absolutely abysmal and like it was in the mid-eighties, yes, I can understand that, but hammering schools when its point five of being – and you know this quartile business, it was targeted, there was a social element to it, welfare, that was the idea, it was pupil welfare, now it's pupil attendance.

Some managers suggested that they would like Estyn and the Regional Consortia to work alongside schools in a less judgemental manner. C3 said:

…if you can take the politics out of it and try to be more collaborative in the ways of working, less judgemental, with the Estyn and the Consortia working closely together. At the minute, they seem to be in competition with one another, and I don't think Estyn think that the Consortia should be judging schools, because, in effect, they are helping towards the categorisation of schools …… what you tend to have in the back of your mind is, okay, we are doing this, but what is the impact? That is all Estyn want to know, what is the impact… I don't think that there is a great deal of incentive to …… do things in a different way …… unless you can …… demonstrate that this money has had some impact …….

European Schemes
All of the secondary School Managers interviewed were aware of European Grants which are available for schools in Wales. The 'Cynnydd', 'TRAC', and 'Positive Futures' grants were mentioned by the School Managers. U1 said:

Many 'Cynnydd' workers are already working with some of our pupils here. One comes in to help a pupil with literacy and numeracy, and then we have a youth worker who comes in to work with a pupil, who is not on the free school meals register, to re-focus on GCSE work. And then this week I had a meeting with another worker who is offering outdoor pursuits, and so we are going to choose a group of pupils that would profit from this experience of doing work outdoors, with the emphasis, of course, on transferring these skills to everyday school life.

School Managers in another secondary school spoke about the Positive Futures grant for supporting pupils that want to take part in courses outside the traditional school curriculum. This grant helps with the costs of attending courses that pupils could not access in their own schools. U2 said:

...the Level 2 Agriculture course is supported by XXXX (county) Positive Futures, so we pay, I suppose, £350 per pupil, and they subsidise the rest, …… so that's worked very, very well, that Positive Futures programme has been working. The Agriculture course is XXXXX (name of place), but they do construction and they do the other maintenance and they do something called Business Studies as well, and they go to …… XXXX (another campus) …… and it's been working the last five, six years, and might even be longer, and it's really good, they go for a day… Tuesday in Year 10 and Thursday in Year 11, and they go out and they get a Level 2 qualifications, BTEC qualifications, and it's been very, very successful.

Another European Funded project mentioned was TRAC, which is aimed at supporting pupils from disadvantaged backgrounds who have behavioural management issues. U3 stated:

…and it's called the TRAC programme. And it's European money that is mainly behind that money. And it's big money; I'm not sure how many millions it was…There are a lot of workers that have been nominated to work with schools with specific pupils, with the pupils that are difficult, from deprived backgrounds. And what I like with the TRAC programme is that it doesn't only work with pupils who receive free school meals, that is, there is a complex matrix behind the pupils that have been identified to work with this programme.

School Managers in the primary schools were less aware of European grants than School Managers in the secondary schools, apart from Erasmus grants for teachers.

Welsh Government

The majority of School Managers highlighted the Welsh Government funding available for free school meals, suggesting that this is the clearest route for additional funding in primary and secondary schools. The belief is that the free school meals initiative is used as a measure for the Welsh Government in order for them to understand the regional and school social economic status, for them to have a reliable measure of the situation. As a consequence of the free meals, the pupils are easily distinguishable and known within the school. U3 said

At the moment, we are acutely aware, there is a lot ...... more awareness nowadays in schools of exactly who these children are… and these are the children that we would consider… okay, the word 'poor' is not always relevant to them, there are different criteria of course for that, but where we as a school are concerned, that is the criteria that is to be used by the government, the Welsh Government at the moment is of course free lunch…

However, rural schools did not believe the funding strategy from the Welsh Government is fit for purpose due to the bias towards the number of funding available to schools with a high percentage of free school meals pupils. Their perception suggests a contrast in the English system where the available funding from Westminster is much higher and more readily available in comparison to the funding available from the Welsh Government. U1 stated:

But to be honest, we are very limited, the funds we have from Development Grant funding, because the money that all schools get now is reducing over time. The Welsh Government would not agree with me, but, of course, funding of schools in England is so much more than schools in Wales, so there is much less money coming into a school like this because the number of people claiming Free School Meals is less. And if you'd just travel six, well, ten miles down the road, to XXXX (name of a nearby town), 20% of the children there come from homes where they can claim Free School Meals… you could imagine then how much more they get from the Pupil Deprivation Grant.

Phase 1 summary

The purpose of this poverty in rural education qualitative fieldwork was to ascertain the perceptions of School Managers on the factors that influence the achievement of pupils in rural schools in Wales. School Managers from eight schools were interviewed, and a semi-structured interview schedule was used to guide the discussion (Ritchie et al., 2014). Twelve themes arose from the qualitative data, and these will be discussed further in this discussion section.

All School Managers portrayed the image that their school was dedicated to dealing with issues of poverty and underachievement of pupils. All talked about the PDG and the way that it is spent on resources and extra teaching time to break down the barriers and bridge the inequality between pupils from deprived backgrounds and pupils from families who are managing well (Welsh Government, 2014a). Pupil to teacher ratios were improved in some schools where the number receiving PDG was highest, usually in the more urban and coastal of rural schools.

All School Managers were aware that they should be spending the PDG grant money wisely and that they were being scrutinized by their Regional Consortia, the LEA and Estyn (Estyn, 2012). All understood that the cost-effectiveness element of any educational/wellbeing intervention had to be established, but some felt limited in terms of creativity and lacked the confidence that they needed to try new things out in case of future repercussions by inspectors and other judges.

Personal (or rural) pride and an anti-benefits belief were factors suggested by School Managers as being the reason why some parents did not claim free school meals for their children, despite being eligible to do so. Some School Managers were trying to break down these barriers of rural pride and were helping parents and guardians to complete the necessary forms in order for the school to equally benefit from the additional PDG monies. Other rurally located School Managers would not push parents in this direction as they were also personally from the same kind of 'anti-benefits', rural, often agricultural community, where families had to be seen to be managing. The 'stigma' of claiming free school meals is also described in work by Iniesta-Martinez and Evans (2012), the Welsh Government (2013a), and Holford (2015).

Fundamentally, free school meals were seen as an inadequate measure of poverty, and a few School Managers suggested 'ever Free School Meals' (eFSM) as a better measure of those who should be entitled to extra opportunities within the Welsh school system. This eFSM measure would track all the children and young people who had ever been on the free school meals register, and not just the pupils currently receiving free school meals, as this register was in constant flux in most schools as parents must be in receipt of certain benefits for the child to be eligible (Welsh Government, 2013b).

All School Managers emphasised the need for a close relationship between the parents and the school for the child's full potential to be reached (Welsh Government, 2014b). Family support in terms of parental time, raising aspirations and meeting the unique needs of their child/children were seen as paramount to school achievement. However, there was also some dissonance with regards to what the core role of the school should be, and policy/regulations and resources, especially when it was seen traditionally to be the role of Social Services and not Education.

Student engagement and absenteeism levels were also of importance regarding educational achievement. In some schools, youth workers were employed from the PDG money to track pupils' progress and their level of absence from school. Pupil welfare was seen as fundamental to achievement, and many similar processes (called different things in different schools) were in place to aid keeping the child/young person in school and engaged in school work (Welsh Government, 2015). There were arguments put forward against exclusion and practices and processes placed on them. External exclusion was not the preferred exclusion strategy, and School Managers tried their best to keep their pupils engaged in school work on the school premises despite low engagement within the traditional classroom. Internal exclusion (sometimes called internal seclusion) with support was offered at each of the secondary schools who took part in this study. It was believed this not only helped with absenteeism levels but also with keeping the pupil and parents focused on the end goal of educating the child for a bright future (Welsh Government, 2012).

Contrary to commonly held beliefs of rural schools, not many days were lost due to child labour on rural farms. This may have been more of an issue in the past, but since the All-Wales Attendance Framework (2011), School Managers have stressed the importance of presence in school for

educational achievement, and children and young people from rural farming communities attend school with the knowledge that they will need to be able to read and write and count in order to be able to take part in modern agriculture now and in the future.

Phase 2: Quantitative data analysis on educational attainment at Key Stage 2 and Key Stage 4

This quantitative exploratory work follows the qualitative report produced as part of Phase 1 of the REAP research. Phase 1 of the REAP research focused on gaining insight from managers of rural schools in Wales regarding their perceptions of factors that influence the educational attainment of pupils experiencing poverty. A total of twelve themes arose from a grounded theory analysis of the interview data that highlighted factors at multiple levels, from child and family contributions to community, school and Government level factors.

The aim of the Phase 2 was to assess the validity and representativeness of the perspectives of School Managers using a quantitative approach. Utilising available child-level outcome data at KS2 and KS4, we explored the predictive relationships between rurality and other school, community and child-level factors within an exploratory multi-level model framework.

Defining Rurality in Wales

In the broader context of the British Isles, the majority of Wales would likely be classed as rural or less sparse in relation to large conurbations of England, Scotland and Ireland. In the present project, we used the definition of Rurality in Wales outlined in the technical report by Jones (2015, p. 4). 'Urban' schools included those in large and small less sparse towns, where rural schools included all other classifications. For details on UK-wide rural-urban classifications, see the technical paper by Bibby & Brindley (2013). In Phase 1 of the REAP research, there was a focus on the distinction between coastal and countryside rurality. There is at present no freely available source for statistical delineation between coastal rural and rural countryside LSOAs, despite Welsh Government tendered projects highlighting such methods (Oxford Consultants for Social Inclusion, 2016; Peter Brett Associates, 2016). For this reason, the present analyses make the distinction only between rural and urban school.

A brief introduction to multi-level modelling

Data in education settings are often hierarchical or nested in nature. For example, each group of pupils will be educated within an individual school, and each school will be situated within a specific local authority. So, pupil data is nested within schools, which is nested within local authority. As such, many traditional statistical approaches are inappropriate because they fail to take account of the data

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structure. Multi-level models are specialised regression techniques that account for nested data structure. These models enable the researcher to explicitly specify sources of variability, providing estimates of the influence of predictors, accounting for the natural variability within the levels of the model we specify (although there will always be additional random error that is unaccounted for). Furthermore, these models encourage deeper consideration about the nature of effects within each level of a model (e.g. are they likely to vary on a school-by-school basis?).

In this investigation, each pupil is nested within a school. Each school is nested within a local authority (LA), which creates our hierarchical or multi-level structure. LA is referred to as a Level 3 factor, school as Level 2 and pupil as Level 1. In Figure 5 you will see an outline of the North West coast of Wales, incorporating some of Gwynedd and the edge of Conwy county. The performance of schools in Gwynedd (A and B) are likely to be more similar to one another than the school in Conwy (C) for a number of possible reasons (e.g. Welsh-medium vs. English-medium education). Overall performance of schools within Gwynedd may exceed those in Conwy. Not only that, school performance is likely to be more highly correlated within LA than between LA. In mixed models, we can account for both the overall differences between LAs and characterise the degree of correlation within LAs by including LA as a random intercept, where we allow the average school performance to vary by LA (e.g. overall LA-to-LA difference). The logic of this would flow through to the next level of the model.
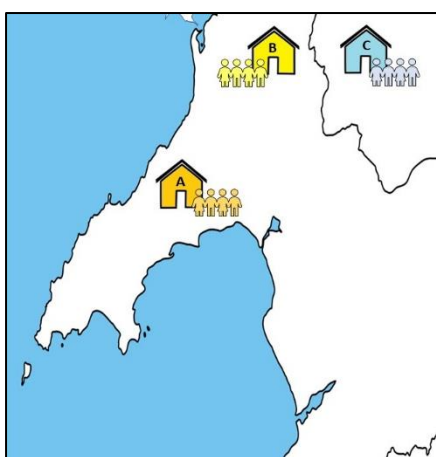
Figure 5: Hierarchical structure diagram of children (level 1) nested within schools (level 2) within local authorities (level 3). Relative colour gradients represent more similarity within levels.

As well as random intercepts, we can include random slopes in the model. A random slope accounts for variability in the size of an effect within a level of the model. For example, the effect that school attendance has on attainment for pupils in School A may be more pronounced compared to School B. This could equally apply to school-level factors within LAs, as well.

Taken together, when we utilise multi-level models, we explicitly specify the structure of our data and identify possible sources of variability. In specifying the hierarchical structure, we gain an additional advantage over traditional regression – we can easily incorporate questions regarding cross-level interactions. For example, *how does receiving free school meals affect attainment of pupils in Rural compared to Urban schools*? We would need at least two traditional regression models to answer this question using traditional analyses. For more general introductions to multi-level models see (Kreft & de Leeuw, 1998; Luke, 2004; O'Connell & McCoach, 2008; Snijders & Bosker, 2011).

Sampling

Data from the 2016 school year were compiled by data management specialists from ERW and GwE regional school improvement education Consortia (covering 12 counties in Wales), collating information from a number of sources: 1) the StatsWales website (https://statswales.gov.wales/), including the Pupil Level Annual School Census (PLASC: http://bit.ly/2uNKbl2) and the Wales Index of Multiple Deprivation (WIMD: http://bit.ly/1TR31vu); 2) Teacher Assessment Collection and the Attendance Collection as part of the National Data Collection (http://bit.ly/2xghw8f); 3) Regional Categorisation Reports (http://bit.ly/2jf4O2W); and 4) Welsh Government Stage 4 candidate and examination reports (http://bit.ly/1LyxDlp).

Predictors

Based on Phase 1 of the REAP research, we acquired available numerical data, explicitly related several of the themes, in order to assess the effect of each of these factors on overall attainment. The same predictors were entered for KS2 and KS4 models, and information regarding data type, summary statistics and the themes they relate to are included in Table 3. Pupil-level predictors were Gender (Male, Female), Additional Learning Needs Status (Yes, No), eFSM status (Yes, Some, None), Attendance (percentage of total half days attended) and Pupil WIMD Access to Service Rank. WIMD access to services rank was extracted for as many pupils as possible based on postcode information.

School-level predictors were School Support Category (Green, Yellow, AmberRed), Rurality (Urban, Rural), and (ERW, GwE). Due to a low number of schools within the red support category in both datasets, we collapsed the Amber and Red schools into a single category (AmberRed). For more information on the statistical coding of the predictors, see Appendix 2.

Key Stage 2 Dataset

The KS2 data included 16,419 pupils from 781 schools across 12 local authorities. However, we had to exclude 7.75% (1274 pupils, 34 schools) because of missing data in key predictors. Although multi-level models are designed to handle missing data at random, the loss of data, in this case, was systematic, primarily at the whole school level, or impossible to impute because of the categorical nature of the variables. Data for 781 pupils (4.77%) had to be excluded, either because individual home postcodes were not available or access to services rank could not be extracted from the available information. Data was lost for 382 pupils from 21 schools because support category information was not available for those schools, most likely due to closure in 2016. An additional 99 (0.60%) were missing attendance data, 33 did not have an ALN status classification (0.20%) and 12 did not have eFSM information (0.07%). The final dataset for KS2 included data from 15,124 pupils from 746 schools across the 12 local authorities.

KS2 Primary Outcome Measure. Academic attainment at KS2 is indexed by the Core Subject Indicator (CSI), a binary variable that indicates whether pupils did or did not achieve at least a level 4 in maths, science, and English or Welsh (depending on first language), based on teacher assessments. For context, descriptive violin plots[4] showing the proportion of pupils within each school who achieved their KS2 CSIs, separated by LA, are presented in Figure 6.

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[4] Violin plots are a combination of traditional descriptive plots. The 'violin' is a rotated density plot, scaled based on the area of the plot within a sample (LA here) with overlaid boxplots. Points represent individual schools.
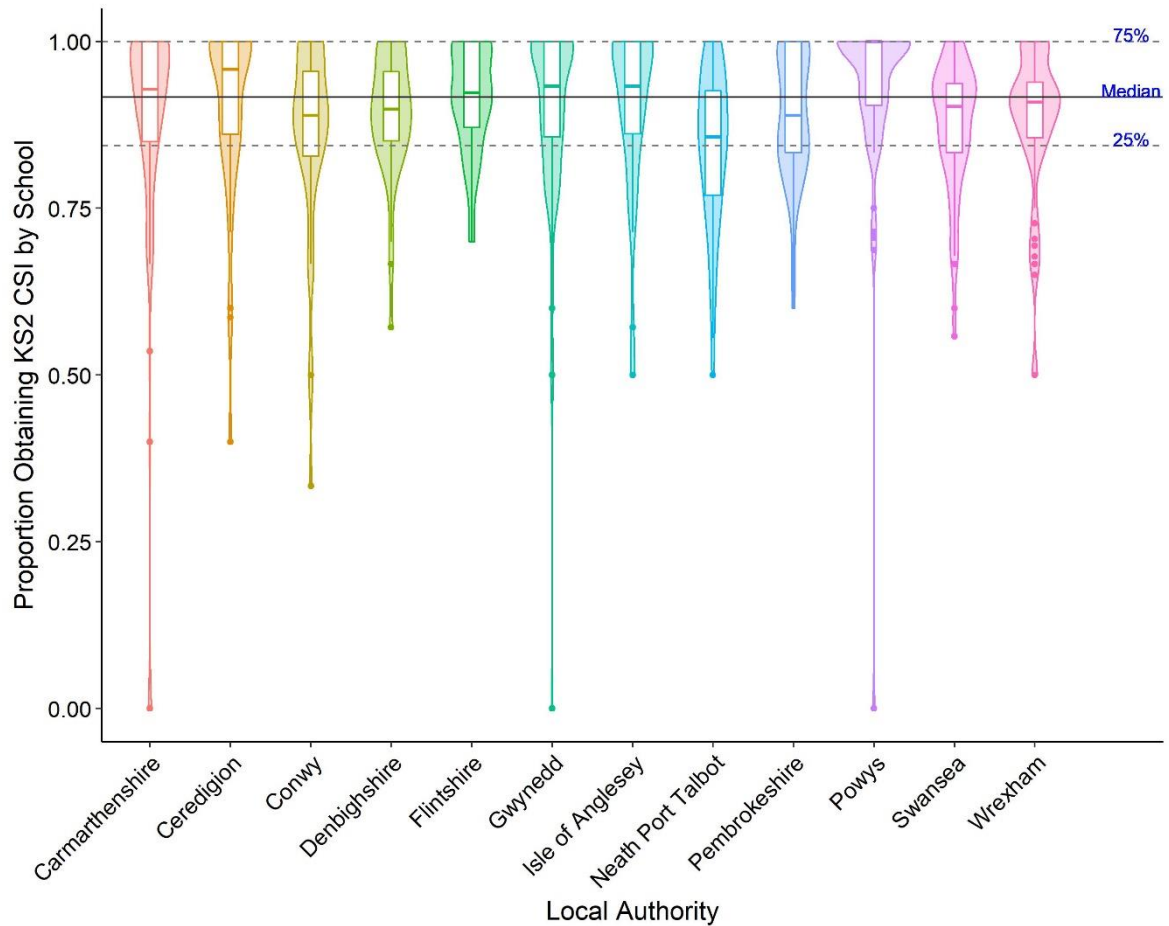
Figure 6: Violin plots with overlaid box plots for proportion of pupils meeting Key Stage 2 Core Subject Indicators (CSIs) per school within each local authority. The thick black line represents the grand median, with 25th and 75th percentiles as dashed grey lines

