Equity Toolkit

There is a national poverty related attainment gap across Scotland (Sosu & Ellis, 2015). The purpose of this document is to consider the research on why this gap may exist in Stirling and what we can do to effectively tackle it within our schools.

Why and how was it developed?

The original diagram (Figure 1) was developed by a sub group of the Excellence and Equity Strategy Group to consider possible reasons for the poverty related attainment gap in Stirling. This would then be used to identify gaps in supports or barriers to equity that we, as a local authority, could then consider how best to address. The possible hypotheses identified by the sub group were from knowledge of Stirling, its systems and its communities. However it was also agreed that it was important for these hypotheses to be supported by an evidence base. It has been shown that high performing primary schools are more likely to use evidence informed support strategies and consistently engage with their data than lower performing schools (Baars et al, 2018).

Purpose

The Excellence and Equity Strategy Group believed this toolkit would be a useful addition to the suite of resources being developed for schools to support them narrow the poverty related attainment gap.
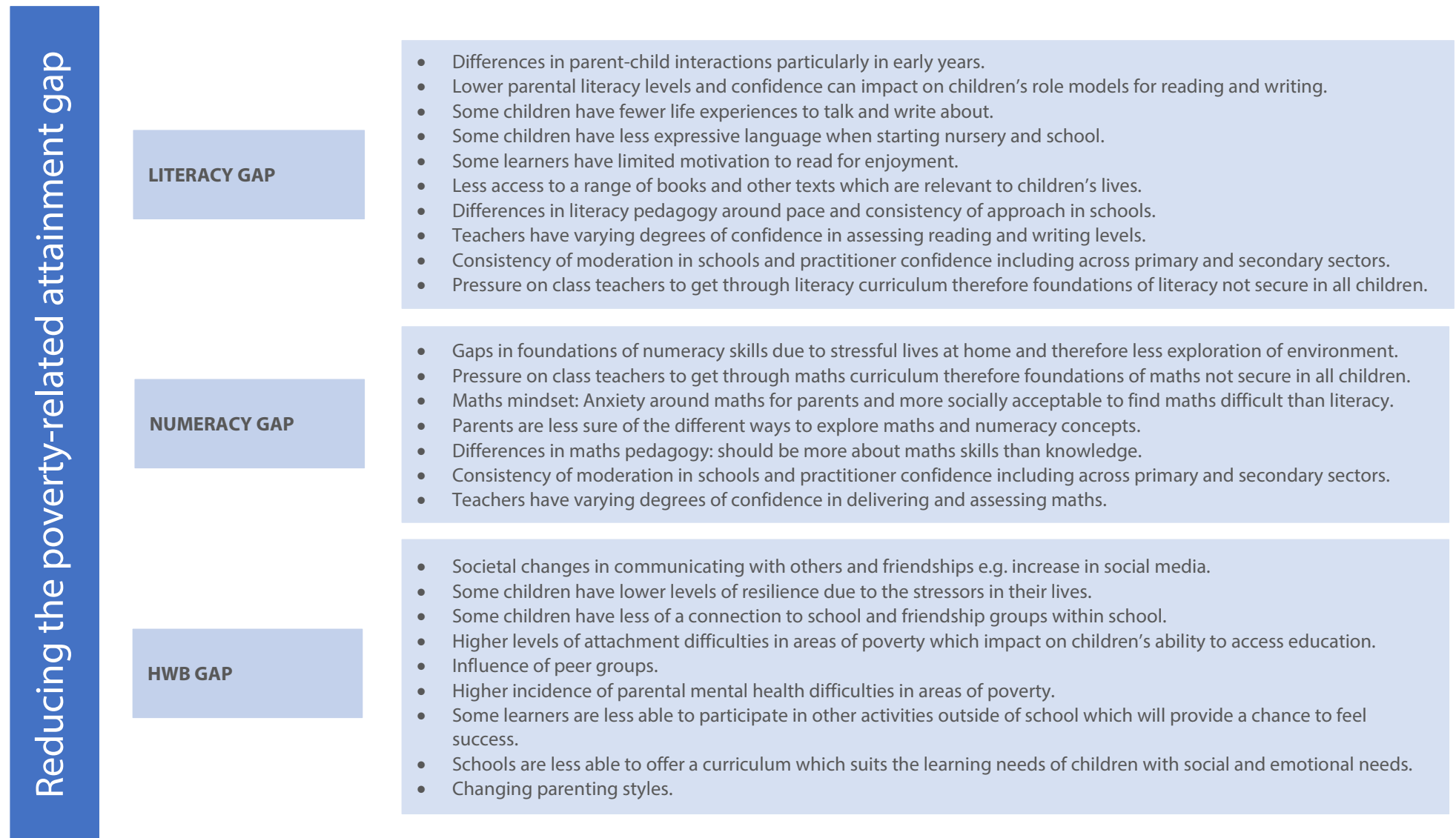
This particular toolkit can be used to consider the research base for your:

- **Contextual analysis:** following analysis of school and community data, we need to consider what is the story around our data? Why do we have the gaps and barriers identified? This toolkit illustrates research evidence around barriers to equity from all different levels of the system. You can use this toolkit to help you and your staff to consider why your gaps exist. All reasons within the toolkit will not necessary apply in your school context. However the conversations around this evidence will ensure a shared understanding amongst staff around possible explanations for the existence of gap/barriers.

- **Interventions:** interventions chosen to help narrow the poverty related attainment gap should be evidence and research informed in order to make best use of funding and resources available and have the best chance of impacting positively on children's attainment and achievements.

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- Sosu, E. & Ellis, S. (2015). Closing the poverty-related attainment gap in Scotland's schools: what works? Policy Briefing. University of Strathyclyde. Last accessed 13 December 2019 at file: ///E:/AA/Research/Poverty/Sosu%20and%20Ellis%what%20works%202015.pdf.