Key Stage 4 Dataset

The KS4 dataset included data from 16,118 pupils from 154 secondary schools across 12 local authorities. A total of 1694 pupils (10.51%, 32 schools) were lost from this dataset because of non-random missing data: 1008 pupils (6.25%) were lost due to missing Pupil Access to Services data, 451 (2.80%) were lost because of missing Support Category information, 235 (1.46%) for lack of Attendance data. The final KS4 dataset included data from 14,427 pupils, from 122 secondary schools, in 12 local authorities.
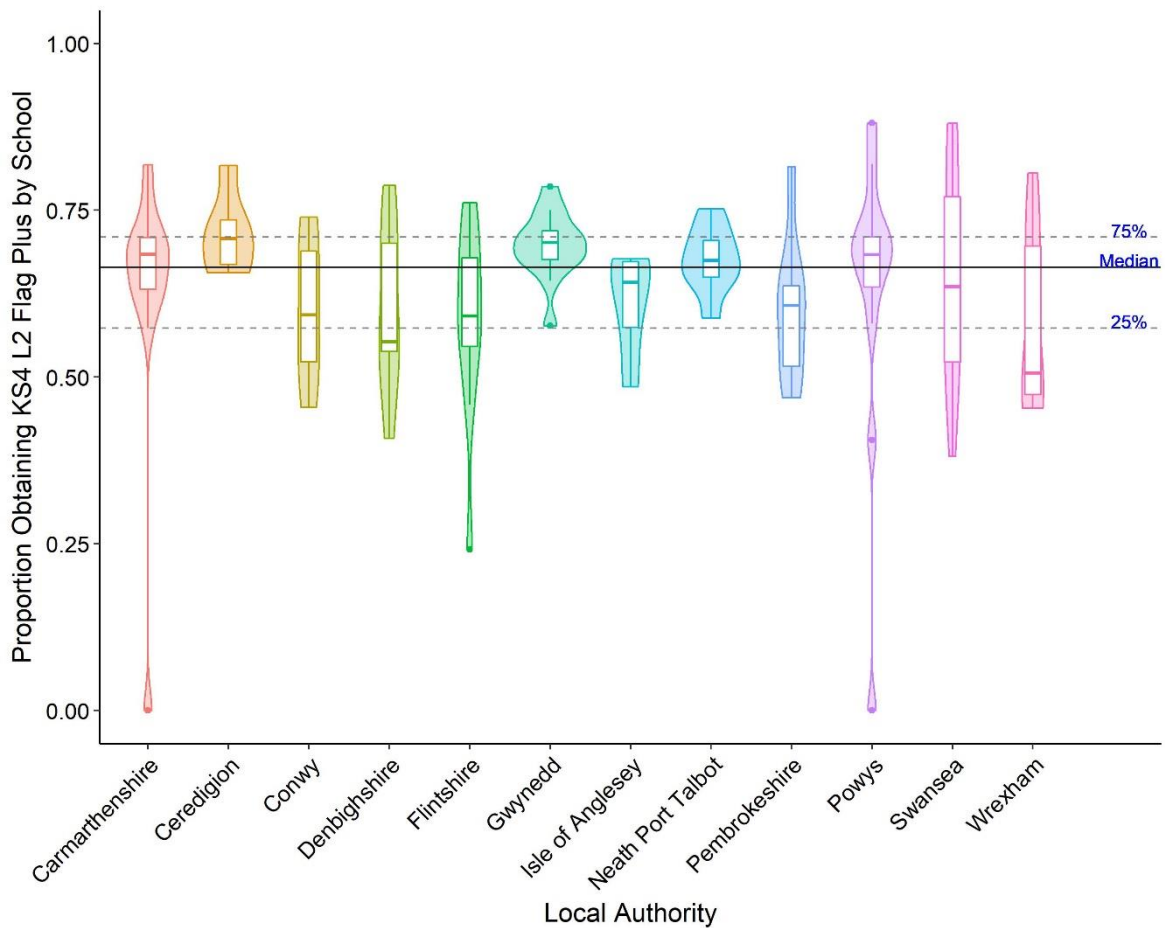
Figure 7: Violin plots and nested box plots for proportion of Key Stage 4 pupils achieving L2 Flag Plus per school within each local authority. The thick black line represents the grand median, with 25th and 75th percentiles as dashed grey lines

KS4 Primary Outcome Measure. For KS4 pupils, the Level 2 Flag Plus is the most common indicator of successful attainment, although numerous metrics are collected for varying thresholds. L2 Flag Plus is a dichotomous variable which measures whether a pupil obtained at least 5 GCSEs at grade A*-C, including maths, science, English or Welsh. For expediency, we focus solely on the L2 Flag Plus. Analyses based on the secondary metrics of the broader L2 Flag and qualification capped scores provide similar conclusions, but because of changes in scale and relative threshold of attainment, the interpretation of some of those results goes beyond the scope of this report. Descriptive violin plots showing the proportion of KS4 pupils per school that obtained the L2 Flag Plus per LA are presented in Figure 7.

Phase 2 results

For the sake of brevity, the full model fitting procedures and coefficients for both KS2 and KS4 models are reported in Appendix 2. Analyses were conducted in the same manner for the KS2 and KS4 data, but we refrain from direct comparison between KS2 and KS4 data because of the differing nature of the primary outcome measures – namely teacher assessments at KS2 versus formal GCSE assessment at KS4. Estimates are based on predicted marginal probabilities generated from the model. Predicted marginal probabilities demonstrate the effect of a predictor for an average school, taking into account random effects and controlling for all other predictors. Mean predicted marginal probabilities are presented visually for KS2 CSI and KS4 L2 Flag Plus in Figures 8 and 9 respectively.

You will notice, however, that some of the estimates from this model are a little unrealistic for the KS2 data. In particular, note the contrasts between pupils with and without ALN in Figure 3B and Figure 3H**.** In these figures, close to 100% of pupils without ALN are estimated to achieve their CSI. There are two probable causes for this. First, the predictions are driven by huge differences in likelihood to achieve CSI between the two groups of pupils. Second, the push to ensure increasing numbers of pupils achieve the CSI seems to be resulting in a natural ceiling. If ~90% pupils are achieving their CSIs, then there is little variance to model – pupils are no longer able to fail – and error bars are difficult to estimate effectively.

Table 3: Summary of Predictors with Relevance to Phase 1 Themes with Summary Statistics for KS2 and KS4 pupils and schools

	Description	Stage 1 Theme	Key Stage 2		Key Stage 4	
School Level Factors			Value Labels	Summary Statistics	Value Labels	Summary Statistics
Consortia	The governing consortia within which schools and local authorities are based.	8. Consortia Rhanbarthol/Regional Consortia	ERW	Pupils (n): 54.46% (8241) Schools (n): 53.62% (400)	ERW	Pupils (n): 55.08% (7946) Schools (n): 55.73% (68)
			GwE	Pupils (n): 45.54% (6892) Schools (n): 46.38% (346)	GwE	Pupils (n): 44.92% (6481) Schools (n): 44.26% (54)
Rurality	Based on definition by Jones (2013). Reference level: Rural	1.1 - 1.3 Lleoliad gwledig/Rural location	Rural	Pupils (n): 43.68% (6610) Schools (n): 62.06% (463)	Rural	Pupils (n): 38.21% (5512) Schools (n): 46.72% (57)
			Urban	Pupils (n): 56.32% (8523) Schools (n): 37.94% (283)	Urban	Pupils (n): 61.79% (8915) Schools (n): 53.28% (65)
School Support Category	School challenge support days from StatsWales. Amber and Red schools combined because low number of Red Schools. Reference: Green	1.4 - 1.7 Categori cymorth ysgol/School support category	Green	Pupils (n): 43.68% (6610) Schools (n): 23.99% (179)	Green	Pupils (n): 30.69% (4427) Schools (n): 27.05% (33)
			Yellow	Pupils (n): 43.68% (6610) Schools (n): 58.98% (440)	Yellow	Pupils (n): 34.03% (4909) Schools (n): 35.25% (43)
			AmberRed	Pupils (n): 43.68% (6610) Schools (n): 17.02% (127)	AmberRed	Pupils (n): 35.29% (6610) Schools (n): 37.70% (46)
Pupil Level Factors						
Pupil WIMD Access to Services Rank	WIMD access to service rank for each pupil based on home postcodes. Higher indices represent higher levels of deprivation.	7. Adnoddau cymunedol/Community Resources	Mean (SD) Median (IQR) Range	804.44 (542.64) 777 (918) 1, 1903	Mean (SD) Median (IQR) Range	808.33 (548.52) 782 (912) 1, 1903
Attendance	Continuous predictor. Adjusted log transformation to correct negative skew.	6.1 Presenoldeb/Being Present	Mean (SD) Median (IQR) Range	95.11% (5.06) 96.32% (5.06) 6.58%, 100%	Mean (SD) Median (IQR) Range	93.86% (7.87) 96.18 (6.06) 1%, 100%
Ever Free School Meals (eFSM)	Three-level categorical variable. Reference: Yes. Helmert contrasts: Step 1: Some - Yes; Step 2: None - mean(Yes, Some).	2. Grant Amddifadedd Disgyblion (GAD) / Pupil Deprivation Grant (PDG)	Yes Some None	16.27% (2463) 14.19% (2148) 69.53% (10522)	Yes Some None	13.32% (1921) 13.08% (1880) 73.65% (10626)
Additional Learning Needs (ALN) Status	Categorical factor. Reference: Yes	2.1.1 Anghenion dysgu ychwanegol/ Additional Learning Needs	No Yes	77.83% (11778) 22.03% (3334)	No Yes	81.27% (11725) 18.73% (2702)
Sex	Categorical factor. Reference: Female	1. Demographic Data	Female Male	48.41% (7326) 51.59% (7801)	Female Male	48.88% (7052) 51.11% (7375)
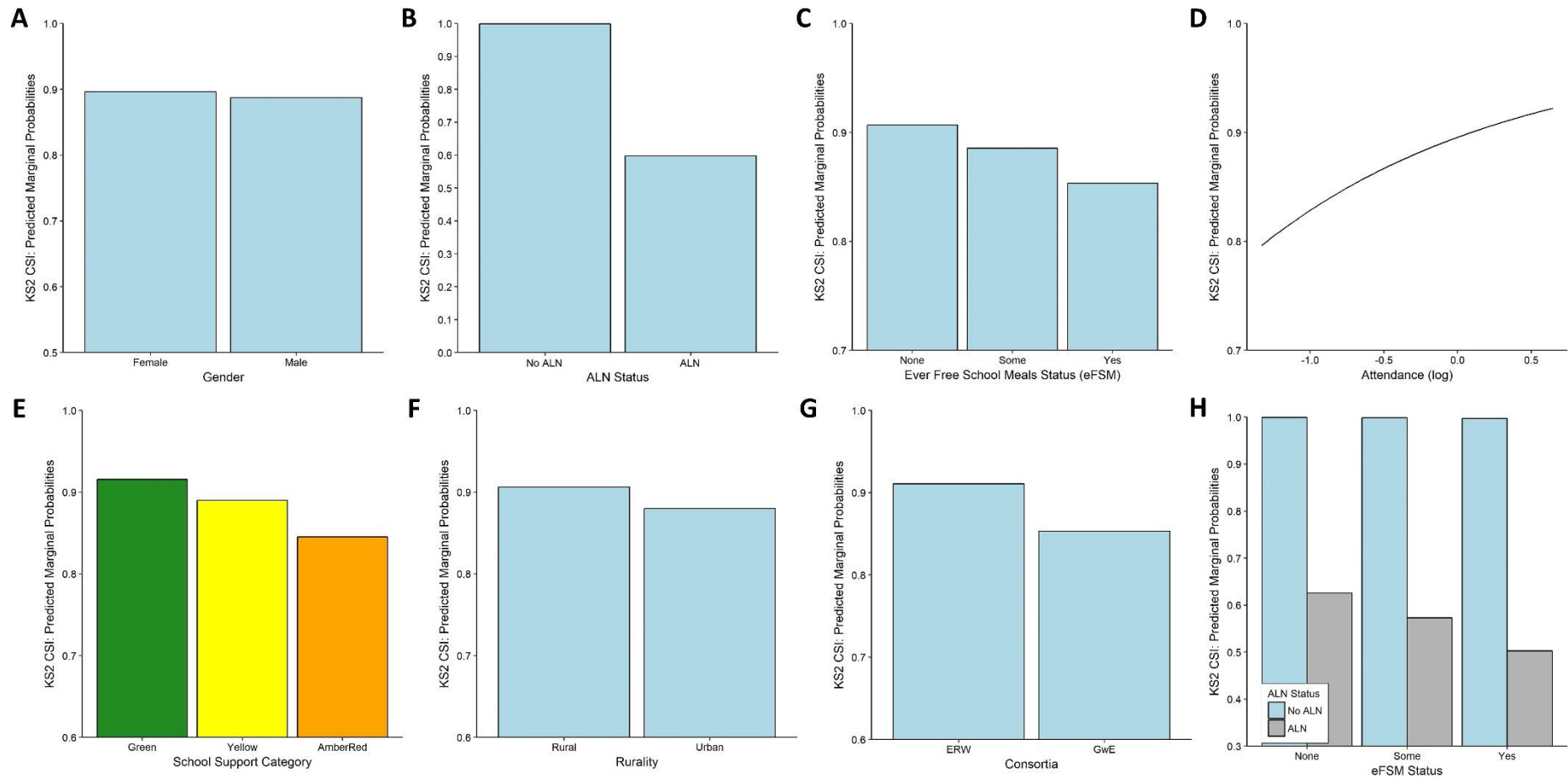
Figure 8: Mean predicted marginal probabilities for KS2 CSI estimated from the final model, at the population level, taking account of random effects. A: Gender, B: ALN Status, C: eFSM, D: Attendance (log), E: School Support Category, F: Rurality, G: Consortia, H: eFSM x ALN Status. Error bars were not accurately estimable for this model.
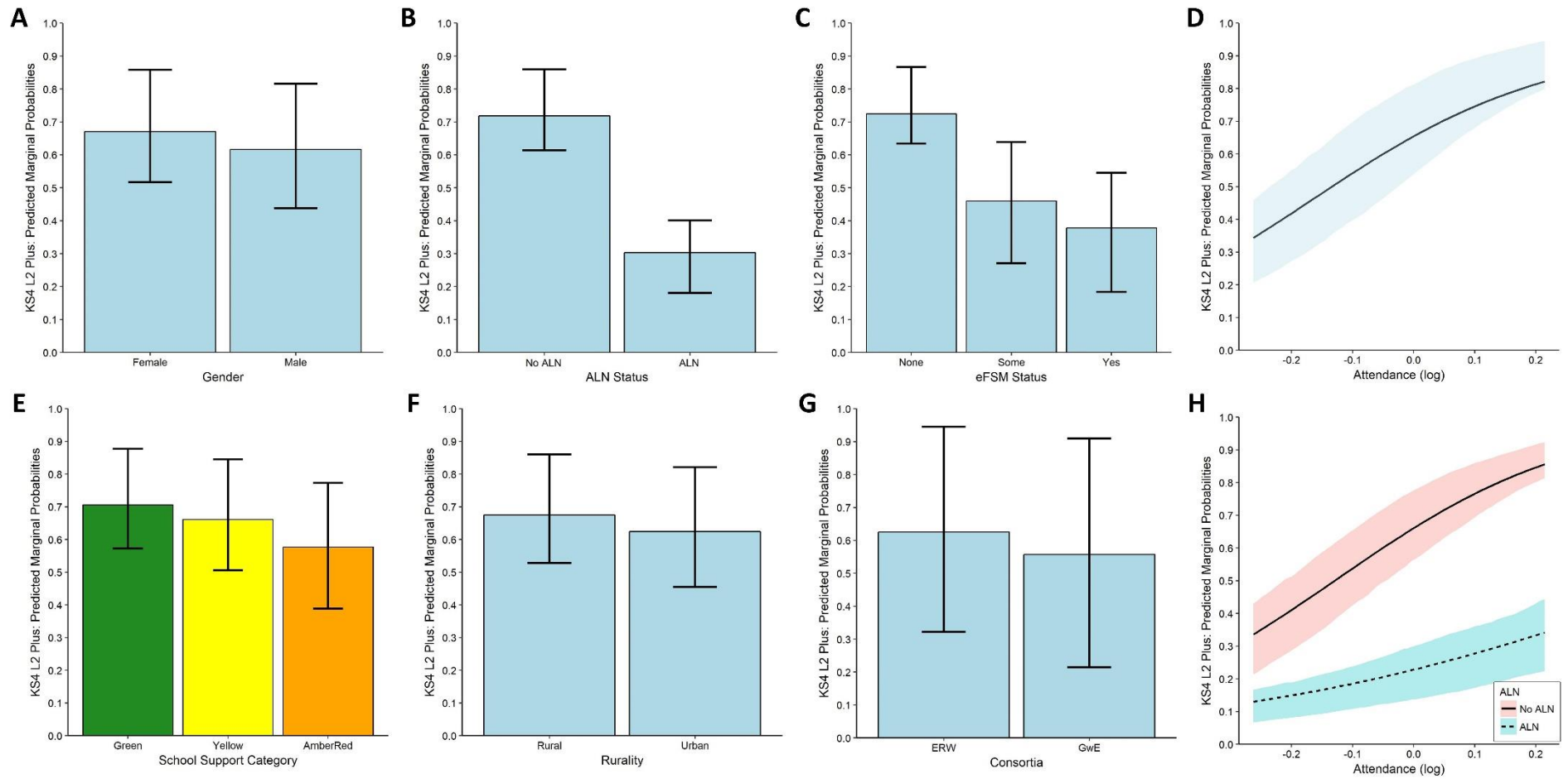
Figure 9: Mean predicted marginal KS4 L2 Flag Plus probabilities estimated from the final model at the population level, taking account of random effects. A: Gender, B: ALN Status, C: eFSM, D: Attendance (log), E: Support Category, F: Rurality, G: Consortia, H: ALN x Attendance (log). Error bars represent interquartile range estimated from marginal probabilities.

Key Stage 2: Model outcomes

Gender: The final model highlights a small but consistent gender attainment gap in favour of female pupils, although this is one of the smallest predictors in the model.

ALN Status: ALN status was the strongest predictor of attainment in the final model - as might be expected, pupils with ALNs are substantially less likely to attain their CSI than those pupils without. ALN status is compounded here by experiences of poverty.

eFSM: Pupils currently receiving FSMs, by proxy experiencing poverty, were least likely to obtain their CSI in comparison to those pupils no longer eligible. The greatest attainment gap is between eFSM pupils altogether and pupils who were never eligible for FSMs. The contrast is the second largest effect after ALN status. There is evidence here that release from poverty may have a positive effect on attainment but that any experience of poverty in the formative years appears to have a substantial negative impact.

Attendance: Higher attendance predicts an increased likelihood of attaining CSI and this effect is relatively strong in context of other predictors in the final KS2 model.

Pupil Access to Services: Pupil access to services did not have a substantial influence on CSI attainment.

Pupil-Level Control Interactions: Pupils with ALNs with eFSM status (current or previous) are at increased risk of failing to meet their CSIs compared to ALN pupils who do not experience poverty (ALN x eFSM interaction), although this compounding effect is relatively small and highly variable (based on estimated of 95% CIs) compared to the massive impact ALN status already confers on pupils. No other pupil-level interactions crossed the threshold for model improvement.

School Support Category: School support category demonstrated the expected linear effects on attainment. The proportion of pupils attaining CSI from Green schools is significantly greater than pupils from Yellow schools. The difference is greater still for pupils from Yellow schools compared to AmberRed schools.

Rurality: Rural schools significantly outperform urban schools, although this is the smallest of school-level effects.

Consortia: A larger proportion of pupils from schools governed by ERW obtained their CSI, compared to pupils from schools in GwE. This reflects an overall difference between Consortia, and speculation on the underlying reason for this is beyond the scope of this report.

Cross-level Interactions: None of the cross-level interactions substantially added to the model fit. In the absence of a Rurality x eFSM interaction, rurality does not appear to compound the effects of poverty in Wales at KS2.

Key Stage 4: Model outcomes

Gender: The final model highlights a substantial and consistent gender attainment gap in favour of female pupils at KS4. Although not the most substantial pupil-level predictor, gender has more explanatory power than any of the school-level predictors.

ALN Status: ALN status was the strongest predictor of attainment in the final model - as might be expected, pupils with ALNs are substantially less likely to attain the L2 Flag Plus than those pupils without ALNs.

eFSM: Pupils currently receiving FSMs, by proxy experiencing poverty, were least likely to obtain their CSI in comparison to those pupils no longer eligible, but this difference was negligible between these two groups. The gap between eFSM pupils altogether and pupils who were never eligible for FSMs was large (est. ~40% difference) and reveals a substantive negative effect of poverty on overall attainment at KS4. There is evidence here that even release from poverty at this stage has limited ameliorative effect on attainment.

Attendance: Attendance is the second strongest predictor after ALN status in the KS4 model. Higher attendance substantially increases the prospects of achieving L2 Flag Plus overall.

Pupil Access to Services: Pupil access to services did not have a substantial influence on L2 Flag Plus attainment.

Pupil-Level Control Interactions: The ALN status x Attendance control interaction suggests that attendance is a greater predictor of attainment in pupils without ALN than those with. The plot of this effect in figure 4H demonstrates a much steeper slope in attainment as a function of attendance for

pupils without ALNs. There is a positive effect of attendance for pupils with ALN, but it is much less pronounced. No other pupil-level interactions reached the threshold for inclusion.

School Support Category: School support category demonstrated the expected linear effects. The proportion of pupils attaining CSI from Green schools is greater than pupils from Yellow schools, although this effect is somewhat smaller when compared to the differences between Yellow and AmberRed schools. This predictor was somewhat more variable, probably because of the relatively small number of schools overall.

Rurality: Rural schools outperformed urban schools by a small but consistent margin, although this is the smallest of the school-level effects at KS4.

Consortia: A larger proportion of pupils from schools governed by ERW obtained their L2 Flag Plus, compared to pupils from schools governed by GwE. The predicted difference between average secondary schools from the two Consortia is approximately 9.5% in favour of ERW.

Cross-level Interactions: None of the cross-level interactions substantially added to the model fit. In the absence of a Rurality x eFSM interaction, rurality does not appear to compound the effects of poverty in Wales at KS4.

Phase 2 summary

The aim of Phase 2 of the REAP research was to validate themes extracted from interviews with School

Managers and follow up questionnaires (Phase 5), using data available from national and local

Government databases. Adopting a multi-level framework, we have been able to appropriately

capture the hierarchical structure of the data, characterising sources of variability to properly describe

emergent relationships between pupil and school level predictors and their effect on primary

educational outcomes at KS2 and KS4.

By and large, Phase 2 data reveal synergy with the themes from Phase 1, confirming the intuitions of

School Managers using an exploratory data-driven approach for several key predictors. The advantage

of the present approach is that we have been able to explore potential interactions, to go beyond a

simple restatement of the themes from Phase 1. Our analyses highlight some interesting

dependencies, some expected and others less well documented.

Rurality does not compound effects of poverty

Considering the primary focus of the REAP research, there is no substantive evidence that rurality

compounds the effects of poverty in Wales in the data made available to us. Instead, the present data

suggest that the challenges faced by schools in rural and urban areas, based on Jones' (2013)

definition, are largely similar. Overall, rural schools outperform urban schools, but the reasons

underlying this difference are beyond the scope of this report.

To some extent, the implications of this finding are limited in comparison to Phase 1 as we were unable

to differentiate between coastal rural and countryside rural settings. However, a Welsh Government-

commissioned report has been published over the course of the project timeline that utilised LSOAs

in conjunction with a clear, operationalised definition of coastal towns to determine social-economic

context of these communities for marine planning (Oxford Consultants for Social Inclusion ltd., 2016;

Peter Brett Associates, 2016). However, these data are not currently available online. Utilising the

coastal classification for each of the LSOAs and cross-referencing them using Jones' (2013) definition

of rurality may prove fruitful for re-analysis of this or similar data. Re-analysis of similar data on an all-

Wales basis combined with the coastal classification data may provide some insight with regard to coastal-countryside disparities.

Poverty

eFSM was a strong predictor of attainment at both key stages, highlighting substantive negative effects of poverty. Interestingly, there is some evidence that release from poverty at KS2 may present opportunity for improvements in attainment potential. However, at KS4, differences between pupils currently eligible and those no longer eligible are not statistically reliable. Designing interventions and initiatives aimed at KS4 pupils to mitigate the effect of lifelong poverty, in an attempt to improve attainment, should be a primary focus. With additional social and familial factors associated with adolescence, this is a big challenge.

In light of the aforementioned effect of rurality, the present findings suggest that the development and implementation of wide-reaching initiatives aimed at ameliorating the negative effects of poverty in all communities may be beneficial. That is not to say that there are no unique influences amongst each of these communities, and initiatives should be adapted for the appropriate context. Targeted exploration of additional factors that influence poverty in the broadest sense may well be needed, with particular focus on potentially divergent effects at the two key stages.

Gender gap

Year on year, headlines regarding educational outcomes primarily focus on differences in raw proportions between male and female pupils. Of interest in the KS2 data is the relatively weak effect of gender on attainment in light of all other predictors. At KS2, the raw data revealed a gender gap of around 5% in favour of females. Although significant, the predicted average gender gap at KS2 was less than 1% – substantially less than Government reports would suggest. That is not to say a gender gap does not exist – it has long been established that female pupils outperform males overall. We did not explore the effect of specific subject performance in this analysis, but it may be an avenue for a more nuanced discussion of the gender gap. However, over-emphasis on the gender gap without taking into account the broader context and school-to-school variability potentially diverts attention

away from factors such as ALN status, attendance and poverty, which are more substantial predictors of attainment.

At KS4, the gender gap is more apparent, predicted at 5.38% difference in favour of female pupils. Speculatively, one might expect that this gender gap is borne out of the smaller reported effects at KS2. This is difficult to assess with the present available data, but a longitudinal analysis of pupils/cohorts would help to get to the bottom of this. Almost certainly, the gender gap widens because of a myriad of complex social and familial factors at play that were not necessarily of consequence at KS2. Capturing this information on a national scale is a near impossibility and more empirically driven work is likely better suited to understanding these phenomena.

Data analysis and limitations

We took a principled and conservative approach to building multi-level regression models to reduce the risk of over-fitting and over-interpretation of potentially spurious interactions between key factors. Multi-level models are advantageous over traditional regression models as they are specifically designed to model hierarchical data structures and take sources of random variability into account. Random variability between schools was considerable at KS2 (28.39%) but of little import at KS4 (3.91%) but of interest was the common variability in the effect of attendance between schools. In fact, at both key stages variability in the impact of attendance within schools accounted for the majority of random variance (96.09%; KS2: 71.61%). Moreover, the variability between local authorities accounted for much less random variability. Including Consortia as a fixed effect may have absorbed the variance accounted for by LAs.

Our data analysis was exploratory in the main and, as such, interpretation of observed effects should be made with caution. Additional projects aimed at confirming some of the suggestions above would be useful in progressing our understanding of how these factors affect attendance and may provide insight for the development of initiatives to combat potential negative effects.

The final model for the KS4 L2 Flag Plus was only moderately good, and this suggests that perhaps several key factors are missing from the model. The predictors were limited by the nature of the data collected, as family predictors are impossible for the Consortia to gather.

Both of the primary outcome measures are categorical in nature, and to some extent, this is the only possible way of characterising a threshold for attainment that is easily understood by the broadest number of people. However, continuous metrics such as the average capped wider points score at KS4 (Hughes, 2016) and scaled scores from standardised assessments at KS2 may provide a more nuanced picture. The difficulty here is that continuous metrics can be difficult to interpret in the context of what should count as overall achievement and leave open the potential for encouraging uptake of courses with greater points values. However, a broader metric may provide a better characterisation of the whole range of abilities, beyond basic pass/fail measures.

A note on significance testing

Insofar as was possible, we have aimed to avoid discussion of significance values, focusing instead on the relative size of the effects in context. In such large datasets, small effects can become significant, but significance does not necessarily denote an important effect. Small effects can be meaningful but should be informed by theory and actively sought. In an exploratory model with multiple predictors and numerous model comparison steps, the chances of a type-I or false positive error are high. We have attempted to mitigate this to some degree by adopting strict inclusion criteria for new predictors. The value of the analyses presented is in the interpretation of effects in context relative to all other putative effects.

Overview

The primary aim of Phase 2 of the REAP research was to explore the impact of rurality and poverty on attainment at KS2 and KS4 pupils covered by ERW and GwE. With regard to the primary objective, we observed an overall tendency for rural schools to outperform those in urban schools but no impact of this factor on additional challenges at the pupil-level, including eFSM, ALN and attendance. Overall, the challenges faced by schools and pupils at each of the key stages produce a largely similar pattern.

Pupil-level factors have a greater impact on attainment than school-level factors. Critically, eFSM and ALN status have substantial effects of attainment at both key stages, but attendance is a hugely important predictor at KS4. For pupils with ALN at KS2, they are more strongly affected by poverty at KS2 and less affected by attendance at KS4. Longitudinal tracking of attainment from the end of the foundation phase would be invaluable in disentangling effects of some of the key factors on attainment. Broader exploration of attainment measures and exploration of coastal versus countryside poverty, to explore potential effects in more detail, would also be of benefit.

Phase 3: Stakeholder consultation with children and young people

Sampling

In order to carry out the consultation with children and young people, convenient sampling of 3 schools were sampled within ERW and GwE regional Consortia.

Table 4: Summary of Phase 3 participants

1	Coastal secondary school by towns	Key stage 4	45 participants
		Key stage 2	52 participants
2	Rural primary school by towns	Key stage 2	20 participants
3	Rural primary school by countryside	Key stage 2	23 participants

A total sample of 140 children and young people participated, comprising of 45 KS4 participants and 95 KS2 participants. All children and young people were between 7 and 16 years old and of mixed gender.

Procedure

Obtaining ethical approval by CBLESS Ethics Committee for this Phase was undertaken with sensitivity as research conducted in schools with children and young people under the age of 16 can present ethical challenges such as deciding whether parental opt-in or opt-out consent should be used. In determining this we sought the preferences of the schools and how they communicate information to parents. With the agreement of School Managers, an opt-out consent rather than opt-in consent letter to parents/guardians was the agreed method, ensuring ongoing assent with children and young people during data collection, with children and young people being able to affirm or withdraw at each stage of the research should they wish to do so. A member of school staff was on hand at all stages of data collection so that children and young people were able to voice their concerns to those familiar and possibly had established a rapport with. Since the research did not seek to publish children's (scanned cards) responses to questions, no written consent was sought from children and young people.

CBLESS Ethical approval was given 20th June 2017, deeming the research unlikely to cause distress by using anonymous questionnaires and not involving invasive techniques such as audio/video recording. Plickers (plickers.com) is described as being a simple tool that allows researchers and educational practitioners to collect real-time data and rapid response without the need for student devices and is,

therefore, a suitable tool for tech-limited classrooms. Using Plickers as a tool, children and young people were asked to respond anonymously to 10 broad-range closed questions on matters relating to facilitators/barriers to education at school and in their home environments and associated known markers of poverty (see Appendix 3) by simply showing their option to the researcher for Optical Character Recognition (OCR) code anonymous scanning. OCR codes were printed and supplied in advance to the school and were randomly distributed to children and young people during the data collection activity.

A pre-designed and piloted questionnaire (of 10 questions) was uploaded to Plickers in advance of visiting schools for data collection and could be seen by children and young people on a familiar interactive whiteboard in a standard classroom. Plickers accounts use a password protected system on all devices. Plickers has a strict Privacy Policy[5] whereby scanned codes are instantly uploaded to Plickers secure site, transferred to Bangor University IT system securely and then deleted on Plickers. Researchers were mindful not to disturb lesson times and upheld restricted/protected free times at all schools. They were also guided by the school's staff as to when it would be convenient and appropriate to engage with data collection activity. Each data collection activity did not last more than 15 minutes, save for one activity where the internet connectivity at the school prohibited timely response from children and young people to be communicated due to server downtime.

Data analysis

Data was collated within the Plickers app mobile devices belonging to the researchers. Devices and apps were each separately encrypted and password protected. Once the data collection had ceased, the Plickers app on mobile devices were deleted. Data could only then be securely accessed via password protected encryption at Bangor University computer information technology. An unfortunate occurrence at one school rendered only 8 questions being returned, further limiting the generalisability and transferability of the data. Within and cross theme analysis are shown in the results.

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[5] Plickers Privacy Policy see https://www.plickers.com/privacy

Phase 3 results

The following data in this section relates to **across** source analysis for:

- Coastal secondary school by towns KS4 (45 participants/respondents)

- Coastal secondary school by towns KS2 (52 participants/respondents)

- Rural primary school by towns KS2 (20 participants/respondents)

- Rural primary school by countryside KS2 (23 participants/respondents)

Figure 11: I come to school only to socialise
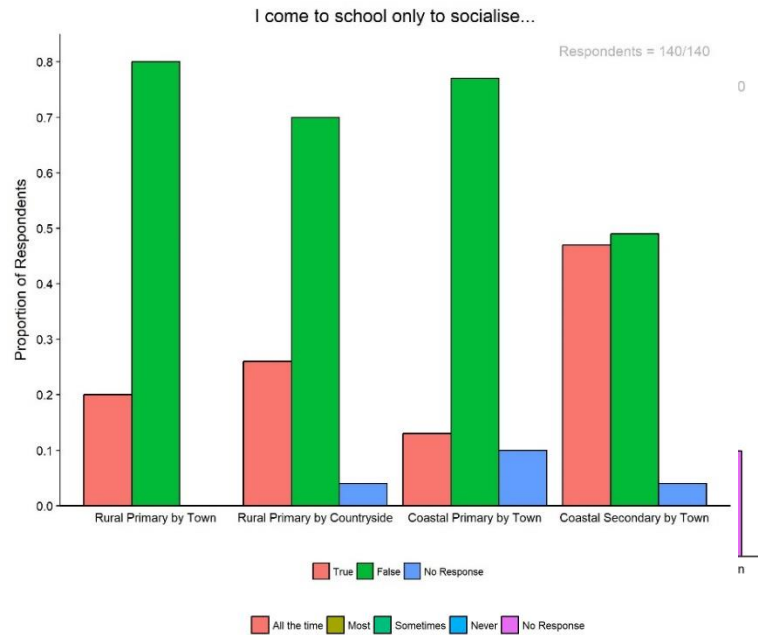
Figure 10: I enjoy coming to school

Responses differ widely by school location. Consideration should be given to the subjectivity of the question, rapport building between researchers and participants and familiarity with Plickers application tools. Research conducted by Gorard and Huat See (2011) offer possible explanations that enjoyment of school tends to be promoted by factors such as successful social relationships, variation in learning and students having some control of their learning. Enjoyment tends to be inhibited by perceived lack of respect or concern by teaching staff and passive pedagogy. Enjoyment, unlike attainment, is not particularly stratified by the standard student background variables, which means that enjoyment should be easy to enhance more widely, positively affecting the learner identities of all young people, including the more reluctant learners. Results were unavailable for one school due to system error linked to internet connectivity issues.

Figure 11: I come to school only to socialise

The first three types of (primary) schools demonstrate that an overwhelming majority favoured an 'untrue' response to this question. Distinguishing whether these responses are attributed to socially acceptable responses (social desirability bias), or whether they are true responses reflecting the influence by foundation phase curriculum teaching and learning methods in Wales is indeterminable.

However, responses received by the last (secondary) type of schools may indicate harmonious or contending pedagogical and social developments and developmental characteristics of adolescent children within a transitional period between childhood and young adulthood. There is increasing significance attributed to the non-response rates across three type of school locations.

66

I come to school to share my concerns...

Respondents = 137/140
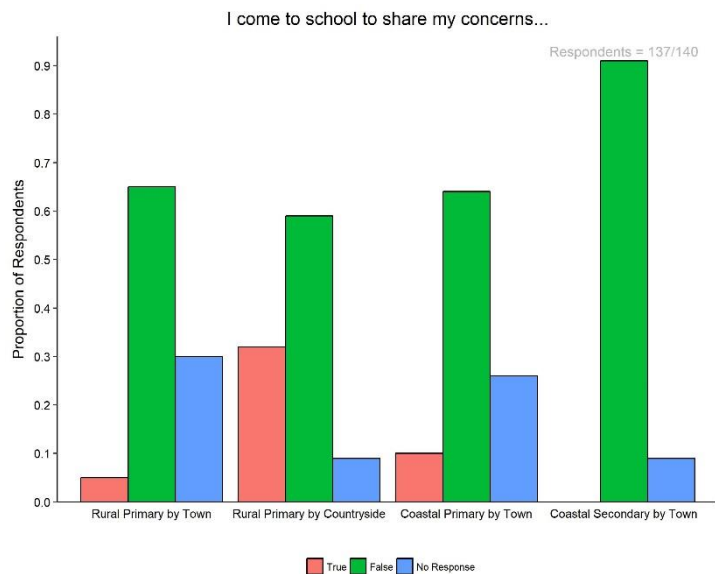
Figure 12: I come to school to share my concerns.

Although a mixed response was received across all school types and locations, the majority indicated that they do not share concerns at school. Equally, the number of no responses across all schools may be attributed to a number of factors affecting children and young people, school staff, capacity and infrastructures.

Perceptions of 'concerns' are subjective, however, psychosocial wellbeing problems of children are increasing across the UK[6] along with the need to respond to the diverse needs of the school population (and its continuance during holidays and for those out of school), including specific areas of need, such as substance misuse or bereavement.