Figure 1: Hypotheses of factors impacting on the equity gap in Stirling (2019-20)

Reducing the poverty-related attainment gap

LITERACY GAP

- Differences in parent-child interactions particularly in early years.
- Lower parental literacy levels and confidence can impact on children's role models for reading and writing.
- Some children have fewer life experiences to talk and write about.
- Some children have less expressive language when starting nursery and school.
- Some learners have limited motivation to read for enjoyment.
- Less access to a range of books and other texts which are relevant to children's lives.
- Differences in literacy pedagogy around pace and consistency of approach in schools.
- Teachers have varying degrees of confidence in assessing reading and writing levels.
- Consistency of moderation in schools and practitioner confidence including across primary and secondary sectors.
- Pressure on class teachers to get through literacy curriculum therefore foundations of literacy not secure in all children.

NUMERACY GAP

- Gaps in foundations of numeracy skills due to stressful lives at home and therefore less exploration of environment.
- Pressure on class teachers to get through maths curriculum therefore foundations of maths not secure in all children.
- Maths mindset: Anxiety around maths for parents and more socially acceptable to find maths difficult than literacy.
- Parents are less sure of the different ways to explore maths and numeracy concepts.
- Differences in maths pedagogy: should be more about maths skills than knowledge.
- Consistency of moderation in schools and practitioner confidence including across primary and secondary sectors.
- Teachers have varying degrees of confidence in delivering and assessing maths.

HWB GAP

- Societal changes in communicating with others and friendships e.g. increase in social media.
- Some children have lower levels of resilience due to the stressors in their lives.
- Some children have less of a connection to school and friendship groups within school.
- Higher levels of attachment difficulties in areas of poverty which impact on children's ability to access education.
- Influence of peer groups.
- Higher incidence of parental mental health difficulties in areas of poverty.
- Some learners are less able to participate in other activities outside of school which will provide a chance to feel success.
- Schools are less able to offer a curriculum which suits the learning needs of children with social and emotional needs.
- Changing parenting styles.

Reducing the poverty-related attainment gap

Areas of high deprivation and impact on attainment

- Less opportunity or wish to move outwith areas of poverty.
- Social norms are important and if the norms are of poverty and limited attainment, there may be less emphasis on attainment from parents and peers as other factors may be more of a priority.
- Not 'cool' to attain within some peer groups.
- Limited parental engagement due to factors such as parents own experiences of education, other stressors in lives and value of education, confidence.
- Social isolation due to being unable to mix with friends outside of school due to cost or differences in social norms.
- Cost of school day and access to extra-curricular activities outwith school which further develop skills.
- Limited access to additional supports which are outwith their community such as allied health professionals, CAMHS.
- Varying degrees of staff understanding of impact of poverty on children.

Hidden poverty and impact on attainment (including young carers, rural poverty, and those working but still in poverty)

- Social isolation due to being unable to mix with friends outside of school due to cost.
- Cost of school day and access to extra-curricular activities outwith school which further develop skills.
- Limited access to additional supports which are outwith their community such as allied health professionals, CAMHS.
- Limited access to internet for homework.
- Stigma associated with poverty and the stress associated of hiding those worries.

School leavers gaps

- High aspirations but limited social connections to make these a reality.
- Not enough opportunities for flexible pathways for young people in education which are relevant to their career choices.
- Peer group influence.
- Less resilience and ability to maintain positive destinations.

Influencing Factors

We have used an approach which considers individual, school and family/community elements to an issue. This is an ecological approach which describes different levels of factors influencing the poverty-related attainment gap in Stirling and nationally. Brofenbrenner (1977) conceptualises this approach advising that a child's development is influenced by their immediate surroundings such as their home, school, neighbourhood and indirectly by more distal influences such as nature of parents' work or cultural values of the family. The primary idea of this approach is that all the environments of a child are interconnected (Jack, 2000) and maximum benefit for the child arises when they all interact positively (Glueck and Reschly, 2014). We appreciate that the levels detailed below are not unconnected elements, rather they are all interrelated and impact on each other. However for simplicity we have illustrated them within particular levels.

Research indicates that although there can be individual risk factors which influence children's outcomes, it is the cumulative risk of multiple factors that most effectively predicts adverse impact on child development outcomes (Evans et al, 2013) therefore interventions should consider tailored approaches which suit their particular context and children.

This is an evolving piece of work and will be added to as research is published and referenced. Any hypotheses which we are still looking for its evidence base will be highlighted in green.

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Protective factors and interventions which impact on all Curricular Areas

Individual	Family and Community	School and Local Authority
• Children who are more confident about their learning ability will learn faster, be more motivated, embrace challenges and generally find learning more enjoyable (Claxton, 2002). • Most influential factor on student learning is the student themselves and what they bring to the classroom in terms of their attributes, levels of knowledge and motivation to learn (Hattie, 2015; 2009). • Children with higher levels of emotional, behavioural, social and school wellbeing, on average, have higher levels of academic achievement and are more engaged in school, both concurrently and in later years (Robinson, 2013).	• Parental involvement has a positive influence on pupil achievement (Sheldon and Epstein, 2005). • Closer partnerships between home and school are needed to close the poverty related attainment gap (Sosu and Ellis, 2014). • The family and parental attachment is an important source of resilience in the face of adversity (Sonuga-Barke, 2019; Conger & Conger, 2002). • Secure attachment is positively related to attainment levels in secondary school (Feldman et al, 1998). Attachment status impacts on school success through pupil's relationships with teachers and the school (Bergin and Bergin, 2009).	• Creating an effective and supportive learning environment can provide students with the tools they need to become better learners (Claxton, 2002). • Strong relationships between staff and children in schools are vital to engage pupils effectively in learning, develop their learning behaviours and increase attainment (Sabor and Pianta, 2012; Frisby and Martin, 2010; Bergin and Bergin, 2009). • Some schools group students so there is a broad range of attainment in mixed-attainment groups (Taylor et al, 2016). It has been found that lower attaining pupils do better in mixed-attainment classes where high attaining pupils are also present (Linchevski and Kutscher, 1998) and that students from lower socio-economic backgrounds are consistently found to be concentrated in lower sets and streams (Bosworth, 2013; Taylor and Sloan, 2016). • High performing primary schools are more likely to consistently engage with their data and use evidence informed support strategies (Baars et al, 2018). • School belonging has been found to be a predictor of a range of broad academic, psychological and physical health benefits in young people. A sense of belonging can not only buffer the effects of student anxiety and depression but boost academic engagement and motivation (Roffey et al, 2019).