Evidence-based research conducted by Patterson et al (2009) focusing on children and young people accessing counselling services in secondary schools and training and support provided to teachers in their pastoral role across Wales identified that children and young people thought counselling should be discussed in school lessons so they can understand and learn more about what counselling is. Furthermore, prohibitive factors are also identified as to why children and young people at school do not seek counselling services at school that included personal qualities, such as being approachable, friendly, a good listener and politeness.

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[6] Sources: https://www.nspcc.org.uk/what-we-do/news-opinion/childline-counselling-sessions-11-minutes-mental-health-issues/, and http://cypmhc.org.uk/resources/children-and-young-people%E2%80%99s-mental-health-coalition%E2%80%99s-submission-inquiry-role-education
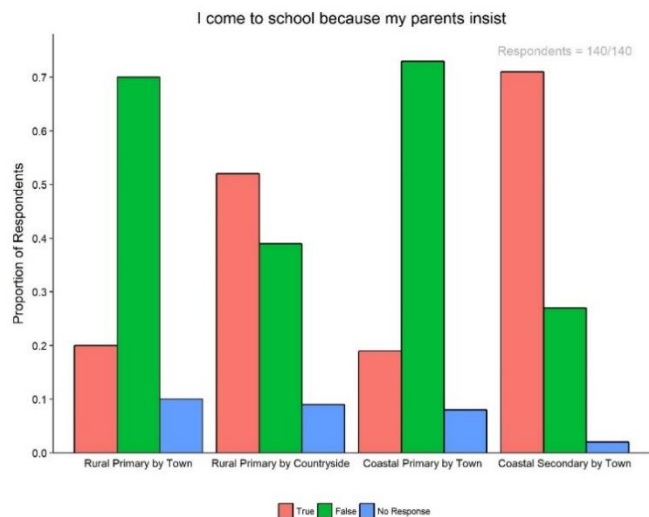
Figure 13: I come to school because my parents insist.

The compulsory element of education has been reaffirmed by the introduction of legislations and powers (The Education (Penalty Notices) (Wales) Regulations 2013, governed by the Rights of Children and Young Persons (Wales) Measure 2011 and others) to prosecute parents for children's non-attendance at school. Furthermore, the synergies of a blaming culture by Education Ministers post-PISA results have had much media attention. Despite this, during 2015/16, the number of authorised absences did not change in secondary schools.[7] In response to the inconsistencies of issuing penalties by schools and local authorities throughout Wales, the Welsh Government have commissioned ICF Consulting Ltd and Arad Research to evaluate Fixed Penalty Notices issued for regular non-attendance at school but has not yet released the report (due September 2017). It is hoped that this report will clearly indicate how many fines have been issued by local authorities and if there are differences in the rural or urban settings and populations. In asking this question, researchers emphasised the need for seriousness required from participants when returning their responses. Whilst the 'true' responses could be indicative of a sense of conscientious self-duty pupils may have towards their education, it may also demonstrate an awareness of the possible consequences to themselves and parents should they not attend school. This could be said to be truer for the secondary pupils than for primary pupils. However, the 'non-responses' are significant in themselves, perhaps responses reflected a harmonious and shared aspiration with parents, peers and teachers, or that they think this to be a redundant question. Compared to responses received in Figure 1 (in particular the never and the non- responses), the 'non-response' rates here have more significance.

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[7] Source: http://gov.wales/docs/statistics/2017/170330-absenteeism-pupil-characteristics-2015-16-en.pdf.

Teacher give me personal targets...

Respondents = 140/140
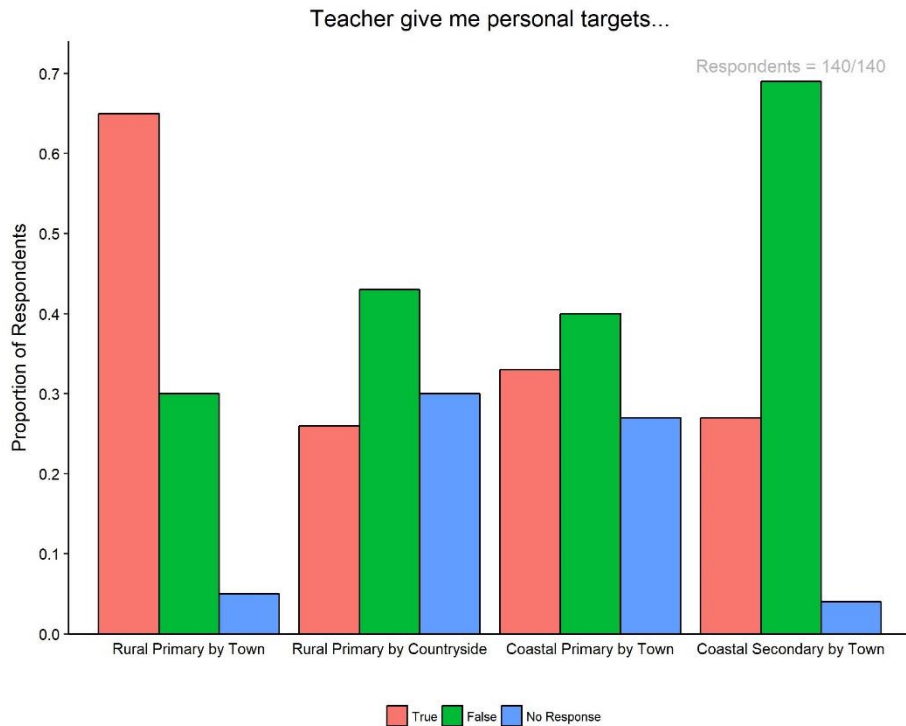
Figure 14: Personal targets by teachers.

Teachers giving personal targets for improvements of skills (or individual learning objectives) in every lesson is considered effective classroom strategy in closing the gap in education achievement for children and young people living in poverty[8]. Researchers assisted the standardisation and children's understanding of this question before responses were received. Personal target was implicitly defined as those given to individuals at the beginning, during or at the end of a lesson, task, coursework or homework across the curriculum (including PSE). The false response rates give cause for concern – especially at KS4. Again, the non-responses may be significant.

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[8] Sharples, J., Slavin, R, Chambers, B. and Sharp, C. (2011) Effective classroom strategies for closing the gap in educational achievement for children and young people living in poverty, including white working-class boys, Centre for Excellence and Outcomes in Children and Young People's Services (C4EO), London.
Source: https://www.york.ac.uk/media/iee/documents/Closing%20the%20Gap.pdf
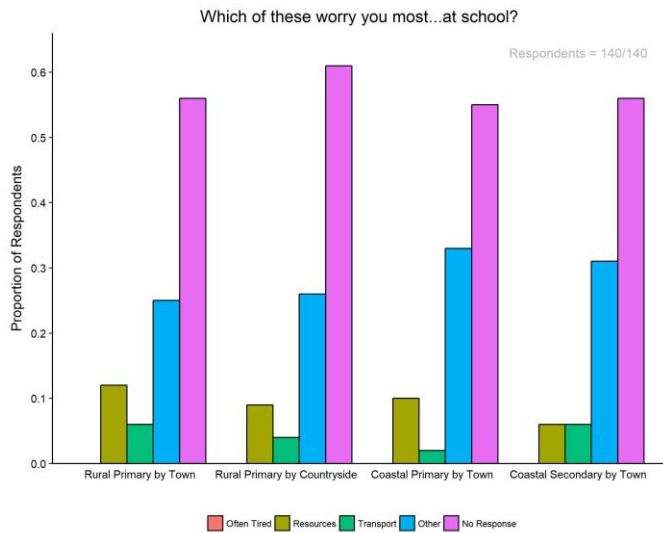
Figure 15: Children's worries at school.

As previously discussed in figure 12, children may not share their worries at school, however, this figure clearly illustrates a high percentage of response rates for non-responses. 'Other' as a response also received a high percentage, but participants were unable/unwilling to share these with others in the classroom.

Tiredness was not reported as a worry at school and transport worries receive a low score rate in contrast with responses received by School Managers as Phases 1 and 5. Children are not overly worried over transportation to and from school at primary schools. Transport and resources are scored equally in terms of concerns at secondary school, with resources scoring higher at primary schools. Resources were described as electronic devices, computers and hand-held devices and books.

I find it difficult to concentrate at school when...

Respondents = 117/140
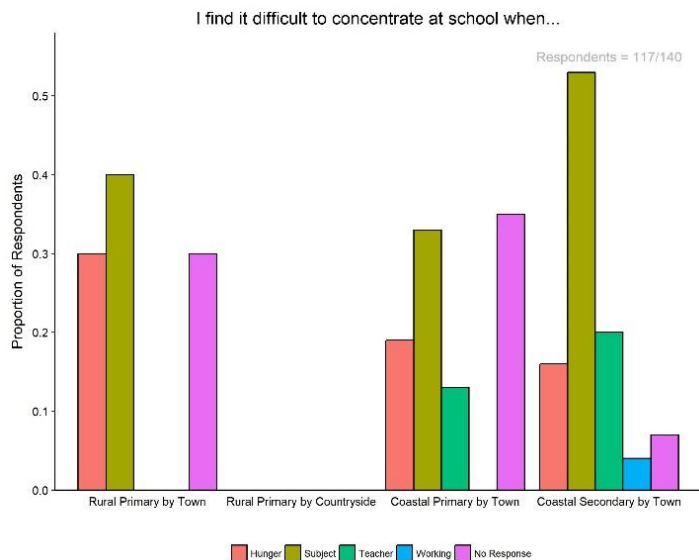
Figure 16: Difficulties concentrating at school.

Curriculum 'subject' scored the highest percentage at both key stages to indicate that children often experienced a lack of concentration at school. At KS4, this was unanticipated since chosen pathways should have reduced this spike, however, this may account for disengaged pupils, low learning aspirations, or conversely, pupils who may have difficulties reaching the acquired level in subjects. There appears to be no correlation to the 'teacher' figures and 'subject' figures, and both are differentiated in given responses. The responses received from participants across all school locations indicated that hunger was a prohibitive factor in concentration levels at primary schools, which lessened at secondary schools. This is explored further in Figure 18.

A significant number of respondents revealed that working (paid) adversely affected their concentration at school at KS4 (this question was only asked for KS4). Although Phase 1 results indicated that child labour was an identified issue, ethical considerations prohibited its exploration in this research with children and young peers that were not of legal working age.

The 'no' response rate may be significant in that it may refer to another option unavailable to the participants. After returning their response, one KS4 participant shouted, *"What if you just can't be [expletive] bothered?"* Results were unavailable for one school due to system error linked to internet connectivity issues.

Which of these worry you most...at home?
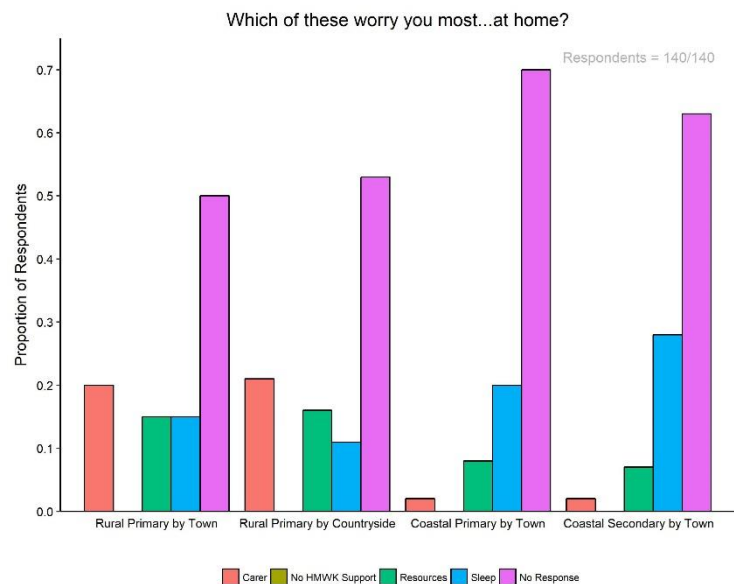
Figure 17: Children's worries at home.

As with figure 16, a high 'no' response rate across all schools/locations was returned. Sleep affected worry rates as the second highest, which contrasts with Figure 15 responses to 'often tired', which indicated that children and young people in this sample had sleeping related worry at home. Using the Millennium Cohort Study, a study conducted by Kelly, Kelly, and Sacker, A (2011) found an association between sleep deprivation, health, well-being and healthy cognitive development in younger children with socio-emotional and psychosocial environments and bedtimes[9]. Pearce, Lewis and Law (2013) examined the role of poverty in family structures and concluded that poverty reduction may help to reduce the known elevated risk of poor health of children living with lone parents[10]. Home worries were increased for KS4 pupils and may correlate with increased family commitments and responsibility or worries identified in figure 12. Resources are rated by all respondents as an issue at home that may be indicative of an increased demand for using digital skills at home, lack of equipment and specifically internet connectivity. This is the strongest indicator of poverty at home gained by this method (Plickers), with children proffering their own unsolicited responses from KS2 and KS4. None indicated that lack of support from parents with homework was an issue – this is in stark contrast with data from Phases 1 and 5, which strongly suggests that parental support (or the lack of) is the main worry for School Managers over lack of academic achievements.

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[9] Kelly, YJ; Kelly, JAJ and Sacker, A (2011) Time for bed? The relationship between bedtimes and socioemotional and cognitive development in 7-year-old children: Findings from the UK Millennium Cohort Study, Journal of Epidemiology and Community Health, London, Vol 65

[10] Pearce, A., Lewis, H. and Law, C. (2013) The role of poverty in explaining health variations in 7-year-old children from different family structures: findings from the UK Millennium Cohort Study Journal of Epidemiology and Community Health, London

Do you often miss meal more than twice a week?

Respondents = 140/140
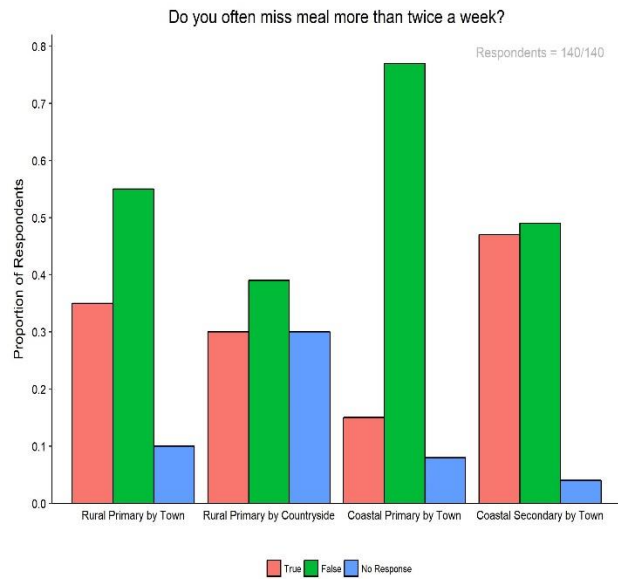
Figure 18: Number of weekly missed meals.

All respondents across all schools and key stages indicated that they often miss two meals a week, with most of the primary schools stating that they did not often go without 2 meals a week either at home or school.

KS2 responses were almost split equal between 45 responses.

As an ethically sensitive question, the questionnaire design did not allow for children and young people to give detailed responses as to the many reasons why this should be, however, we do know that food banks usage is sharply increasing in the UK. The non-response rate for Rural Primary by Countryside primary school is higher than all schools near towns and equates to the number of weekly missed meals.

My education will help me go to college or...a well paid job

Respondents = 136/140
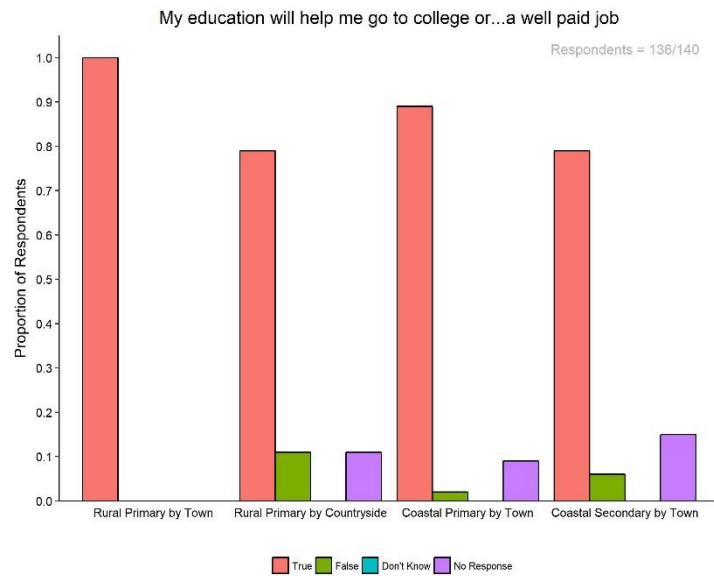
Figure 19: Career aspirations, ambition and perceived value of education.
The value of education, aspirations and ambitions to further education and/or employment prospects

can be seen as a high priority for all respondents at all schools, although less for KS4 pupils. There were

no expressed concerns over tuition fees/ loans or employment opportunities.

Figure 20: Compressed within source data for all KS2 and KS4 phase 3 participants.
Data for **within** sources for coastal secondary school by towns KS4 (45 participants/respondents), coastal secondary school by towns KS2 (52 participants/respondents), rural primary school by towns KS2 (20 participants/respondents) and rural primary school by countryside KS2 (23 participants/respondents).

I come to school to share my concerns...

Respondents = 137/140

I come to school because my parents insist

Respondents = 140/140

Teacher give me personal targets...

Respondents = 140/140

Which of these worry you most...at school?

Respondents = 140/140

I find it difficult to concentrate at school when...

Respondents = 117/140

Legend: Hunger, Subject, Teacher, Working, No Response

Which of these worry you most...at home?

Legend: Carer, No HMWK Support, Resources, Sleep, No Response

Do you often miss meal more than twice a week?

Respondents = 140/140

Legend: True, False, No Response

My education will help me go to college or...a well paid job

Respondents = 136/140

Legend: True, False, Don't Know, No Response

Phase 3 summary

The child and young person's consultation was conducted as part of the triangulation of data, but more importantly to give UNCRC Article 12 its due regard in acknowledging children as inalienable rights-bearers. Article 12 states that a child shall be provided the opportunity to be heard and express views freely in all matters affecting the child, and for the views to be given due weight in accordance with the age and maturity of the child, either directly or through a representative or an appropriate body.

It is at this point that this exploratory research transforms into emancipatory research exploring issues of poverty, attainment and community development (Fleming and Boeck, 2012; Bennett and Roberts, 2004). Qualitative research findings can contribute to power hierarchies, explain them or challenge them, but only through highlighting the vulnerability of the participants, whereas participatory research can highlight resilience (Bennett and Roberts, 2004) and seeks to explain and challenge the status quo from participants' own perspectives. It positions itself as research that has a role in challenging discrimination or reducing vulnerabilities through its process, findings and dissemination most clearly exemplified within anti-poverty research within social care supporting the realisation of children's rights (Thomas, 2012).