Effective Interventions

- **Sharp et al (2015) identified seven building blocks that are common in schools which are more successful in raising disadvantaged pupils' attainment:**
  - Whole school ethos of attainment for all.
  - Addressing behaviour and attendance – strong social and emotional support, including working with families.
  - High quality teaching for all.
  - Meeting individual learning needs.
  - Deploying staff effectively – use best teachers to work with those who need the most support.
  - Data driven and responding to data – using evidence to make decisions about their support strategies.
  - Clear, responsive leadership – set high aspirations and lead by example.

- Effective assessment and evaluation through using data and rigorous monitoring and early interventions (Sosu and Ellis, 2014; Sharp et al, 2015), Sosu and Ellis' (2014) analyses suggest that interventions chosen to close the attainment gap should be based on robust research evidence, but this in itself is not enough to make interventions successful. Successful innovations introduce rigorous monitoring of pupil progress to evaluate whether intended outcomes are being achieved (Sharples *et al.*, 2011; Hutchings *et al.*, 2012).

- **Sosu and Ellis (2015) state that data systems work best when they focus on:**
  - Capturing learners' experiences – using focus group or other methods to select pupils rather than self-selected Pupil Councils.
  - Developing a culture and ethos of understanding and interrogating data and of using it to inform everyday work.
  - Organising attainment data to allow teachers and school managers to analyse it and use it to directly prompt professional conversations that feed teaching/ management decisions.
  - Promote professional judgement and research-informed in analysing data patterns and in the choice/design/monitoring of interventions.
  - High stakes testing is not helpful but tracking, monitoring and targets on a range of measures does help. The interpretation of test data is all.

- **The role of teachers and early years staff, and their pedagogy, is fundamental to narrowing the attainment gap. The pedagogies discussed below have consistently been found to reduce the attainment gap (Sosu and Ellis, 2014):**
  - Structured group work/ cooperative learning – with an emphasis on effective collaborative being explicitly taught and facilitated by teachers.
  - Metacognition and self-regulation – understanding and improving own learning.
  - Formative assessment and feedback.
  - Peer tutoring.
  - **1:1 tutoring:** Whole-school approaches that incorporate elements of effective pedagogy, leadership, and quality professional development to teachers provide the best strategy for closing the attainment gap (Balfanz and Byrnes, 2006; Beecher,2008; Sharples *et al.*, 2011). Successful approaches are informed by research evidence, focus on improving attainment, use effective pedagogies, have a shared strategic plan that encompasses academic, social and emotional learning, and are supported by significant staff development. Additionally, these approaches are data-driven, multi-faceted and consistently monitor impact on attainment, making extensive use of data to inform decisions (Balfanz and Byrnes, 2006; Beecher, 2008).

- Schools need to cultivate a strengths based approach for individuals, rather than 'fixing their deficits' (Zhao, 2016).

Effective Interventions

- Coach/consult method has been found to have positive impact on improving teacher skills and knowledge and in improving their confidence in intervention or pedagogy (Balchin, Randall and Turner, 2006; Morrison and McLafferty, 2018).

- Metacognition: providing explicit instruction in metacognition strategies is important, as although children will develop metacognition as they mature, most will not spontaneously develop all strategies that they will need (Schraw et al, 2006; Schraw, 1998). Schraw emphasised that direct training such as this needs' to include teaching around how to use the strategies as well as when to use them and why they are beneficial. The Education Endowment Foundation (2018) rated metacognition and self-regulated learning as high impact but with a low cost in terms of improving the attainment of disadvantaged learners such as those affected by poverty.

- School-home links, support and training for parents and family and community-based interventions help to narrow the attainment gap for disadvantaged groups (Goodall and Vorhaus, 2011).Parental engagement is shown to be more effective when engagement relates to learning in the home rather than attendance at school activities (Harris and Goodall, 2008). On the whole, effective parental involvement programmes that have an impact on the attainment gap are those that focus on helping parents to use appropriate strategies to support their children's learning at home. Despite parents from disadvantaged households being as likely to help with their children's learning as economically advantaged parents, their efforts are less effective, especially where parental educational attainment is low. Successful parental involvement programmes include providing parents with effective strategies to tutor their children, making a good space for homework, and providing enjoyable books (Senechal and Young, 2008; Scott *et al*., 2010; van Steensel *et al*., 2011; Gorard *et al*., 2012). These approaches are effective when they use qualified professionals to work with parents, are of longer duration and are group-based (Scott *et al*., 2010; van Steensel *et al*., 2011). Parental involvement is strengthened when combined with approaches for raising parental expectations and positive parenting (Scott *et al*., 2010; Gorard *et al*., 2012).

- **For teachers to change their approach, they need to change their identities as people and as learners. Geijse & Meijers (2005) advised that teachers will need:**
    - To receive emotional support as they surface deeply held beliefs.
    - To be able to be creative with new learning.
    - To encounter a 'boundary experience' which provides them with an opportunity to reflect on previously held beliefs. Teachers need the space to allow them to become active participants in their sense making of their new knowledge/concepts and this will allow them to analyse their current beliefs alongside new proposed practices.

- A hallmark of successful interventions that close the attainment gap is that they are backed by evidence-informed, high-quality, context-specific, intensive and long-term professional development for teachers, volunteers or mentors (Tivnan and Hemphill, 2005; Jackson *et al*., 2006; Kennedy, 2010; Hindman *et al*., 2012).

- High performing primary schools employed a dedicated member of staff to provide outreach and support for parents and families rather than assigning this function to existing teaching staff (Baars et al, 2018). This aligns with existing research which suggests an association between schools' engagement with parents and their performance (Sharples et al, 2011).

- Culturally responsive teaching is defined as "using the cultural characteristics, experiences, and perspectives of ethnically diverse students as conduits for teaching them more effectively" (Gay, 2002, p. 106). This pedagogy is based on the assumption that academic knowledge and skills that are situated within the lived experiences and perceptions of students are more personally engaging as the curriculum becomes meaningful and relevant (Gay, 2002).

- There are a range of factors which strongly predict connectedness, with teacher support and social and emotional competencies taking a strong lead in fostering this for young people (Allen et al., 2018).

Effective Interventions

- **Sosu and Ellis (2015) summarise the key features of proven and promising interventions which impact on closing poverty-related attainment gap in Scotland's schools:**

  - **Funding**
    - A clear focus on outcomes, not activities.
    - A clear focus on improving attainment.
    - Data is used to monitor impact of interventions.
    - Collaboration between schools (if it is well selected, data informed and planned).
    - Parental involvement.
    - Interventions guided by robust research.

  - **Parental Involvement**
    - Giving parents the skills they need to help their children learn (eg 'pause, prompt, praise in reading).
    - Making space for homework at home.
    - Enjoyable books and conversations.
    - Sustained, group-based, persistent home-school relationships.
    - Incorporating other risk areas such as behaviour, positive parenting support (with professionals).

  - **After schools/outside school activities for children in poverty must develop their confidence, widen knowledge and experiences and increase their motivation and engagement in schooling, but to deliver equity in attainment, they must also:**
    - Focus directly on how the provision will specifically raise attainment in the target group, not on a general provision of activities or programmes.
    - Incorporate academically-focused knowledge and skills into activities, for example, literacy, numeracy and study skills.
    - Have a clear focus on engaging children in poverty.
    - Be sustained.

  - **Mentoring works when:**
    - Mentors are well trained and the mentoring project tightly targeted.
    - Mentors and pupils are carefully matched.
    - Mentors and pupils build quality relationships.
    - Mentors and pupils set themselves targets and times to meet.
    - There is a clear strategy that covers the lifespan of the mentoring arrangement.

- **There are many other strategies detailed around:** curriculum pedagogy initiatives (peer and 1:1 tutoring outside of lesson times, metacognitive and self-regulation strategies, assessment and feedback, whole school reform approaches, school to school networking and community links within the paper.

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Factors which may influence the literacy gap

Individual	Family and Community	School and Local Authority
• Growing up in Scotland Study showed that at the age of 5 years old, children from higher income families were 13 months ahead in their knowledge of vocabulary and 10 months ahead in their problem solving compared to those from lower income families (Scottish Government, 2017); the gap in expressive vocabulary is around 18 months (Bradshaw, 2011).	• There is no clear-cut, causal link between poverty and parenting. However, poverty can contribute to parental stress, depression and irritability leading to disrupted parenting and to poorer long-term outcomes for children (Utting, 2007).	• Assessment of learning and teaching – pressure on teachers to move children on before they are ready.
• Children's attitudes to reading and confidence in their reading skills are related to their word reading skills (McGowan et al, 2015). Their reading confidence and motivation are also important factors which predict reading comprehension skills, after taking into account cognitive abilities known to be important for comprehension (i.e., language, decoding and working memory) (Medford and McGeowan, 2012).	• Parental income instability and volatility is viewed as impacting on parental distress (stress, depression, anxiety) which impacts on parent-child relationships (conflict) which in turn impacts on a child's cognitive ability (Sousa and Schmidt, 2018).	• In Scotland the quality and quantity of attainment data available for primary and early secondary pupils is highly variable. This limits the ability of professionals to design, monitor and evaluate the curriculum and contributes to a lack of reliable knowledge (Sosu and Ellis, 2014).
• Being motivated to read is particularly important for the reading development of poor readers. As this group are likely to experience greater difficulties and frustration when reading, their motivation plays a greater role. Indeed, motivation is an 'energiser' which influences effort and persistence; this energiser seems to be particularly important for poor readers. (Logan et al, 2011). Indeed evidence suggests that there is a positive relationship between reading frequency, reading enjoyment and attainment (Clark 2011; Clark and Douglas 2011).	• Children develop their language skills more rapidly the more frequently they are spoken to (Hart and RIsley, 1995).	• The role of teachers and early years staff, and their pedagogy, is fundamental to narrowing the attainment gap (Sosu and Ellis, 2014). If the pace and consistency of approach are variable this therefore may impact on outcomes.
	• Number of hours a child is read to reveals significant lower hours for those from lower socio-economic backgrounds (Adams, 1990). In the UK, children from socio-economically disadvantaged groups tend to have fewer books in the home and are less likely to be read to by their parents, although parents do teach them the alphabet (Sosu and Ellis, 2014).	• Different mindsets across primary and secondary around achieving literacy levels.
	• There are significant differences in the number of words a child is exposed to and the quality of interactions that they experience (Parsons and Branagan, 2016).	• In addition, children's reported enjoyment of their method of reading instruction were correlated with their reading attitudes, confidence and attainment (McGeowan et al, 2015).
		• An important factor in developing reading for pleasure is choice; choice and interest are highly related (Schraw et al, 1998; Clark and Phythian-Sence, 2008).

- Effective writing is underpinned by children's expressive language capabilities (Law et al, 2017; Higgins et al, 2017).

- Experiences of children – what are they able to talk and write about impacts on literacy. Sosu and Ellis (2014) advise that substantive content knowledge helps comprehension.

- Scotland's attainment gap in reading for boys was the highest in the developed world, comparatively worse than that in emerging economies like Chile, Turkey and Mexico (Sosu and Ellis, 2014). Jerrim (2013) found that the brightest boys from poor homes in Scotland are almost three years behind those from the richest homes in reading.

- By age 10, pupils living in poverty are significantly less likely than their economically advantaged peers to report reading for enjoyment in their own time (Parsons and Bynner, 2007). Studies suggest that reading engagement begins to fall around Primary 4/5, declining most strongly in struggling readers (Kamil *et al*., 2008).

- Parents and the home environment are essential to the early teaching of reading and fostering a love of reading; children are more likely to continue to be readers in homes where books and reading are valued (Clark and Rumbold, 2006).

- Cultural differences in home background have an important influence in the development of children's understanding of the purpose of writing and their concepts of language units employed in written code. Therefore if there is a poverty of experience of writing, children are less able to recognise literacy activities, less cognisant of their purpose and have poorer technical knowledge of units of speech and writing (Downing et al, 1975).

- Breakdown of traditional family structures, changing patterns of family formation and patterns of parents working lives have clearly shown major changes over the past few decades (National Statistics, 2008; Dench et al, 2002).