Children and young people who participated in this phase of the research were observed to enjoy expressing their views and engaging through digital technology. Senior Management staff at one school in particular expressed a wish for researchers to stay behind after the sessions to facilitate an informal Continuous Professional Development on the usability of Plickers to a number of school staff.

Themes from this phase illustrate that children and young people do not share their general concerns with school staff and may be unlikely to share a broad range of poverty-related concerns.

Attending school for some children and young people is mostly enjoyable, whilst for others, it demonstrates a conscious awareness of the consequences facing their parents of not attending. This presents a dichotomous dilemma for schools aspiring to close the gap of attainment struggling with pupils who, on the one hand, may be struggling to cope with poverty-related problems but seeking assistance from schools to understand and address their concerns, and, on the other, are managing disengaged learners at the risk of detriment to the learning of others. This could account for the pupils being either unaware or not engaging with personal targets.

Low aspirations affected children and young people attending secondary schools more than primary schools, with some expressing that they "just couldn't be bothered" with education. Generally, children and young people 'value' education as levers for successful career trajectories.

Academic parental support was not an identified issue of concern by children and young people, in stark contrast with explanations proffered by School Managers at Phases 1 and 5.

Transport to and from school was not an issue which children and young people perceived as problematic, especially at primary level.

Tiredness was not reported as a worry for children and young people.

Hunger (the inability to acquire or consume an adequate quality or sufficient quantity of food in socially acceptable ways, or the uncertainty of being able to do so) was reported across primary and secondary schools sampled as an issue of concern, indicating that children go without the needed three meals a day every day[11].

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[11] Source: http://www.poverty.ac.uk/pse-research/falling-below-minimum-standards

Phase 4: Stakeholder consultation with local authorities

Local authorities and regional consortia have a joint remit to lead and monitor progress, as well as target funding for disadvantaged children through programme initiatives and support for children in disadvantaged circumstances.

Welsh Government Evaluation of the Welsh Child Poverty Strategy Final Report (2012:37) conclude focus on closing the educational attainment gap and correlation with children experiencing poverty appears to have emerged in part as a response to disappointing Welsh results in the 2009 international PISA assessments.

Acknowledging existing political organisational structures for tackling child poverty (*ibid.* p.92), the research methodology was confident of eliciting responses from dedicated Anti-Poverty Champions (APCs) situated and secured at all Welsh Local Authorities.

Sampling

Twelve Welsh Local Authorities (LAs) were invited to participate in the research who work alongside and on behalf of ERW and GwE School Effectiveness and Improvement Services to develop excellent schools, teaching, learning and better outcomes for all learners across regions.

For ERW, these were Carmarthen, Ceredigion, Neath Port-Talbot, Pembrokeshire, Powys and Swansea, respectively. For GwE, these were Anglesey, Conwy, Denbighshire, Flintshire, Gwynedd and Wrexham.

Procedure

Three researchers randomly selected four Local Authorities to approach with an invitation to participate in a non-recorded telephone interview proffering anonymous response to a short questionnaire (10 questions) on issues relating to anti-poverty, education planning and evaluations within their local authority to inform the research aims and objectives of knowing more about poverty, needs, aspirations and perceptions of children in education in Wales.

No sensitive questions were asked; none other than information/data that could be expected to be requested or was already available in the public domain. Questions were non-obligatory, and participants were reminded that they could refuse to respond to any or all questions, that their

participation was voluntary and confidential, with no identifiable participant data used in reporting of results. Assurances were also given that consent could be withdrawn at any time for any or no reason.

Understanding that Local Authority Officers' common functions are to assist in the formulation, planning and monitoring of policies and procedures, coordinating the implementation of council decisions and circulating reports to those affected, providing support and guidance to the elected workforce, cabinet or local committees; researchers accepted that participation may be deputised to others less knowledgeable, and therefore made the questionnaire available via a Hwb Cymru link. This gave participants time for careful and unhurried responses as they may have needed to source relevant documentation to accurately answer the questions.

All potential participants had the opportunity to either engage in a mutually convenient appointment for telephone interviews or to return their responses via email or directly via Hwb Cymru.

Data collection commenced in June 2017 and ceased September 2017.

Data analysis

Responses, types and return rates:
Of the twelve Local Authorities invited to participate, five returned a response but only four could be considered. One LA had asked a secondary school Head Teacher to respond, but unfortunately, this response could not be considered a 'county-wide representation' and therefore, was discounted. Two returned their responses via Hwb Cymru questionnaire link, and the remaining two LAs proffered a direct response, attaching a word document via email. All received responses were from GwE regional Consortia. No responses were received from LAs within ERW regional Consortia area.

Awareness of current initiatives/programmes/strategies within their Local Authorities designed to reduce the impact of poverty.
Two provided strategic evidence of their council's Corporate Executive Teams overseeing a comprehensive range of specific anti-poverty programmes and council-led services charged with having the greatest impact for reducing poverty or identifying those at risk of experiencing poverty; with one of the two citing their commitment to the Equality Act 2010 by undertaking Equality Impact Assessments evaluations in relation to all decisions made by the LA and the impact on poverty.

One LA listed "Lead Member's Anti-Poverty work" as a scrutiny function of the Corporate Executive Team, yet were unable to disclose the name of the Lead Member to cross-reference researcher's attempts at identifying this person by desktop and telephone research procedures referenced above.

One LA disclosed its intention to appoint a Principal Manager to assist the anti-poverty agenda within their authority, aligned to homelessness prevention and employment initiatives. This possibly suggests displaced investment in annual commissioning plans as the same LA emphasised that the focus/main elements of the support services offered were aimed at increasing public services based on self-autonomous civic duties and responsibility by providing information on money advice, budgeting, developing life skills and signposting access to other related services. There is also evidence of strong emphasis on providing work experience skills and confidence building opportunities via voluntary work experiences. This LA also specified it was the main employer for "lower-grade, blue-collar jobs, suitable for people with low educational attainment", possibly compounding an understanding of a presumed correlation between low educational attainment and poverty. A noteworthy insight is the perceived absence of internal employment progression initiatives/strategies to alleviate employers or potential "lower-grade, blue-collar" local authority personnel that may experience poverty.

The two other LAs departed little strategic information other than known commonplace programmes in general education.

Awareness of current initiatives/programmes/strategies within their Local Authorities designed to reduce the impact of rural poverty.

Two LAs disclosed that they knew not of any intervention/programmes/strategies designed to specifically reduce the impact of poverty on rural poverty. One LA reiterated references to Homelessness Services and volunteering within Countryside Services. The other LAs provided details of how it was accessing Welsh Government European Project Funds that is utilised to reduce the impact of rural poverty, creating job opportunities and engagement activities by awarding applications from community groups. These LAs were aware of other suitable European and national funding available for rural areas, such as the European Agricultural Fund for Rural Development, but did not proffer any substantive evidence of their impact on reducing poverty within their LA.

Evaluation of the most successful initiatives and changes as a result of current initiatives/programmes/strategies within their Local Authorities.

One LA referred to their housing and homelessness intervention and prevention initiatives but were not able to give any data nor evaluations of successes achieved.

One LA substantiated their response with a current authority-wide monitoring plan (2017-22) which detailed the proportion of children in households less than 60% median income and workless households within their authority. This LA also reported favourable outcomes of free school meals eligibility and remarked positively upon improvements being made in closing the gap of attainment. Furthermore, this LA was aware of the role Regional School Improvement Consortia have with school's self-evaluation of outcomes in measuring the impact of learners from disadvantaged backgrounds.

Two other LAs referred to a specific initiative that allows schools to apply for funding to assist vulnerable pupils in danger of disillusion post-16 but were unable to provide evidence of effectiveness to substantiate initiative effectiveness.

Discontinuation of initiatives/programmes/strategies and reasons why.

Both LAs (above) who referred to a specific initiative that allows schools to apply for funding to assist these post-16 vulnerable pupils (in danger of disillusion) disclosed that the initiatives will cease due to its European funding.

One LA notes that Communities First Funding from Welsh Government will cease in 2018 and Flying Start Early Years Parenting programmes (also funded by Welsh Government) for families with children under 4 years of age living in disadvantaged areas of Wales will also be ceasing. This is despite Welsh Government stating in 2017: "We are committed to doubling the number of children and their families benefitting from the Flying Start Programme from 18,000 to 36,000 by the end of this Assembly's term in 2016"[12].

One LA confirms Families First and the funding for Income Maximisation Project has ceased to operate, with the exception of applications remaining open to those affected by impairment and disability

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[12] Source: http://gov.wales/topics/people-and-communities/people/children-and-young-people/parenting-support-guidance/help/flyingstart/?lang=en

Top-slicing of annual education budget from Central Government before distribution to schools.
Two LAs selected the "did not know" option in response to this question, with one LA stating that it would not know and that this would be a question for Welsh Government. This demonstrated an erroneous understanding of how LA funding is received, distributed and allocated. The remaining LA did not give a response.

Centralised service budget
No response was received to this question by two LAs, whilst the other two confirmed that it was top-sliced, further noting "transport, providing lunch for pupils and additional learning needs" as the main areas affected.

A direct communication from LA officials stated that the political agenda of the organisation can drive either investments or disinvestments and redistribution of funds particularly at times of an election to appease populist party/votes that affects education, but that at other times, the LA have given additional funding to education.

Recent media attention has focused on the funding cuts facing Welsh Local Authorities for the next two years (0.5% and 1.5% consecutively). The Welsh Government has allocated a top-up for schools and for social care worth £62m and £42m respectively but is accused of dropping the schools funding pledge made by the First Minister in 2009. This could adversely affect rural schools as Local Authorities allocations are decided upon using a formula that takes into account factors including population changes. The budgets are made up of the grant from the Welsh Government, Council Tax and charges for services such as parking. Welsh Government provide around 80% of unitary authority revenue funding, with education and social care accounting for about 55% of Authorities budgets. [13]

There is disagreement between Welsh Government and Local Authorities over how much Council Tax will rise, with LAs stating that it will have to increase by 5%, and WG maintaining that a rise of 2.5% in Council Tax on average across Wales will be assumed. The average Council Tax in Wales is currently £1,251 per home, making a 5% rise an extra £62.50 a year, but the Welsh Government intends to consult

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[13] Source: http://gov.wales/topics/localgovernment/unitary-authorities/?lang=en

on initial proposals to change Council Taxes in Wales in early 2018, which could include an updated valuation of properties; the last one was done in April 2003.

Awareness of food banks utilised within their local authority area.
A range of responses was received:

One LA selected the "0-10" option as a response to their understanding of the number of food banks operating within their LA. It is known that within this LA, four distribution centres gave out 1952 parcels, feeding 4320 people at the time of writing this report, with over 100 referral agencies registered to give out vouchers. Another LA selected the "10-20" option as a response to their understanding of the number of food banks operating within their LA, despite distribution centres dispensing similar numbers of food parcels and agencies dispensing vouchers.

The remaining two LAs knew not of any food banks operating within their LA.

According to Trussell Trust UK foodbank, more than 80,000 people in Wales had to be given emergency food parcels in 2016, and said: "despite welcome signs of economic recovery, hunger continues to affect significant numbers of men, women and children in the UK today….It's difficult to be sure of the full extent of the problem as Trussell Trust figures don't include people who are helped by other food charities or those who feel too ashamed to seek help." [14]

Direct funding of initiatives and/or programmes involving parents of children 0-19 years of age in the last 5 years.
Two LAs responded to this question with "not certain", nor could they provide direct examples of involving parents but felt that parents were appreciative of the support given to them as they were aware of their own deficiencies having an adverse long-term effect on their children. They also reported witnessing parents being cross if their children were treated differently because they took part in different interventions.

One LA focus was strictly on homelessness prevention and children services signposting and advice services.

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[14] Source: https://www.trusselltrust.org

The other remaining LA was able to demonstrate that they were involving parents of children in initiatives and programmes directly funded by the LA and were consequently able to gather evidence of comments and suggestions from parents and children who have accessed services provided by the LA aimed at reducing poverty. That said, the Authority in question stated that the information is not readily available as the evaluation forms were held by providers but offered feedback from a limited source (Community First services) evaluations by parents, young persons and professional advocacy:

"At one-point, school considered withdrawing her from the course, but she was allowed to stay after she and her parents wrote a letter explaining the positive impact of the course on her mental health.
She has reported an improvement in her self-esteem and confidence and a decrease in her depression following outcomes for a parent with complex needs and issues:
increased ability to address the basic need of her family, and confidence in talking through her thoughts and feelings, which aids stress relief; more knowledge about Child and Adolescent Mental Health Services (CAMHS), her daughter's behaviour resulting in increased confidence when speaking to health professionals; client also confident to attend the Community Advice service when required, and able to deal with issues/stress more positively."

The same source reveals concerns by parents over *"a potential increase in crime, anti-social behaviour, loss of support and inability to engage in other services as they were more town-centre based."*

Other comments.
No other additional comments were received by LAs.

Phase 4 results

Impediments – themes

Accessing details of potential participants on local authority websites varied widely. Some Local Authorities had rationalised their web contents, resulting in limited or prohibited direct contact from members of the public. Some did not display their main switchboard telephone numbers, whilst others (Pembrokeshire) allowed only a general web-based email to be sent that returned an automated email informing the recipient that their enquiry would be directed to the relevant department for attention.

Direct communication from many LA's Communication Managers and Corporate Support Teams disclose that many LAs have adopted a self-service strategy that focuses on online LA services that they state are available 24 hours a day as a means to save costs to LAs; these are seen as more cost-effective than face to face or telephone discussions.

Although no LA could confirm that they were neither mandated nor under pressure placed upon them from Central Government to adopt this strategy of streamlining the content on their public web pages (and intranet) across Wales, many reported that this is a direct result of Central Government budget cuts and the common consequences of less capacity available within services to maintain information contained on external (and internal) web pages. Furthermore, there is some evidence to suggest that at one point or another, most LAs do not comply with Information Commissioners Office guidelines on what should be available (statutory documents, reports, meetings minutes and services etc.). Therefore, LAs have welcomed the adoption of self-service strategies as it also has the potential to protect them from breaches in law compliance and allows them to better regulate their information and be strategically pro-active in assessing information before it is placed on their websites. This also allows LAs to better manage their capacity to update/review and respond to public-facing information. Should members of the public want access to policies and information that in the past have been made available via LA websites, they would be directed to complete a Freedom of Information request. In the case of receiving unsatisfactory or no response, the complaint would have to resort to exhausting the internal complaints procedures within each LA first, before finally resourcing to the Information Commissions Office for an independent assessment as to whether those details should be released. Contrary to their aims, this could suggest that

LAs are becoming less transparent and systems becoming more convoluted. Furthermore, as areas of Wales are widely reported to suffer considerably from connectivity and digitalisation issues (this being an indicator of poverty), with areas of Wales being compared to developing countries in terms of digital deprivation. The digital divide is a problem of inequality that reflects the poverty of certain areas. [15]

None of the twelve Local Authorities websites revealed details of a dedicated Anti-Poverty Champion (nor any variant of).

When Local Authorities were contacted by phone, regardless of whom researchers spoke to (main reception or individuals within LA departments) none recognised the term, nor any post holder with this term associated with a post holder within their corporation.

Some successes in gaining details of possible participants using the Content Management System functionality available on LAs websites were gained by inserting key terms such as "poverty, attainment". This generated a return of internal documents revealing names and email addresses that could lead to direct access, but this was laborious and often yielded an archaic or invalid result as some officers and post holders had left the employment of the corporation.

When the main switchboard numbers of LAs were made available, researchers were put through to a range of departments, and sometimes in concurrent and consecutive sequence when individuals within departments could not suggest a suitable officer/participant. These included: Housing Team, Social Services, Customer Services, Benefits Team, Community Safety, Community First Teams, Equality and Safeguarding Team, Education Departments, School Improvement Officers, Educational Welfare Officers, Members, Governance and Policy, Business Improvement and Modernisation, Strategic Planning Teams and Performance Officers.

Availability of suggested/nominated officers, when sourced, could be problematic as it became apparent that some were seconded, on leave (sick, maternity, annual) or not available to personally respond or deputise/suggest others to respond on behalf of the local authority. Voicemails and emails were left with little or no responses returned. Some were simply unavailable. Guarded responses to researchers'

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[15] Source: Digital Inclusion & Adequate Affordable Broadband for Social Housing Tenants, December 2013.
https://chcymru.org.uk/uploads/events_attachments/CHC_digital_inclusion_access_report.pdf

requests for direct details (name, job title, phone number and email) were sometimes received, or conversely, often declined. Switchboard staff admitted that the new Welsh domain name change to llyw.uk was causing problems in email messages being returned or undelivered.

When contact had been established with officers via phone, some requested to see the questionnaire before committing to a response. There was general reluctance to complete the questionnaire via telephone.

Generally, officers seemed interested in the research but uncertain as to whom could coordinate a response as some LAs felt that a multidisciplinary response should inform an official corporate response. Some were interested in the questionnaire itself, rather than engaging in the research, with one LA directing a researcher to request information through Freedom of Information request by email.

One LA provided email details of a lead member for poverty within its corporation with whom we could contact, but, despite having done so, no responses were received. Better responses to requests for suitable participants were received when researchers established a conversation with switchboard staff (three of which returned a response), explaining the importance of receiving a corporate response to inform the research. In those instances, switchboard staff engaged in discussions and took the decision upon themselves that the request be ascended to the Chief Executive Office and gave direct contact details (email address) for Chief Executive Officers and their Personal Assistants who would cascade the request to best suited officers/departments and ensure a response would be received.

Notwithstanding the sample size and acknowledged limitations, LAs have limited understanding of the effectiveness and successes of interventions and programmes. The responses received are suggestive of a concurrence with the literature review: that perhaps only senior members within LAs have sufficient strategical information about the effectiveness of interventions and programmes affecting poverty with Local Authorities, but that perhaps displaced investment in annual commissioning plans and staffing occurred. Responses also suggest that although LAs are officially registered referral agencies of food banks, they are out of touch with, or are not monitoring closely the heavy use of food banks within their area.

Phase 4 summary

The evidence suggests that Local Authorities are unclear as to who within their corporation have a lead role in tackling poverty. This may be in part due to the directive given to LAs by Welsh Government to spread responsibility to all programme/policy areas within local authorities that consequently leads to a lack of a single point of accountability.

Furthermore, without exemption, local authorities' unfamiliarity with the term Anti-Poverty Champion may further compound Welsh Government (2012:92) findings that organisational structures for tackling poverty often exist on a political level or are aligned with a volunteered position by an enthusiastic senior officer unseen or unknown within corporations.

This may be further evidenced by the reluctance of local authorities to participate in telephone interviews, preferring the option to first view the questionnaire and return via Hwb Cymru after investigating or consulting with other departments. Those successfully approached illustrated a general theme of uncertainty and perhaps a linear compartmentalised approach rather than a lateral application of skills across roles and departments.

Responses received to the questionnaire made no mention of a Tackling Poverty Action Plan nor Child Poverty Strategy/Action Plan that should be evidenced and widely accessed across services in terms of both delivery and policy mitigating the impact of poverty.

In consideration of Welsh Government's Programme for Government agenda and the prominence given to tackling poverty (Child Poverty Strategy, WG 2015), dialogue and synergies should exist between research-based policy and policy implementation led by LAs in their pragmatic application.

Recommendations

Although the response rates to invitations to participate through either telephone interviews or online questionnaires were low and the quality in terms of depth and breadth of information contained within received responses limited, we give a cautionary note with the following recommendations.

Leadership and accountability

Prominence for Anti-Poverty Champion Lead in all forms needs to be strengthened, i.e. political, strategical and pragmatic application; clearly articulating/communicating the vision to members of the public ideally disclosing the name, position and direct contact details as a single point of contact with

whom contact could be instantaneously initiated. This should be a priority for Local Authorities, should devolved fiscal powers to Wales be warranted by the Commission on Devolution in Wales (Silk Commission), giving Wales a greater authority over key policy area for tackling child poverty.[16]

Responsibility to all programme/policy areas within Local Authorities need to have a consistent, systematic and robust single point of accountability over initiatives.

LAs should work together across counties to tackle poverty and invest in systems that closely monitor the effects initiatives have on reducing the observable impact of poverty in pragmatic terms and focus on a grounded approach steering strategic and policy planning.

Coordination and engagement
Local Authorities should be able to better coordinate a response to general and or specific enquiries and fully engage with requests in an open and transparent efficiency.

Switchboard and departmental staff should be familiar or appraised (by periodic formal or informal training) of the corporation's agreed referral system for enquiries relating to poverty, facilitating a cross-action operational integration across departments.

Public interface
Websites should be user-friendly and clearly demonstrate Local Authorities' commitment and duty to tackling poverty on its landing page and consider advertising a dedicated telephone helpline (internal to the council or outsourced to a third-party provider exercising the LA's duty) providing impartial advice.

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[16] HM Treasury and Wales Office document, Nov 2013 - Empowerment and Responsibility: devolving financial powers to Wales p.17

Phase 5: Extended consultation with School Managers

Phase 5 of the REAP research aimed to ensure validity, representativeness and enrichment of baseline qualitative data and findings gathered at Phase 1 with schools represented by ERW and GwE, with considerations given to Phase 3 data analysis with children and young people. Phase 1 thematic analysis was presented to all School Managers via a Hwb Cymru questionnaire (access to this was made available by GwE) to collate, thematically analyse and report data, whilst being consciously aware that the minimum size of a purposive sample needed to reach theoretical saturation is difficult to estimate (van Rijnsoever, 2017).

Sampling

In determining the sample matrix framework (purposive), we estimated (given the time constraints and scope of the research) one-third of all schools (primary and secondary) represented by ERW and GwE would be sufficient to achieve theoretical saturation based on Phase 1 sample analysis. Caution was undertaken to ensure that the 8 schools that had participated in face to face interviews at Phase 1 were not re-entered into this dataset. A definitive sample of 344 schools were contacted, with 123 School Managers completing the questionnaire. However, four primary schools and two secondary schools had responded twice, therefore a synthesis of double entries was conducted with only one response entered and analysed. A final sample of 107 schools in Wales was achieved.

Attempted:

Consortia	Support Category	Location Urban/Rural/ Coastal	Sector Primary/ Secondary
GwE n=172	green	Rural (coastal)	n=43
	yellow	Rural (by towns)	n=43
	orange	Rural (countryside)	n=43
	red	Rural (coastal)	n=43
ERW n=172	green	Rural (by towns)	n=43
	yellow	Rural (countryside)	n=43
	orange	Rural (countryside)	n=43
	red	Rural (countryside)	n=43
			344

Table 5: Attempted Phase 5 sample

Achieved: 107 schools

Consortia	Support Category	Primary Sector	Secondary Sector
GwE n= 30 Primary n= 11 Secondary	green	n= 9	n= 1
	yellow	n= 17	n= 4
	orange	n= 4	n= 5
	red	n= 0	n= 1
ERW n=60 Primary n= 6 Secondary	green	n= 17	n= 3
	yellow	n= 35	n= 1
	orange	n= 8	n= 2
	red	n= 0	n= 0
		90	17

Table 6: Achieved Phase 5 sample

In contrast with Phase 1 of the research, where school location had been purposively sampled in adherence to Welsh Government definition of rural and urban areas as detailed in the conceptual framework of the research, this last Phase (5) was a response to the emergent themes observed in Phase 1, and allowed schools to decide upon their own definition of location; the results of which are illustrated in the diagrammatic representation presented in Figure 21:
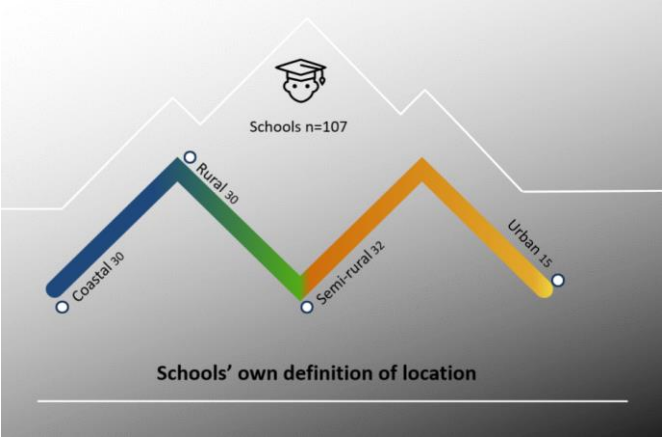
Figure 21: School definitions of their location
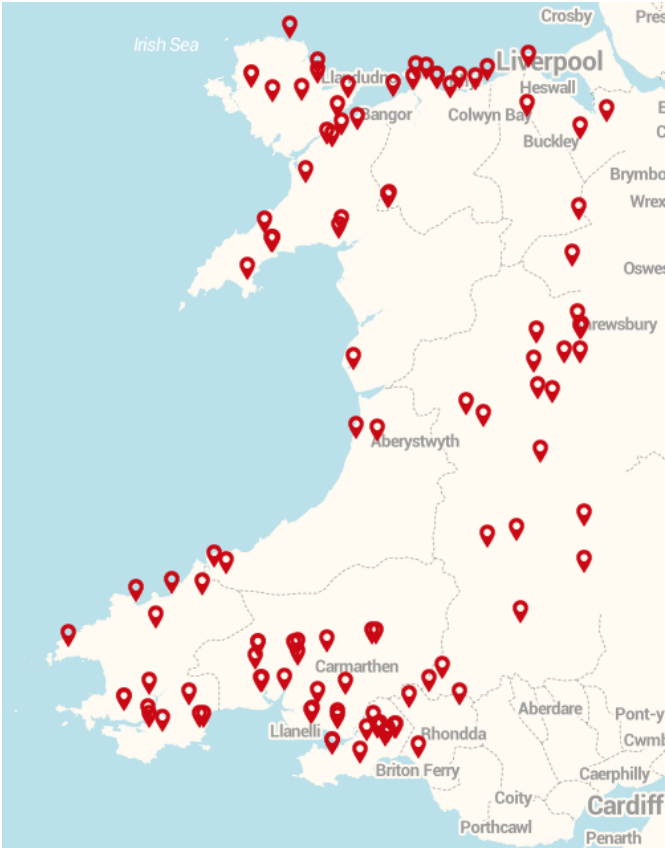
Figure 22: A map of Wales illustrating the total number of schools participated (n=107) Mapsdata
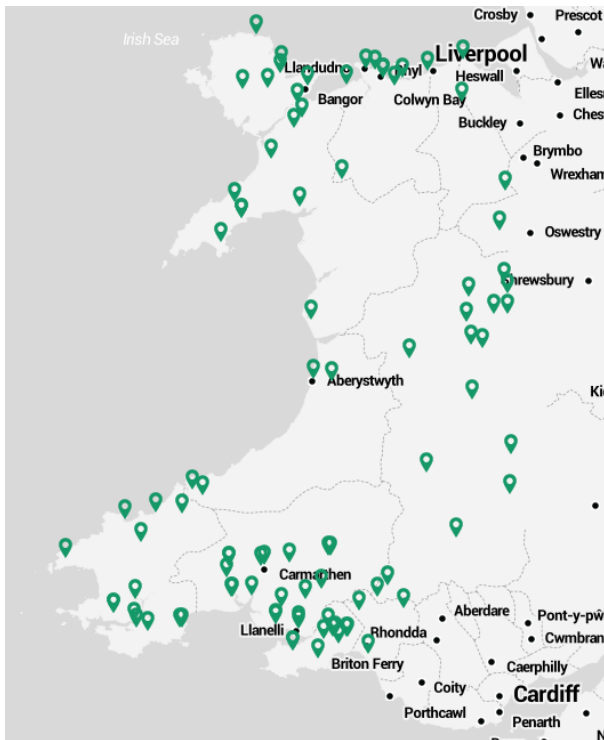
Figure 23: A map of Wales illustrating the total number of primary schools participated (n=90) Mapsdata
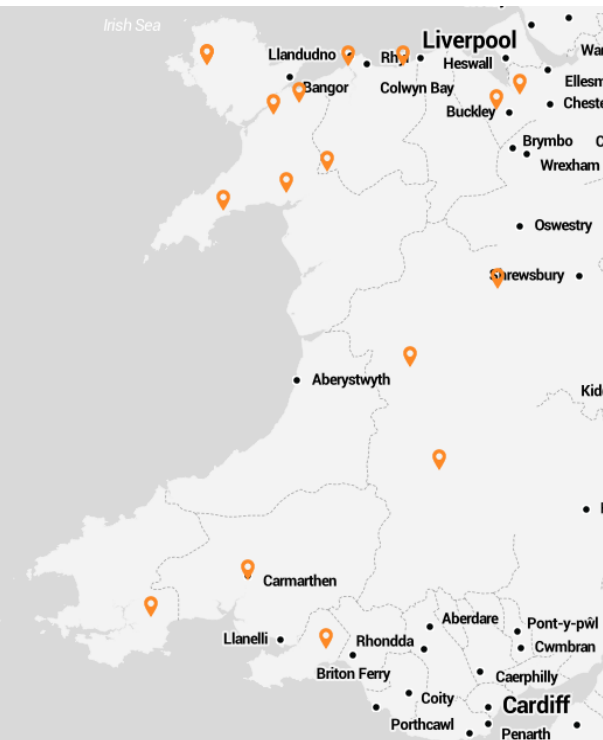
Figure 24: A map of Wales illustrating the total number of secondary schools participated (n=17) Mapsdata

Procedure

A questionnaire was designed and presented via Hwb Cymru to all ERW and GwE School Managers via a direct link attached to an email from Bangor University inviting schools to participate.

GwE shared publicly available details of all the email addresses of Heads of Schools on one Excel datasheet within its 6 Local Authorities, to whom invitations could be emailed directly. ERW circulated an email invitation with a direct link to the Hwb Cymru questionnaire to all schools within its 6 Local Authorities. ERW reported computer capacity problems on behalf of some schools who were having difficulties/connectivity issues accessing the Hwb Cymru questionnaire. An alternative (Word document) form of the questionnaire was provided but consequently, none were returned for analysis.

Thematic analysis from both Phase 1 and 3 was presented to all School Managers via a Hwb Cymru questionnaire to 12 counties of Wales.

In constructing the questions, the researchers paid attention to the dangers of repetitiveness, question length, the order of questions (as it could potentially bias replies) and avoidance of leading questions. All of these have an effect on validity, and the validity could be either reduced by a degree of

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thoughtlessness in the construction of the question or increased by careful attention to question phrasing and ordering, minimizing the likelihood of an answer affected by factors other than those which we are trying to measure (Sapsford, 1999:108).

The sequence, or the routing of the questions, as Sapsford (1999:112) refers to them, have a fundamental function in the questions in a self-completed questionnaire as respondents have to do all the work themselves, as it were, no assistance or progressive prompting techniques can be applied by the researcher to elicit responses.

Perhaps even more important are the clarity and length of the questions, the language used, the layout and even the aesthetic factors such as colour of the form. At first glance of a questionnaire, respondents will often decide whether or not to fill it in on the basis of its ease of understanding and completion. Questionnaires tend to fail because participants do not understand them, cannot complete them, get bored or offended by them, or dislike how they look. *"Questions that appear boring or irrelevant to the respondent may be especially likely to be skipped"* (Bryman, 2004:135).

The open question at the end of the questionnaire, although less amenable to be validated, standardized, coded and analysed can be used to illustrate the themes and supplement the qualitative findings. The reason for including an open-ended question at the end of the questionnaire design is that it gives opportunities to put forward issues not thought of by researchers in the design of the questions and/or to elaborate on previously asked closed questions.

The instructions in each section of a questionnaire not only helps with response rates but also forms part of the standardization, having major advantages for the cost and administration and quality of responses. This was an advantage of Hwb Cymru as a means of distributing, completing and returning an electronic questionnaire. Participants were familiar with the platform and completed it in their own time; they were not pushed or coerced into completing it for the sake of completing it, which overall resulted in less random/rushed responses and more considered or detailed responses. This is evident from the average time taken by participants to complete the questionnaire (19.05 minutes) and the elaborated opinions given in the open-ended question; only 14 out of 107 had nothing further to say.

Data collection commenced in June 2017 and ceased in early October 2017.

Data analysis

Frequencies of responses are presented for the closed-ended questions, and the qualitative responses

were analysed using a thematic framework approach.

Results

The following results are descriptive frequency counts of responses received from 107 School

Managers.

Which of the following is your greatest worry in relation to your school's relationship with learners' poverty and attainment?
Given the option to select any or all of the themes elicited from Phases 1 and 3, the most selected answers by Phase 5 participants (n=107) were:

Provision of data as proof of educational quality n= 80

Ongoing external judgement n=57

Estyn n=49

The least three selected were:

Staff Retention n=10

Senior Management Teams n=4

Dedication of Staff n=2

Which of the following have advantageous long-term effects on academic attainment?
Given the option to select any or all of the themes elicited from Phases 1 and 3, the most selected answers by all Phase 5 participants (n=107) were:

Meeting the needs of individuals n=101

Interventions – generic, targeted, preventative and remedial n=92

Personalised family support- coaching and rapport n=77

Pedagogy n=71

Staff training n=67

Buying staff time n=60

Resources – technology, books, internet n=43

Where does the school compromise most? Select the ones that take the most of your time.
Given the option to select any or all of the themes elicited from Phases 1 and 3, the most selected answers by all Phase 5 participants (n=107) were:

Balancing what the core role of the school should be with policies/regulations and resources n=34

Pupil/teacher ratios and educational support/principles n=29

Family support and resources n=21

Achievement and support n=14

Other n=11

The least three selected were:

Arguments against exclusion and the practices and processes placed on them n=5

Relationship of Poverty to Educational Provision/Individual Learners. Which 5 of the following, in your experience, are the most influential factors on attainment? (Select 5 only)

Given the option to select any 5 of the themes elicited from Phases 1 and 3, the most selected answers by all Phase 5 participants (n=107) were:

Self-esteem, aspirations/cultural capital (ambition and continuing education) n=90

Home intervention (support from parents at home, good/poor school attendance) n=78

Relationship between parents and school n=70

Wellbeing and justice n=51

Acknowledging and addressing hidden poverty n=45

Intergenerational deprivation n=44

Student engagement (curricular and extra-curricular opportunities) n=37

Diversity of people in poverty (families who are managing, just about managing, not managing) n=34

Working with other agencies n=29

Emphasis on achievement as the prime concern about poverty n=25

Who has responsibility for support (e.g. parent blame) n=19

Poor learners n=11

Social media n=11

Social cohesion n=10

Input from subject/leadership experts (independent/local authority) n=8

Housing Quality n=5

Regional Consortia partnership n=2

Other n=2

local authority /European schemes (i.e. Communities First/Positive Futures/Cynnydd) n=1

What is affecting your learner's potential attainment?

Given the option to select any or all of the themes elicited from Phases 1 and 3, the most selected answers by all Phase 5 participants (n=107) were:

Lack of parental time and involvement (7.5)

Other mitigating factors (4.81)

Families unwilling to apply for FSM (4.75)

Learner involvement with statutory services (4.7)

Awareness of social and cultural position (4.11)

Family member health (learner as official/unofficial carer) (3.7)

Child labour (paid or unpaid) (2)

Please tell us if the following have been disabling to the school or its learners (select all that apply).

Given the option to select any or all of the themes elicited from Phases 1 and 3, the most selected answers by all Phase 5 participants (n=107) were:

Other n=40

Anti-benefits/dependency culture (potential under-reporting?) n=39

Transportation n=39

Community pride n=26

Library resources (internet) n=16

Community Leisure Centres n=12

Parents and Teachers Association n=5

Parish Council n=0

Which of the following would you most like to see improved in your school? (select all that apply).
Given the option to select any or all of the themes elicited from Phases 1 and 3, the most selected answers by all Phase 5 participants (n=107) were:

Family support role n=70

No excuse culture (taking personal accountability for actions seriously) n=62

Anti-stigma initiatives to promote learning of learners experiencing poverty/underachieving n=43

Celebrating success (rewards, praise, punishment, certificates, award ceremonies and prizes) n=33

Other n=10

To what extent do you agree with the following statements (10 star max for each).
Given the option to select any or all of the themes elicited from Phases 1 and 3, the most selected answers by 28 of 107 participants in Phase 5 to this question were:

Free School Meals are a good measure of poverty in our school
A mean rank score of 3.5 stars was recorded from the Phase 5 respondents.

The number of children who are entitled to free school meals is increasing in our school
A mean rank score of 4.4 stars was recorded from the Phase 5 respondents.

The number of children eligible, but not making an application for FSM is increasing in our school
A mean rank score of 4.4 stars was recorded from the Phase 5 respondents.

Parents feel ashamed/embarrassed to ask for FSM
A mean rank score of 4.7 stars was recorded from the Phase 5 respondents.

New initiatives are needed to assist parents to apply for FSM
A mean rank score of 5.9 stars was recorded from the Phase 5 respondents.

Poverty does not affect educational attainment in our school
A mean rank score of 4.4 stars was recorded from the Phase 5 respondents.

Our school could not function without PDG
A mean rank score of 6.6 stars was recorded from the Phase 5 respondents.

FSM should be abolished
A mean rank score of 2.2 stars was recorded from the Phase 5 respondents.

Do you have a specific opinion about the factors that affect the achievement of children in your school?
The responses to this question have been synthesised in the following section.

Phase 5 summary of qualitative comments

Personalisation of education by meeting the needs of individual pupil interventions with targeted, preventative and remedial Interventions rated the highest in contrast with views and opinions expressed by children and young people in Phase 3.

Synergies of concurrent themes were expressed between Phases 1 and 5 results on the poverty associated factors having the most influential effect on attainment with School Managers agreeing upon: self-esteem, aspirations/cultural capital (ambition and continuing education), home interventions and support from parents at home adversely affecting the relationship between parents and school, well-being and acknowledging and addressing hidden poverty.

As with Phase 1, School Managers identified transportation and a culture of anti-benefits/dependency culture disabling to pupils' learning, again in stark contrast with children and young people's view at Phases 1 and 3.

In Phase 5, School Managers identified family roles and accountability for learning as the main factors that need strengthening at schools.