- The University College of London recently found that heavy use of social media by children has been linked to lower levels of literacy as found through the Millenium Cohort research (Hymas, 2018).

- Strong relationships were found between parents' self-reported literacy problems and their children's abilities, which were measured using reading and mathematics assessments. Where parents had reading problems, twice as many children were in the bottom quartile range of reading scores, compared with children whose parents did not report problems. 72% of children from families where parents had reading problem were in the lowest income group (Adult Literacy and Basic Skills Unit, 1993).

- Ainscow et al (2010) discusses how some children and young people feel their curriculum is irrelevant to their lives.

Effective Interventions

- Children learn words by being surrounded by them orally, by the quality of the adult-child interaction and by being given opportunities to talk (Moran, 2017).
- Interventions focused on raising poor readers' reading skills should ensure they place sufficient emphasis on developing positive reading attitudes and enhancing reading motivation. (Logan et al, 2011).
- Intrinsic reading motivation (i.e., being motivated from internal factors – e.g., curiosity) and not extrinsic reading motivation (i.e., being motivated by external factors – e.g., grades) was a significant predictor, therefore efforts to enhance intrinsic motivation may be particularly effective on reading attainment (Medford and McGeowan, 2012).
- Ainscow et al (2010) discusses using targeted groups which are designed to offer curriculum content and learning experiences more likely to engage disaffected and disadvantaged learners than the standard curriculum. This is in response to a curriculum which seems irrelevant to some children and young people.
- OECD (2010) report that parents' engagement with their children's reading life has a positive impact on their children's reading performance. Children whose parents reported that they had read a book with their child "every day or almost every day" or "once or twice a week" during the first year of primary school performed higher in PISA 2009 than children whose parents reported that they had done this "never or almost never" or "once or twice a month". Children whose home experiences promote the view that reading is a source of entertainment are likely to become intrinsically motivated to read (Baker, Serpell and Sonnenschein, 1995 – cited in Clark and Rumbold, 2006); and are more likely to continue to be readers in homes where books and reading are valued (Baker and Scher, 2002 – cited in Clark and Rumbold, 2006).
- Research for the UKLA (United Kingdom Literacy Association) examined how teachers could enhance children's reading for pleasure. The activities included: marked improvements in reading environments, read aloud programmes, book talk and book recommendations and the provision of quality time for independent reading. The teachers involved in the project came to appreciate the significance of the wider range of reading which young people experience in their homes and communities. Shared understandings were established between teachers, and families about the changing nature of reading and everyday reading practices which supported children's reading for pleasure. Reading for pleasure was also found to be strongly influenced by relationships: between teachers; between teachers and children; between children and families; between children, teachers, families and communities (Cremin et al, 2009). Research has shown that events focussing on reading for pleasure can also promote or enhance social skills in young people (Clark and Rumbold, 2006).

- In writing, it is important to develop and monitor children's capability to formulate and articulate increasingly sophisticated sentences and express them in writing (Law et al, 2017). Children should have a broad range of opportunities to develop their expressive language. Activities might include storytelling, group reading, or role play (Duggen et, 2014; Higgins et al, 2017).

- Studies comparing attendance at half-day and full-day preschool suggest that full-day preschool results in significantly higher test scores in literacy and numeracy for children from low-income families (Schroeder, 2007). However, the quality of the preschool experience is more important for children from low-income households than children from other households. The effect of full-day preschool may not last if the quality is low (Springate *et al*., 2008). Findings from the longitudinal Effective Pre-School and Primary Education project indicate that high-quality preschool is essential for children from disadvantaged households in closing the attainment gap (Sammons *et al*., 2007). High-quality preschools have positive relationships between staff and children, clear learning objectives, an explicit focus on language, pre-reading, early number concepts and non-verbal reasoning, and well-qualified staff (Sylva *et al*.,2004; Sharples *et al*., 2011). Children from low-income households benefit from opportunities to attend preschools where there is a greater mix of children from differing socioeconomic backgrounds (Ringmose, 2012; Sylva *et al*., 2004).

Effective Interventions
• Studies of 'outlier' schools that consistently narrow the attainment gap associated with economic disadvantage (Taylor *et al.*, 2002; Louden *et al.*, 2005), indicate that the teachers prioritise literacy, make literacy enjoyable, and contextualise tasks to make them purposeful and relevant to pupils' out of school lives.
• Research does indicate that children starting school with low letter and vocabulary knowledge (associated with socioeconomically disadvantaged groups) benefit from small-group, teacher-led, explicit literacy teaching at the start of their school career, with more open-ended literacy activities as the year progresses (Connor *et al.*, 2004; 2007).
• Substantive content knowledge helps comprehension. Some experimental studies have shown that equalising the background knowledge that poor and excellent comprehenders bring to the task is all that is required to raise literacy attainment (Wallach *et al.*, 2009). This would imply that a highly engaging, knowledge-rich curriculum in both primary and secondary schools could improve reading comprehension and close the attainment gap.
• The 2009 PISA survey (OECD, 2010) shows that increasing reading engagement could mitigate 30% of the attainment gap associated with socio-economic disadvantage. Early and positive reading engagement also has long-term effects on young children's language acquisition and literacy development (Raikes *et al.*, 2006). Research emphasises the need to create a coherent and appropriate 'literacy learning mix' to promote engagement rather than sticking to single programmes (Sosu & Ellis, 2014).
• International randomised controlled trials show the effectiveness (and the cost-effectiveness) of holiday reading schemes only when pupils choose their own books (Allington *et al.*, 2010).