School Managers were invited to provide qualitative comments at the end of the mostly closed-ended Hwb questionnaire. Primary and secondary School Managers from 93 of 107 schools from across 12 Local Authorities in Wales provided comments that highlight the fact that tackling poverty is a complex issue including cultural issues, aspirations of parents, the culture of benefits and conversely, parents working long hours in low-paid jobs.

There was widespread agreement that FSM is a measure of poverty, serving to hide or distort poverty, not least for those on low incomes who work. For example:

Free School Meals is one indicator of poverty and should continue to be used as one measure of school pupil poverty. However, I feel that other important indicators should also be considered, specifically the median of district parents pay. E.g. XXXXX (name of local area) constituency has the lowest median salary in Britain (£293 per week, -24% lower than Wales £387), however, free school lunch levels at almost all secondary schools in the area are relatively low, less than 10%, others less than 15%. That is, most parents work and do not receive free lunch for their children, but on an unusually low wage. The Welsh Government or Estyn do not consider this factor at all when comparing the academic progress of schools, so a rural school with a very low parental pay and a low PDG/FSM can be compared to a school as 'objective' with an urban school that is paid by parents extremely high and low PDG/FSM level.

The majority of School Managers were aware of the problems facing those in poverty and how this tends to result in reduced times to engage with children and young people, exacerbating intergenerational deprivation, whilst feeding into the diminishment of community bonds. For example:

As a school with very low FSM and therefore low PDG, we have been severely financially penalised since the grant was introduced. Our pupils are not financially well off but are in the 'just about managing' group where, in a lot of cases, both parents have to work in order to make ends meet and therefore have increasingly less time to spend with their children. We therefore receive much less investment than many other local schools but have to meet significantly higher quartiles, and are therefore doubly penalised for our apparent advantageous socio-economic position. We have an increasing number of parents who are not able to provide the support necessary to help their children as much as they should or wish to do so. Estyn have in the past made comments regarding standards regarding low quartiles based upon one or two ALN children not being able to make the expected levels in a cohort of 60 children …… The crude accountability system operated by Estyn and the arbitrary level at which the FSM is set, with no regard for the parents just above that level of income, has made it much more difficult to address the very real problem of pupil deprivation, whether that be measured financially or by the level of attention from parents.

Similarly, some School Managers expressed concerns about the levels of cultural capital and community wealth, although a few had more individualistic perspectives on parental blame, commenting in particular on the way they perceived the lack of support from parents as a barrier to achievement. However, some headmasters explained how the work of parents placed many restrictions on their involvement, particularly of those working in farming and other families in rural areas. Although some School Managers suggested that there could be much better and more creative initiatives to mitigate some of these difficulties, none spoke of any, with many feeling compromised by government policy and a significant lack of resources. Transport was often mentioned as a barrier to attendance, for example:

The achievement of pupils in our school is hampered by lack of support from home and the fact that the pupils have few worthwhile experiences at weekends or in the holidays. This is affected by poor transport arrangements in a rural area and lack of money.

In summary, most of the quotes presented by the School Managers on the online questionnaire echoed what was found in the Phase 1 qualitative phase, but with hidden deprivation highlighted. With many people in Wales working long hours for low pay, some families who are living in deprived conditions do not qualify for FSM as they are employed, and geographical challenges in areas of low population make interventions to reduce the effects of poverty (such as providing more public transport) economically unviable.

Limitations

Although there are acknowledged limitations to this research, these were considered minimal and non-consequential by the Research Management Board as the study has exceeded the commissioning brief in terms of its objectives.

Phase 1 and 5 of this research captured limited data relating to schools' application of innovative methods working with communities to alleviate the impact of poverty on attainment. Detailed case studies of the exemplary practices of schools and communities, where successful strategies have been implemented to reduce the impact of rural deprivation on attainment, can be sourced at ERW and GwE websites (http://www.erw.wales/schools/, http://www.gwegogledd.cymru/).

However, the research extended beyond its original scope in determining geographical case studies of the factors that may be attributed to poverty and educational attainment as they link to good practice. Phase 1 qualitative data showed that all schools, regardless of their rural, urban or coastal location, had the same kind of solutions in terms of tackling poverty and raising educational attainment; however, Phase 2 of the research, with a large sample size, showed that the attainment of pupils in rural schools were higher than for the pupils in urban schools. Although not a main theme in Phase 1, transport was highlighted in Phase 5 of the research by School Managers as an area of concern that possibly could account for absenteeism, curtailing extra-curricular opportunities after school due to public transport inadequacies. This issue may have been exacerbated by the health and safety concerns for children and young people attending school in both rural and urban settings. Inadequate transport reinforces socio-economic problems (Lewis, 2017) and social participation throughout Wales. Consequently, Phases 1 and 5 results relating to transportation were divergent and inconclusive. A cautionary note is given that the sample size in both phases were affected by the recruiting of participants and therefore cannot be totally representative.

Despite our best efforts, we were unable to directly elicit responses from parents regarding poverty and educational attainment. We were advised to undertake a literature review of the evidence presented by parents engaging with programmes afforded to them by Regional Consortia, Local Authorities, third-party

sector organisations and educational sectors. There is clear evidence in Phase 5 of these attempts but unfortunately, the views of parents are not systematically or routinely collated by the above organisations, with the exception of attitudinal/self-reported questionnaires on the level of service satisfaction.

The lower than expected response rate to the LA Officer questionnaire was seen as a reflection on the low priority poverty has in the strategic planning of LAs.

Conclusions and recommendations

Poverty is an issue which has been targeted by recent Welsh Government policies. Within the area of education, the Pupil Development Grant is seen as the lever to stop the poverty circle. However, the literature suggests that despite efforts to reduce the poverty gap between children from high-income families and children from low-income families, there is still a wide gap between poverty and achievement (Grigg, Egan, McConnon& Swaffield, 2014).

Most of the School Managers interviewed for Phase 1 of the study suggested that eFSM would be a better measure of poverty in rural schools than FSM. Many stated that proud parents from rural areas in Wales were reluctant to make an application for free school meals, even when they were eligible to do so, as this was against their 'anti-benefits' beliefs. Furthermore, School Managers observed that even some single parents would rather struggle on with three jobs than take a hand-out from the Welsh Government. This is unsurprising to the authors, who are acutely aware of the nuances of Welsh culture and understand the nature of the close-knit community in rural Wales. Despite the Data Protection Act (1998), individuals in Wales remain anxious about making a claim for free school meals in case people would get to know about it and judge not just the family with the child in school but also the extended family. It is suggested that anti-stigma initiatives should be rolled out so that schools in rural locations in Wales do not miss out on PDG monies because of cultural factors which are beyond the control of the Senior Management Teams in the rural schools.

It is clear that the school is only one part of the solution when it comes to tackling underachievement and inequality. The schools can teach, track progress and engage with families, but the families also have to hold high expectations, the community needs to share resources and wisdom and other organisations should share good practice such as the belief that 'education begins at home'. It is about partnership working and building communities that will not accept excuses for underachievement, supported by better synergies of anti-poverty strategies across LAs, Schools and NGOs.

Table 7: Table of recommendations

Number	Recommendation	Tri-level analysis category	Suggested responsibility
1	Explore the feasibility of expanding cash-less systems for paying for school meals in every school in Wales.	Macro	Welsh Government
2	Increase and strengthen anti-stigma initiatives to reduce personal pride barriers of claiming for free school meals or school uniform grants.	Macro	local authority
3	Continue to finance and support careers advice for young people.	Macro	Welsh Government
4	Non-governmental organisations should be encouraged to provide skilled mentoring opportunities to young people of school age in order to widen horizons, increase aspirations and provide good quality advice on how to advance their own employability.	Macro	Third sector non-government organisations (NGO) involved in commissioned work with schools in Wales
5	Explore the feasibility and evidence to support initiatives such as 'Education begins at home'.	Macro	Welsh Government
6	Educational and Social Sciences Researchers should be encouraged to investigate the educational achievement of children and young people living in poverty in Wales again in the future so that any changes in trends can be identified and investigated.	Macro	local authority
7	Focused national policy and education curriculum planning in a rapidly changing evidence-based pedagogical, policy and curriculum landscape.	Macro	Welsh Government and Regional School Improvement Consortia Wales
8	Better synergies with WG, LA, schools and NGOs to coordinate accountability and responsibility, commissioning and evaluating the impact of poverty and education.	Macro	Welsh Government, local authorities, schools and NGOs
9	Regional School Improvement Consortia in Wales should continue to provide support for schools in order to raise standards in education and employability.	Meso	Regional School Improvement Consortia in Wales
10	All four Regional School Improvement Consortia in Wales should consider developing a joint commissioning framework to commission evidence-based anti-poverty research that are made available to support decisions at school levels.	Meso	All Wales Regional School Improvement Consortia

11	Inclusion of organisations and institutions such as Wales Observatory on Children and Young People's Human Rights, Children's Commissioner for Wales and Collaborative Institute for Education Research, Evidence Impact, in the research commissioning agenda to impact furtherance and dissemination of research and practice at ground level.	Meso	Local Authorities and Regional Consortia
12	School Managers should be encouraged to provide work experience opportunities for young people in order to make young people aware of the variety of routes to employability, including apprenticeships.	Meso	Schools, Local Authorities and Regional Consortia
13	Universities should promote digital competence of teachers via Hwb Cymru ITET courses.	Meso	Schools, Local Authorities, Regional Consortia and Estyn
14	Parents and guardians who are not managing financially should be encouraged to make an early claim for free school meals so that their child(ren) can benefit from long-term Pupil Development Grant support.	Micro	Parents, guardians and learners
15	Parents and guardians should develop and maintain aspirations for their children, especially at secondary school.	Micro	Parents, guardians and learners
16	Parents and guardians should make use of opportunities for parental education so that they can develop and normalise a learning culture.	Micro	Parents, guardians and learners

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Appendices

Appendix 1 - Phase 1: Interview schedule for School Managers

Research purpose
A review and analysis of the factors and effects of poverty and rural isolation on educational outcomes
POVERTY and Attainment – Policy Awareness & initiatives

	Questions
	Question Area… Local (School) Context **Can you identify your current school policies and initiatives designed for minimising the effect of poverty on children's educational attainment?** Prompts: o Comprehensive o Rhetoric o Effective o Evidence Impact- is this quantitative only?
	Question Area… Local Government (education and associated/relevant departments) Context **What policies and initiatives designed to minimize the effect of poverty on children's educational attainment are currently being offered by Local (Education) Authority?** Prompts: o Consultation based o Evidenced/needs-based commissions o Effective o Multi-agency/disciplinary within L(E)A and LA o Synergy with school vision/policy on min effects of poverty?
	Question Area… Regional (Consortia) Context **What initiatives and support are being offered by your regional Consortia to address the issues related to poverty and underachievement of pupils?** Prompts: o Realistic o Affordable o Offer support in implementing o Didactic o Dialogical o Inclusive and accessible to all pupils
	Question Area… National (Welsh Government) Context **What grants are available from the Welsh Government to assist schools in addressing the issues related to poverty and underachievement of pupils?** Prompts: o Age ranges 0-3, 3-7, 7-11, 11-18 o PDG o eFSM o Problematic o Effective o Critical of inclusive and accessible to all pupils o Criterion o Accessibility o Usability o Proxy plan for poverty
	Question Area… European Context **Which European strategies/programmes/grants are available to assist schools in addressing the issues related to poverty and underachievement of pupils?** Prompts: o PISA o Europe 2020 Strategy o Horizon 2020 o European Structural Funds o Rural Development Programme 2014-2020 o Erasmus+ o Age ranges 0-3, 3-7, 7-11, 11-18 o Others

institutional (school) initiatives & resources

	Questions
	Can you provide anonymized (past or current) instances from within your school when education became an effective tool for: • **defeating poverty and underachievement** • **promoting social mobility** Prompts: o Age ranges 0-3, 3-7, 7-11, 11-18 o Policy a facilitator o Funding a facilitator o Leadership o Inspirational teaching o Strong relationships o Parental engagement o Combination of identified variables o Donaldson report as implemented elsewhere – collaborative partnership – sector leading shared practice
	Can you describe how pupils are made aware of their barriers to learning and how these are consequently addressed (issues related to poverty and underachievement)? Prompts: o Age ranges 0-3, 3-7, 7-11, 11-18 o Strong personal relationships with pupils? o Evidence of building on a deep knowledge of their circumstances o Knowledge of barriers to learning has had a positive impact on their educational attainment? o Parental engagement families of vulnerable learners.
	Can you describe what systems are in place to increase pupil's motivations, aspirations and expectations? Prompts: o Age ranges 0-3, 3-7, 7-11, 11-18 o A range of overarching strategies? o Strong focus on staff in relation to what pupils achieve (effective teaching and learning/strong relationship and partnerships) o Strong element of competition across a number of whole school systems? o Senior Management Team involvement? (Inspirational Leadership) o Built into staff performance at all levels o Evidence of effectiveness and impact? o Parental engagement families of vulnerable learners o How do teachers and TA identify 'eFSM' children? o Supporting attendance of eFSM children at school o digital technology used effectively for eFSM/LAC children? o Exclusions
	What are the main and subsidiary resources available to your school to address poverty and underachievement? Prompts: o Age ranges 0-3, 3-7, 7-11, 11-18 o Challenges of underfunding? o Eligibility of FSM and those who are not eligible o Faith in Pupil Deprivation Grant Scheme? o Grants used as per criteria? o Evidence of effectiveness and impact o Impact of PDG spending monitored and evaluated and referenced in School Improvement Plan o Is PDG spending adequately shared will all stakeholders? o How is the school leading with regard to raising achievement of children from lower income homes? Who's responsibility?
	Beyond the boundaries of income poverty and implied correlation with educational attainment, what other factors do you consider to be of key importance relating to educational attainment? Prompts: o Age ranges 0-3, 3-7, 7-11, 11-18 o Access to technology/digital competence o Transport o Access to a wide range of free or subsidised community services (social capital) o Home surroundings/housing o Disability o Fuel Poverty o Rural Development/Regeneration Programmes o Coastal tourism and seasonal jobs (parents and children) o Agriculture families and those involved in agricultural fares/events o Cuman capital, health, skills, access to timely/free help and advice o Social norms and gender roles o Food Banks o Rural/Urban/Coastal facilities for children & families

advantage and disadvantage of being rural/urban/costal located

Participant to provide (in relation to attainment/underachievement in children):

Perceived advantages	Perceived disadvantages
1	1
2	2
3	3
4	4
5	5

Identifying Problems

Participant to provide a list identifying perceived problems with raising educational attainment of children. Post list- ask participant to rank in order of priority. Minimal Prompts (facilitators and barriers)

Perceived problems	Rate Priority 1-5
1	
2	
3	
4	
5	

Identifying Needs

Participant to provide a list identifying perceived needs with raising educational attainment of children. Post list- ask participant to rank in order of priority. Prompts (facilitators and barriers)

Perceived needs	Rate Priority 1-5
1	
2	
3	
4	
5	

Appendix 2 - Phase 2: Multi-Level Model Fitting Procedure

Data analysis

Model fitting. All analyses were conducted using Microsoft Open R 3.3.2 (Microsoft R Application Network, 2014), a version of R developed for parallel processing and replicable results (R Core Team, 2016). Generalised linear mixed effects models (GLMM) were fit using the glmer function from the lme4 package (Bates, Martin, Bolker & Walker, 2015). An iterative model building approach was taken to construct all models following Manning (2007). Inclusion or exclusion of single predictors in the models was determined by Akaike Information Criterion (AIC) values greater than or equal 6, in conjunction with significant likelihood ratio tests.[17] A difference in AIC of six corresponds to a 95% probability that the lowest scoring model is a better representation of the data (Banfelder, 2009; for more detailed discussion: Arnold, 2010). In both KS2 and KS4 models, we began by entering all 8 predictors into the model and then fit possible pupil level interactions that would need to be controlled for, before adding the cross-level interactions between school and pupil-level predictors. Interactions were entered in a hierarchical fashion, beginning with static predictors at the pupil level (Gender, ALN), through to more changeable/variable predictors (eFSM, attendance), before including school-level predictors (internal school factors: Per pupil budget, support category; external school factors: access to services, rurality). As a final step, we tested for the inclusion of random slopes in the models by adding a slope within schools or LAs in a stepwise fashion. Only continuous predictors, or categorical predictors with greater than 2 levels, were considered as random slopes due to difficulty in partitioning variance for two-level factors.

Our criteria for the inclusion of random slopes was much less conservative, based on a significant likelihood ratio test rather than the stricter AIC cut-off, to facilitate proper modelling of variance within levels. By adopting a conservative approach to including interaction terms and a more lenient basis for capturing random variation, we hoped to minimise overfitting of the model, retaining the simplest explanatory model possible (e.g. Agresti, 2002).

A combination of Tjur's Coefficient of Discrimination (*D*; Tjur, 2009) and Somer's D_{xy} were used to assess the overall discriminatory power of the final model. Tjur's *D* describes a model's ability to discriminate between distributions of successes and failures within a binomial regression context. Tjur's *D* is interpreted on a scale from 0 (no discrimination) to 1 (perfect discrimination). Somer's D_{xy} in this instance can be thought of as the rank correlation between the observed and predicted probabilities (Manning, 2007; see also Newson, 2014), with higher values demonstrating better overall predictive capability.

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[17] Inclusion of predictors with 1+ component will be based upon an AIC of > 6 + (2*additional components)

Final KS2 Model Coefficients
Table B1.
Estimates from Final GLMM Model for KS2 CSI

	Core Subject Indicator (KS2 = Level 4 ENG/WEL, MATH, SCI)			
	OR	logit	95% CI	z
(Intercept)	25.27	3.23	21.63, 29.52	40.71***
Gender (F/M)	0.87	-0.14	0.76, 0.99	-2.04*
ALN Status (N/Y)	0.03	-3.47	0.03, 0.04	-39.25***
FSM [Somepoint - Yes]	1.64	0.49	1.27, 2.12	3.79***
FSM [None - Some & Yes]	2.04	0.71	1.70, 2.44	7.71***
Attendance (log)	2.12	0.75	1.70, 2.64	6.72***
Support Category [Green - Yellow]	0.66	-0.41	0.54, 0.81	-3.98***
Support Category [Yellow - AmberRed]	0.56	-0.58	0.45, 0.70	-4.99***
Rurality (Rural, Urban)	0.67	-0.4	0.55, 0.81	-4.04***
Consortia [ERW, GwE]	0.43	-0.85	0.33, 0.55	-6.57***
SEN x FSM [Some - Yes]	0.79	-0.24	0.53, 1.17	-1.17
SEN x FSM [None - Some & Yes]	0.66	-0.41	0.50, 0.87	-2.94**

Fit Statistics				**Statistic**
Tjur's D				0.33
Somer's Dxy				0.82

Random Effects			**Variance**	**ICC**
T_{00}, Between-school intercept			0.37	0.08
T_{01}, Between-school attendance slope			0.93	0.20
T_{00}, Local authority Intercept			0.02	0.01

Notes: * p<.05   ** p<.01   *** p<.001; Pupils (N): 15,113; Schools (N) = 746, LA (N) = 12

Final KS4 Model Coefficients

Key Stage 4: L2 Flag Plus

Table C1.

Estimates from Final GLMM for KS4 L2 Flag Plus

	KS4 L2 Flag Plus (5 GCSE A*-C incl. Maths, Eng/Wel, Sci)			
	OR	logit	95% CI	z
(Intercept)	2.03	0.71	0.63, 0.79	17.75***
Gender (F/M)	0.73	-0.32	-0.40, -0.23	-7.69***
SEN Status (N/Y)	0.12	-2.09	-2.21, -1.98	-36.04***
FSM [Somepoint - Yes]	1.13	0.12	-0.02, 0.27	1.64
FSM [None - Some & Yes]	2.34	0.85	0.76, 0.94	18.50***
Attendance (log)	302.68	5.71	5.15, 6.28	19.85***
Support Category [Green - Yellow]	0.76	-0.27	-0.47, -0.07	-2.62**
Support Category [Yellow - AmberRed]	0.62	-0.48	-0.66, -0.29	-5.01***
Rurality (Rural, Urban)	0.74	-0.3	-0.46, -0.14	-3.64***
Consortia [ERW, GwE]	0.58	-0.55	-0.72, -0.39	-6.62***
SEN x Attendance	0.05	-2.92	-3.95, -1.88	-5.53***

Fit Statistics				**Statistic**
Tjur's D				0.26
Somer's D_{xy}				0.60

Random Effects			**Variance**	**ICC**
$T_{00, \text{Between-school intercept}}$			0.12	0.47
$T_{01, \text{Between-school attendance slope}}$			3.00	0.01
$T_{00, \text{Local authority intercept}}$			< 0.001	0

Notes: * p<.05   ** p<.01   *** p<.001; Pupils (N) =14,427; Schools (N) = 122, LA (N) = 12

Appendix 3 – Phase 3: Stakeholder consultation with children and young people Plickers questions for children and young people

COLEG BUSNES, Y GYFRAITH, ADDYSG A GWYDDORAU CYMDEITHAS
COLLEGE OF BUSINESS, LAW, EDUCATION & SOCIAL SCIENCES

YR YSGOL ADDYSG
SCHOOL OF EDUCATION

June 2017

Dear Parent/Guardian,
TAG Research
Bangor University in collaboration with your Regional School Improvement Consortia (ERW and GwE) are conducting research on factors affecting educational achievement and would like to gain the views of children attending schools.

Researchers from Bangor University would like to gain the views of children ages ____ attending _____(name of school) on _____ (date). The school has kindly agreed to distribute these letters to you.

Taking part is voluntary, if you <u>do not</u> want your child(ren) to take part in the study please complete and return the opt-out form overleaf. If you are happy for your child to be take part in the research, you need not do anything. You and your child have the right to withdraw from the research at any time. Keep this information for reference.

Taking part in the research means that your child(ren) will give an anonymous response to no more than 10 short questions on what helps them achieve in school. Anonymous responses will be scanned using an 'app' designed for educationalist and researchers for use in the classroom. The exercise will not last longer than 15 minutes. We do not perceive any disadvantage or risks for taking part in this research and while we cannot promise the study will help you, the information we get might help us know more about the needs, aspirations and perceptions of children in education in Wales.

Anonymity, confidentiality and safeguarding will be assured at all times.
Confidentiality will be marinated as far as possible, however if your child(ren) share information suggestive of malpractice or that they are at serious risk of harm, the researcher will be required to share the information with relevant statutory bodies.
What if there is a problem? If you have a concern about this research, you may contact Professor Enlli Thomas who's contact details are noted below.
What will happen to the result of the study? A report will be presented, and the findings published in academic journals, presented in conferences and teaching shared in accordance and as defined by Data Protection Act 1998. Your child(ren) will not be identified in any report or publication.
Anonymous data will be securely stored on the University IT system and will be retained for 5 years from the end of the research project (or longer if this is required by the Bangor University data retention policy) and will then securely disposed. Data may be shared anonymously with other researchers
Who has reviewed the study? Approval for this research has been given by Bangor University Research Ethics Committee 20th June 2017.
Thank you very much for your time.
Gwilym ap Gruffudd (Researcher) 01248 383074, g.s.apgruffudd@bangor.ac.uk

PARENT OPT-OUT FORM

TAG Research
I have read the information about the study and talked about this with my child.

Please tick the box below.

I am not willing for my child to take part in the study.

Name of child: …………………………………

School: ………………………………………….

Class: …………………………………………..

Signature of parent/guardian: ……………………………………………………….

Date: …………………………………………..

PRIFYSGOL BANGOR   **BANGOR UNIVERSITY**   **YR ATHRO/PROFESSOR ENLLI MÔN THOMAS**
                                                                        PENNAETH YR YSGOL ADDYSG
SAFLE'R NORMAL,   NORMAL SITE,   HEAD OF THE SCHOOL OF EDUCATION
BANGOR,   BANGOR,

GWYNEDD, LL57 2PZ   GWYNEDD, LL57 2PZ   FFÔN / TEL: (01248) 383053
                                                           EBOST / EMAIL: enlli.thomas@bangor.ac.uk

FFÔN: (01248) 383082   TEL: (01248) 383082   www.bangor.ac.uk   www.bangor.ac.uk/addysg

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addysg@bangor.ac.uk

RHIF ELUSEN GOFRESTREDIG / REGISTERED CHARITY NO. 1141565

Question	Response options
1 I enjoy coming to school…	A All the time B Most of the time C Sometimes D Never
2 I come to school only to socialise with friends	A True B False
3 I come to school primarily to share my concerns with teachers	A True B False
4 I come to school because my parents insist	A True B False
5 Teachers give me personal targets in every lesson	A True B False

6	Which of these worry you most when studying **at school**?	A Often tired B. Lack of equipment e.g. books/internet C Transport to and from school D I worry about something else more
7	I find it difficult to concentrate at school when …	A I'm hungry B Don't get on with the teacher C No interest in the subject D Working for a wage evenings/weekends (KS4 only)
8	Which of these worry you most when studying **at home**?	A Lack of sleep B. Lack of equipment e.g. books/internet C Frequently care for family members D Lack of support from parents with homework
9	Do you often miss meals more than twice a week?	A Yes B No
10	My education in school is going to help me to go to college or get a well-paid job	A True B False C Don't know

Appendix 4 – Phase 4: Stakeholder consultation with Local Authority Officers: Hwb Cymru Questionnaires

August 2017

Dear Officer,

TAG Research (Rural Education Poverty)

Bangor University in collaboration with your Regional School Improvement Consortia (ERW/GwE) is conducting research on factors affecting educational achievement and poverty and would like to gain the views of Local Authorities.

Why have I been chosen?
We consider you to be the person with the information required to best answer the research questions because you have a strategical overview of programmes, projects, plans and evaluations related to or affecting education and poverty.

Do I have to take part?
Taking part is voluntary. If you do not want to take part in the research, you need not do anything. You have the right to withdraw from the research at any time without giving a reason and any information collected will not be used and instead destroyed. Please keep this information for reference.
If you consent to take part in the research, please complete the online questionnaire *LINK*. If you would prefer to complete the questionnaire over the telephone with one of our research officers, please email us with your name, contact number and a convenient time to call.

What will I be asked to do?
Taking part in the research means that you will give an anonymous response to a short questionnaire on issues relating to anti-poverty, education planning and evaluations within your local authority.

We do not perceive any disadvantages or risks from taking part in this research and while we cannot promise the study will help you, the information we get might help us know more about poverty, the needs, aspirations and perceptions of children in education in Wales.

Will my answers be confidential?
Anonymity, confidentiality and safeguarding will be assured at all times. Telephone questionnaires will not be recorded. However, if you share information suggestive of malpractice or that anyone is at serious risk of harm, the researcher will be required to share the information with relevant statutory bodies.

What if there is a problem?
If you have any concerns about this research you may contact Professor Enlli Thomas, Head of the School of Education, Bangor University at enlli.thomas@bangor.ac.uk

What will happen to the information provided?
The information you provide will be kept on secure password protected Bangor University computers, will be analysed by the research team and a report will be presented. The findings will be published in academic journals and presented at conferences and in teaching sessions in accordance with the Data Protection Act (1998). Neither your name nor that of your institution will be identifiable in any report or publication. Data from the study will be held for five years in accordance with the Bangor University archiving policy and will be destroyed at the end of the data retention period.

Who has approved the study?
Approval for this research has been given by Bangor University Research Ethics Committee.

Thank you very much for your time. Gwilym ap Gruffudd (Principal Researcher) 01248 383074, g.s.apgruffudd@bangor.ac.uk

Introduction
Bangor University has been commissioned to undertake a study on poverty and educational achievement in Wales, which is commissioned by the school improvements consortia ERW and GwE.
• We would be grateful if you could answer 10 questions about poverty and educational achievement. Your responses will be collated and treated with the strictest of confidence with no identifiable details published in the final report.

Telephone consent
You understand that your participation is voluntary and that you are free
to   withdraw at any time without giving any reason.

| Yes | No |

1.   Please list current initiatives/programmes/strategies within your establishment designed to reduce the impact of poverty in your local authority (e.g Education, Housing, Social Care, Community Safety, Leisure & Recreation, Highways, Transport, Libraries, Youth Services, Regeneration & Economic Development etc.)

2.   Please list current initiatives/programmes/ strategies designed to reduce the impact of rural poverty in your county

3.   Which initiatives were the most successful and what changes have been seen because of these? *Reference any sources, if publicly available*.

4.   Which initiatives will be continued/dis-continued and why?

5.   Is your annual education budget from central government top-sliced before it's distributed?

6.   If you answered yes to Q.5 what centralised service is the budget being put towards?

7.   How many food banks are utilised in the local authority?

    (please select)
    0-10
    10-20
    20+
    I don't know

8.   Please list organisations/ initiatives or programmes involving parents of children 0-19 years of age, which the local authority has directly funded in the last 5 years.

9.   If possible please provide 3 positive, 3 neutral and 3 negative comments, remarks or suggestions from parents of children who have accessed services aimed at reducing poverty.

10.   Do you have any other comments?

Thank you very much for your time
If you have any queries regarding this study, or would like further information,
please contact the principal investigator, Gwilym Siôn ap Gruffudd
g.s.apgruffudd@bangor.ac.uk Tel: 01248 38 3074.

Hwb Questions School Managers

Researching the factors and effects of poverty and rural isolation on educational outcomes

Preamble

The School of Education at Bangor University is conducting research commissioned by both ERW and GwE to investigate, review and analyse the effects of poverty and rural isolation on educational outcomes.

The research team have undertaken a pilot study within both consortia schools in urban, rural and costal locations and gained the views of school managers.

We would like to extend our research to gain the views of all schools within both consortia.

Your contribution will be invaluable to the research and should only take 6 minutes of your time to complete this short survey.

Should you have any questions please contact the principal investigator:

Gwilym Siôn ap Gruffudd, g.s.apgruffudd@bangor.ac.uk 01248 383074

Please complete the following:

Unique school number: _____

School Name: _____

Postcode: _____

Support Categorisation: _____

Drawing upon your school's experiences, please answer the following questions with a best fit model that describes your school's relationship with learners' poverty and attainment.

Demographics

Q1. How would you describe your school location?

Coastal

Rural

Semi-rural (short distance from a town or city)

Urban

Performance

Q2. Which of the following is your greatest worry in relation to your school's relationship with learners' poverty and attainment? (select all that apply)

Estyn Inspection

Ongoing external judgement

Provision of data as proof of educational quality

Image management of schools

Dedication of staff

Continuity of teaching

Staffing retention

Staff skills

SMT

Governors

Welsh Government

Other

Please elaborate:

Personalisation

Q3. Which of the following have advantageous long-term effect on academic attainment? (select all that apply)

Meeting unique needs of individuals

Personalised family support (coaching, rapport)

Interventions (generic, targeted, preventative, remedial)
Resources (technology, books, internet)
Buying staff time
Staff training
Pedagogy
Other
Please elaborate:

Compromises
Q4. Where does the school compromise most? Select the ones that take the most of your time
Balancing what the core role of school should be with policies/regulations and resources
Family support and resources
Arguments against exclusion and the practices and processes placed on them
Achievement and support
Pupil teacher ratios and educational/support principles
Other
Please elaborate:

Relationship of Poverty to Educational Provision/Individual learners
Q5. Which 5 of the following, in your experience is the most influential factors on attainment? (select 5 only)
Emphasis on achievement as the prime concern about poverty
Intergenerational deprivation
Who has responsibility for support (e.g. parent blame)
Relationship between parents and school
Wellbeing and justice
Poor learners
Acknowledging and addressing hidden poverty
Self-esteem, aspirations/cultural capital (ambition and continuing education)
Social media
Social cohesion
Diversity of people in poverty (families who are managing, just about managing, not managing)
Housing quality
Student engagement (curricular and extra-curricular opportunities)
Home intervention (support from parents at home, good/poor school attendance)
Regional Consortia partnership
Input from subject/leadership experts (independent/local authority)
Local authority /European schemes (i.e. community first/positive futures/Cynnydd)
Working with other agencies
Other
Please elaborate:

Family Barriers
Q6. What is affecting your learner's potential attainment? Please rank (10 star max for each)

Child labour (paid or unpaid)   ★★★★★★★★★★

Lack of parental time and involvement   ★★★★★★★★★★

Family member health (learner as official/unofficial carer)   ★★★★★★★★★★

Learner involvement with statutory services   ★★★★★★★★★★

Awareness of social and cultural position ★★★★★★★★★★

Families unwilling to apply for FSM ★★★★★★★★★★

Other mitigating factors
Please elaborate:

Community Barriers/Enablers
Q7. Please tell us if the following have been disabling to the school or its learners (select all that apply)

Community pride
Anti-benefits/dependency culture (potential under-reporting?)
Transportation
Parents and Teachers Association
Parish Council
Library resources (internet)
Community Leisure Centres
Other
Please elaborate:

School Practices
Q8. Which of the following would you most like to see improved in your school? (select all that apply)
Anti-stigma initiatives to promote learning of learners experiencing poverty/underachieving
Family support role
No excuse culture (taking personal accountability for actions seriously)
Celebrating success (rewards, praise, punishment, certificates, award ceremonies and prizes)
Other
Please elaborate:

Q9. Pupil Deprivation Grant and Free School Meals
To what extent to you agree with the following statements. **Please rank (10 star max for each)**

Free School Meals are a good measure of poverty in our school ★★★★★★★★★★
The number of children who are entitled to free school meals is ★★★★★★★★★★
increasing in our school

The number of children eligible, but not making an application
 for FSM is increasing in our school ★★★★★★★★★★

Parents feel ashamed/embarrassed to ask for FSM ★★★★★★★★★★

New initiatives are needed to assist parents to apply for FSM ★★★★★★★★★★

Poverty does not affect educational attainment in our school ★★★★★★★★★★

Our school could not function without PDG ★★★★★★★★★★

PDG/FSM should be abolished. ★★★★★★★★★★

Q10. Do you have a specific opinion about the factors that affect the achievement of children in your school?
Please elaborate:

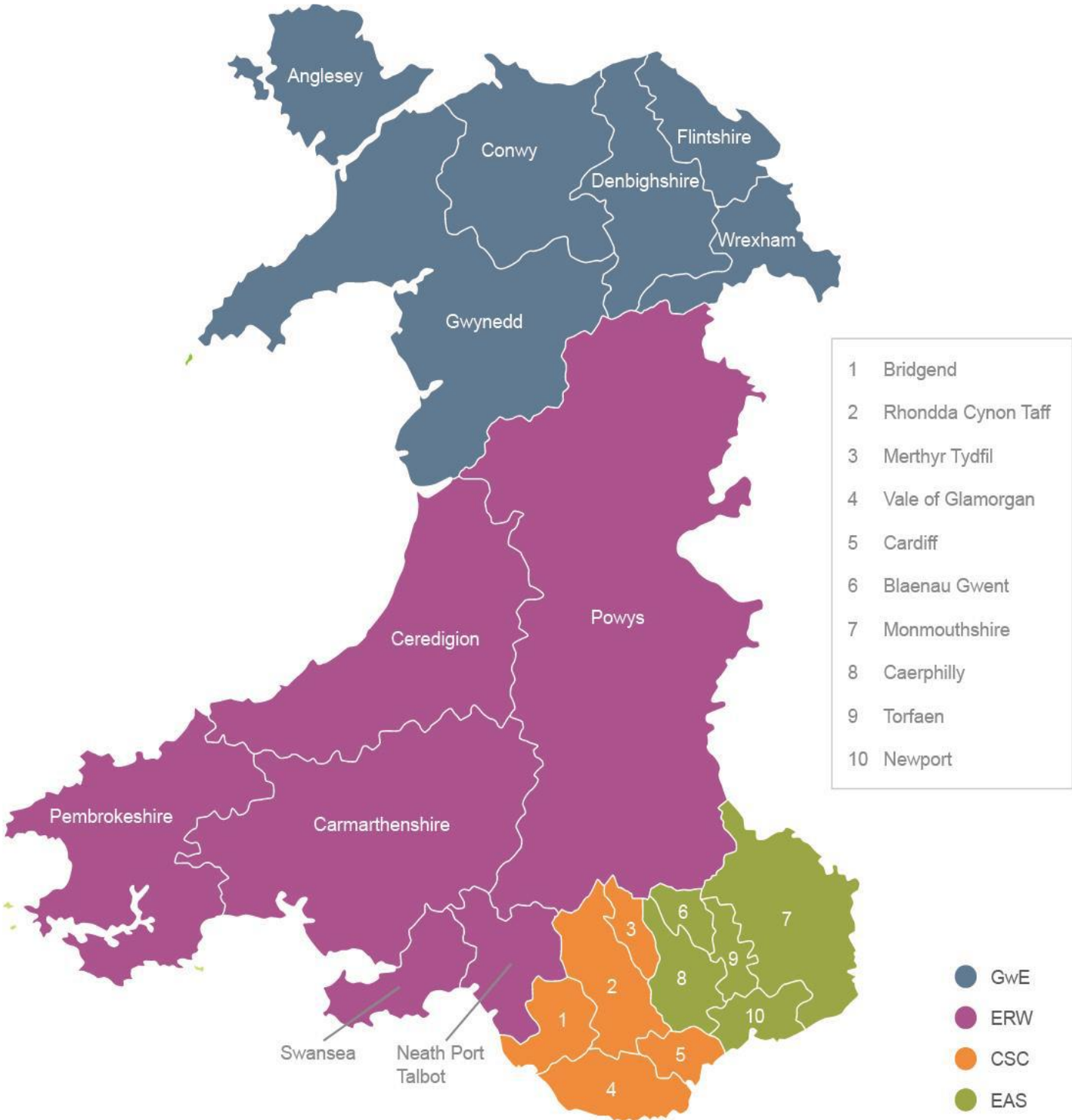Appendix 6 – Regional Consortia map: school improvement services Wales

Figure 25: Regional Consortia map – school improvement services Wales (Source: ERW)