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Factors which may influence the numeracy gap

Individual	Family and Community	School and Local Authority
• Maths anxiety has now been recorded in children as young as 5 years old (Ramirez et al, 2015). Research highlights that timed tests in maths lead to anxiety around the subject (Boaler, 2014) and that maths more than any other subject has the power to impact detrimentally on a child's confidence (Boaler, 2009). • There is an idea in maths that you are either good at maths or not (Boaler, 2018; Dweck, 2006) and this can lead to anxiety around maths. • Children's understanding of the language of numeracy impacts on overall attainment as does children's perceptions of numeracy and their performance within it (Lazarides and Ittel, 2012).	• Attachment status impacts on school success through pupil's relationships with teachers and the school (Bergin and Bergin, 2009). It has also been found to be a predictor of maths ability (Bergin and Bergin, 2009; McCormick et al, 2016). Could be to do with not exploring environment as much? • Parental income instability and volatility is viewed as impacting on parental distress (stress, depression, anxiety) which impacts on parent-child relationships (conflict) which in turn impacts on a child's cognitive ability (Sousa and Schmidt, 2018). • Parent's maths anxiety reduced their children's learning of maths across grades 1 and 2 (Scottish equivalent P3-P4) but only if parents helped their children on maths homework. If they did not help, the parents' anxiety did not detract from their child's learning (Maloney et al, 2015). • It is important for connections to be made between home and school maths, but it is often impaired by teachers' lack of knowledge about home maths and by parents' lack of knowledge about school maths such as different calculation methods (Hughes et al, 2007).	• In Scotland the quality and quantity of attainment data available for primary and early secondary pupils is highly variable. This limits the ability of professionals to design, monitor and evaluate the curriculum and contributes to a lack of reliable knowledge (Sosu & Ellis, 2014). • Different mindsets across primary and secondary around achieving numeracy levels. • It is common for children to be moved quickly towards learning abstract numerical concepts and symbols (Boaler, 2015; Wing et al, 2015; Ewan and Mair, 2002). This can lead to gaps in foundations of numeracy skills. Some feel this is due to the pressure on class teachers to get through the curriculum before skills are consolidated. • Pedagogy of maths needs to change to become more multi-dimensional in how we view maths. It needs to move away from being a performance subject and viewed as one which is more about creativity and learning (Boaler, 2009; 2015a). If we continue to put children under pressure to recall facts at speed we will not erase the widespread anxiety and dislike of maths that pervades the US and UK (Silva & White, 2013; National Numeracy, 2014).

Individual	Family and Community	School and Local Authority
	• Admitting to personal difficulties with maths, a lack of interest in maths or worry over maths is socially acceptable and considered the norm. On the other hand, if a student admits that they like maths and are good at it that student will often be labelled a 'nerd'. This contradiction reflects a culture that facilitates the development of maths anxiety in students (Buckley, 2013).	• From the 13 million students who took PISA tests worldwide, the lowest achieving students were those who used a memorisation strategy and the highest achievers were those who thought of math as a set of connected big ideas (Boaler, 2015). • The students who memorized more easily were not higher achieving, they did not have what the researchers described as more "math ability", nor did they have higher IQ scores (Supekar et al, 2013). • Ability setting/grouping has been repeated demonstrated to be associated with inequitable outcomes in both achievement and self-confidence.

Effective Interventions

- There is a need to establish firm number concept through concrete and pictorial materials in order to help crystallise children's thinking in numeracy more effectively (Wing et al, 2015; Ewan and Mair, 2002)

- Provide parents with numeracy learning materials to promote use of maths and numeracy in the home learning environment as a way of strengthening the pedagogy and learning experiences provided in class (Merttens, 2005).

- A multi-sensory approach is effective in promoting numeracy pedagogy (Askew et al, 1997; Fuson, 1992; Williams Review, 2008).

- Technology and maths leaders are urging schools to stop emphasising calculating and focus instead on problem solving, modelling, thinking and reasoning as these are the mathematical abilities that students need in the workplace and their high tech lives (Boaler, 2015b).

- Maths teachers need to stop frequent, timed testing; replace grades with diagnostic feedback (Black et al. 2002; Boaler & Foster 2014); and deemphasize speed, so that the students who think slowly and deeply are not led to believe they are not capable (Boaler, 2014). Perhaps most significantly and most radically, schools should also remove fixed student groupings that transmit fixed mindset messages and replace them with flexible groupings that recognize that students have different strengths at different times (Boaler 2009; Boaler and Foster 2014).

- Research has recently shown that when students make a mistake in maths, their brain grows, synapses fire, and connections are made; when they do the work correctly, there is no brain growth (Moser et al. 2011). This finding suggests that we want students to make mistakes in maths class and that students should not view mistakes as learning failures but as learning achievements (Boaler 2013a).

- In recent years, researchers studying the brain have found that the students who are most successful with number problems are those who are using different brain pathways – one that is numerical and symbolic and the other that involves more intuitive and spatial reasoning (Park & Brannon, 2013). Additionally they have studied students learning maths facts in two ways – through strategies or memorization. They found that the two approaches (strategies or memorization) involve two distinct pathways in the brain and that both pathways are perfectly good for life long use. Importantly the study also found that those who learned through strategies achieved 'superior performance' over those who memorized, they solved problems at the same speed, and showed better transfer to new problems. The researchers concluded that automaticity should be reached through understanding of numerical relations, achieved through thinking about number strategies (Delazer et al, 2005).

- Research tells us that the best maths classrooms are those in which students learn number facts and number sense through engaging activities that focus on maths understanding rather than rote memorization (Boaler, 2015a).

- Hughes et al (2007) state that all those concerned with children's maths learning in school need to be aware of and take account of the maths which children are engaged in outside of school, and to look for ways of making meaningful links between in-school and out-of-school maths. The nature of home mathematics falls into three themes: play and games, authentic household activities and school-like activities. By exchanging knowledge between home and school, children may learn to appreciate that in maths there are many ways to accomplish the same purpose.

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Factors which may influence the HWB gap

Individual	Family and Community	School and Local Authority
• The number of children aged 4-14 years old in the lowest income households were four times as likely to have poorer mental wellbeing as those in the highest income households (13% compared to 3%)(Scottish Health Survey, 2013-16). • Research demonstrates that children who have experienced relational and developmental trauma have a poorer performance on tests of emotional understanding and theory of mind (Pears and Fisher, 2005). This impacts on ability to empathise with others. • A positive sense of belonging is associated with increased student motivation and engagement, attendance, school completion and academic achievement (Moallem, 2013; Prince and Hadwin, 2013). Children from lower socio-economic backgrounds have reported a poorer sense of belonging at school and greater exposure to negative incidents such as bullying or sexual harassment. This might explain the strong association between children living in poverty and their demonstrating more aggressive, less co-operative behaviour at school (Sheehy-Skerrington & Rea, 2017). • Aspirations are seen as crucial to closing the poverty related attainment gap with the missing element being how to make aspirations real and attainable for young people and their families (Treanor, 2017).	• Peer relationships are widely regarded as influencing young people's psychological wellbeing in both positive and negative ways (Balluerka et al, 2016; Gray et al, 2018). Poverty, especially persistent poverty is associated with more problematic interaction with peers on several measures. However children with experience of poverty were just as likely to be happy with their friends, and typically spend more time with them outside school (Gibb et al, 2016). Parental warmth, lack of conflict, and control and monitoring appear to play an important role in developing children's social skills (Joseph Rowntree Foundation, 2007). Poverty is associated with aspects of parent-child relationships. Those from less-well-off families reported slightly lower levels of communication and closeness and higher levels of conflict. However, children from low-income homes were just as likely as their peers to be happy with their families (Gibb et al, 2016). • The family is an important source of resilience in the face of adversity (Sonuga-Barke, 2019). Therefore the family stress model developed by Sousa and Schmidt (2018) illustrates well how poverty can impact on this. Parental income instability and volatility is viewed as impacting on parental distress (stress, depression, anxiety) which impacts on parent-child relationships (conflict) which in turn impacts on a child's cognitive ability (Sousa and Schmidt, 2018).	• Does school offer a safe environment to learn for those who have experienced trauma and or have difficulty with relationships? • Ability to participate in different activities and different ways of achieving success. • Teacher wellbeing makes a difference to their ability to respond effectively to the challenges they face (Roffey, 2012) and this can impact on student outcomes and vice versa (Briner and Dewberry, 2007). Teacher wellbeing is critical for whole school wellbeing, specifically a stable environment for students (Roffey, 2012). According to Holmes (2005) teachers are involved in about 1000 interpersonal contacts each day. It is the quality of these contacts that either foster a sense of wellbeing or sustain a toxic working environment. • Within national statistics and research, children who have experienced relational and developmental trauma have been found to have increased absenteeism from school, difficulties with school adjustment, and lower education achievement (Treisman, 2017).

Individual	Family and Community	School and Local Authority
• School refusal: research among the general population outlines a variety of underlying reasons for this including those related to poverty, adverse childhood experiences and disability (Attendance Works, 2015: Stempel et al, 2017). • People lower in socio-economic status have less effective coping styles in response to stressful situations. This has negative consequences for physical health and quality of life (Sheehy-Skerrington and Rea, 2017) • When resources (e.g. time, money, food) are scarce, this 'scarcity hypothesis' states that people's attention focus narrows, concentrating on the immediate task at hand (replenishing the limited resource) at the expense of peripheral tasks or long-term planning (Fell & Hewstone, 2015).	• Investment model of poverty identifies the direct impact of low income on a family's ability to buy goods and services that contribute to health child development and to fully meet the costs of participation in the school day (Stewart and Cooper, 2017). • Aspirations are seen as crucial to closing the poverty related attainment gap with the missing element being how to make aspirations real and attainable for young people and their families (Treanor, 2017). • Family stress model highlights the emotional impact that experience of poverty can have on parent or carer's mental health and wellbeing, which can increase stress and lead to poorer mental health (Cooper and Stewart, 2017). • Children who live in poverty are more likely to experience bereavement and often experience multiple bereavements in childhood. Bereavement is a route into child poverty and bereavement in childhood increase the chance of poverty in adulthood (Child Bereavement Network, 2014).	

Effective Interventions

- Placing a significant focus on supporting children's health and wellbeing will aid progress towards reducing the poverty related attainment gap (Sosu and Ellis, 2014).

- Positive pupil wellbeing is best advanced by promoting a positive ethos with inclusive values at a whole-school level (Black, Chamberlain and Murray, 2012). Robinson (2013) also emphasises the important role of school ethos. It is not only what is taught but how it is taught and the context in which it is taught that is important and wider school ethos should be taken into consideration when implementing any health and wellbeing programme.

- Nurture groups are largely regarded as having a positive impact upon pupils' emotional health and wellbeing and subsequently enhancing their readiness to learn (Doyle, 2003; Boorn et al, 2010).

- Whole-school nurturing approaches helps all staff to understand attachment theory, its implications for the behaviour of children and young people and the role they can play in providing trusting relationships (Boorn et al, 2010. In turn this can help to support children and young people to internalise some control over their environment and behaviour (Bennethan and Boxall, 2000).

- Learning to face challenges and to process and regulate associated emotions, helps protect against later stressors (Lyons et al, 2009). It is recognised that exposure to manageable difficulties builds resilience (Music, 2011).

- Restorative Approaches (RA): research indicates that RA improves relationships within schools (Kane et al, 2007; Macready, 2009), it improves pupils' affiliation to school (Pavelka, 2013), resilience (McCluskey et al, 2008), problem solving skills (Macready, 2009) and their emotional literacy and internal regulation (Hopkins, 2002). It is also shown to enhance time in class and reduce exclusions (McCluskey et al, 2008; Thorsborne & Blood, 2013) and to positively impact on children and young people's mental health (Wachtel, 1999).

- Early intervention, such as educating parents on child development, has been shown to be an effective way to ensure healthy childhood development by promoting both social skills and emotional wellbeing (Newman, 2017).

- WOWW (Working on What Works): research has demonstrated that WOWW has led to improved cooperation, respect and relationships between peers (Brown, Powell and Clark, 2012) and that the approach is empowering and enjoyable for the children involved (Lloyd, Bruce & Macintosh, 2012). It works with teachers and children to set goals for change and focuses on solutions rather than problems. McKay, Dempster and Perry (2017) suggest that the patterns of lower academic attainment linked to areas of lower socio-economic status can be overcome if individuals attend school more frequently and have a higher level of belief in their own academic ability.

- Whilst health and wellbeing is an important goal in its own right, it can also lead to gains in attainment. It would appear from the research that physical activity and social and emotional learning have the biggest positive impacts on children's attainment (Robinson, 2013).

- Social emotional learning interventions were found to have most effect on academic performance when delivered by school personnel and when well designed and well implemented and contained the following features: a sequenced step by step approach, active learning, focussed sufficient time on skills development and had explicit goals (Robinson, 2013).

- Physical activity interventions are likely to have biggest effect on children's achievement and cognitive ability when: the focus on aerobic exercise, are delivered to younger children, in small, mixed gender groups, 3 x per week (Robinson, 2013).

Effective Interventions

- Resilience:
  - Schools can play a central role in promoting resilience in relation to both poverty and family difficulties. This can relate to factors such as academic stimulus, support by teachers, learning opportunities and access to friends and peers.
  - Community factors can also promote resilience. Children are likely to find it easier to access support outside the home when they live in cohesive neighbourhoods with formal facilities that encourage participation and achievement (Utting, 2007).

- Four key themes have been identified as important in supporting children's sense of belonging in school: relationships, school environment, teaching and learning and extra-curricular activities (Midgen et al, 2019). This includes friendships, relationships with school staff, inclusiveness of school trips and extra-curricular activities, community and families being part of school life, acceptance, safety, group work, necessary equipment and tailored support.
- Within a school context, peer affiliations contribute to the overall school climate (Traylor et al, 2016). Indeed Gowing (2019) found that young people were unequivocal in naming peer relationships as the most valued aspect of their school experience. This view of peer relationships as a resource that builds connectedness to school invites all school staff to provide multiple planned and spontaneous relational opportunities among peers, both within and outside the classroom.
- Holmes' (2005) summary of a positive working environment for teachers includes the following: high expectations to create strong communal identity; respectful and dignified treatment as professionals; participating by teachers in decisions affecting their work; regular opportunities for interactions and sharing with colleagues; recognition and rewards for effort and achievement.
- For teachers and school staff working with children who have experienced trauma, Salus (2004) highlights the importance of supervision and the need for providing them with space to process thoughts and feelings about what they have seen or heard from the people with whom they work and their own emotional response to it.
- Research notes that current models of clinical treatment alone cannot address the needs of trauma-exposed children. Teachers and other mentors are essential to help traumatised children, through intense and regular positive social interactions, to re-establish normal functioning of body and brain stress-response systems (Gaskill and Perry, 2012). Furthermore, trauma research notes that early interventions are much more effective for helping traumatised children than are reactive services (Perry, 2009), and policy can aim to support teachers and schools to address the needs of traumatised children in classrooms.
- Teacher mentors particularly have substantial impact on children from disadvantaged backgrounds. Effective approaches are characterised by provision of training and ongoing support for mentors, high-quality mentoring relationships, specified regular face-to-face contact, target-setting, longer mentoring periods, parental involvement and sufficient funding (Cummings *et al*., 2012; Higgins *et al*., 2013).

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Factors which may influence attainment in areas of high poverty

Individual	Family and Community	School and Local Authority
• The gap between children from low-income and high-income households starts early. By age 5, it is 10–13 months. Lower attainment in literacy and numeracy is linked to deprivation throughout primary school. By age 12–14 (S2), pupils from better-off areas are more than twice as likely as those from the most deprived areas to do well in numeracy. Attainment at 16 (the end of S4) has risen overall, but a significant and persistent gap remains between groups (Ellis and Sosu, 2014). • Kintrea *et al.*, 2011) challenged the widespread presumption that poorer children and their parents have low aspirations. They found that poorer children (along with their families) often have high aspirations and that many want to go to university or get professional, managerial and skilled jobs. The real difficulty for many children was in knowing *how* to fulfil their ambitions. Rather than raising aspirations in order to raise attainment, there is a real need for children and parents to be offered support to learn more about educational and career options so they can make more informed decisions about their future. • The negative impact of poverty on children starts before birth and accumulates across the life course (NHS Health Scotland, 2018).	• Low-income families in poor neighbourhoods may lack the family financial resources to compensate for any harmful effects of neighbourhood economic disadvantage (Kim et al, 2019. • Social networks are vital to protect against poverty and social exclusion (Perri, 1997). 'Network' poverty arises when people do not have access to or the ability to make use of the right social networks. Ridge and Millar (2000) advise that colleagues and friends of friends are particularly important as a medium which link people to financial and employment opportunities. However these are also the networks which those who are unemployed and living in areas of high unemployment have less access to. • Disadvantaged adults may have an increased risk of their own children experiencing poverty (NHS Scotland, 2018). • Neighbourhood dynamics as well as poverty can have an impact on schooling and attainment (Ainscow et al, 2010).	• Consistent evidence indicates that low socio-economic status (SES) acts as an important stressor and vulnerability factor for children's school learning. Childs & McKay (2001) report that boys from low SES commenced school significantly disadvantaged by a pattern of perceived distractible behaviour in particular, and this perception continued to operate over the next two years of their schooling. Such a pattern implied that these boys were perceived by their teachers, from early in their school careers, as being demanding and difficult to teach. Once teachers gave certain boys a label it appeared to 'stick'. SES *per se* was thus not the main risk factor. It was primarily the effect of boys' greater activity level, distractibility, and initial inability to 'settle' to classroom routines, which seemed to be particularly associated with certain lower SES child-rearing practices. Therefore staff do not seem to fully understand the impact of poverty on children's capacity and readiness to learn. • Access to community resources and community identity. • Parents living in poverty with the greatest needs are commonly the parents least likely to access support – whether formal or informal. They are more likely to be stressed and depressed, and this may hinder them from accessing services (Utting, 2007).

Individual	Family and Community	School and Local Authority
• There is an association between neighborhood poverty and lower social cohesion and safety. This leads to greater externalising problems* among children with long-term family poverty and living in high-poverty neighborhoods compared with those in low-poverty neighborhoods (Kim et al, 2019). This poverty in early childhood can predict externalising problems throughout childhood and adolescence (Shaw et al, 2016). *Challenging/ distressed behaviour which is expressed outwardly such as arguing, destroying own things, disobedience at home, and behavioural outbursts). • Children residing in neighborhoods with substantial poverty are at greater risk of developing aggressive behavior (Miller and Tolan, 2019). • Childhood poverty and chronic stress can damage children's executive functioning capacities, including working memory. The relationship between early childhood poverty and adult working memory appears to be mediated by chronic stress. Elevated levels of chronic physiological stress during early childhood largely accounted for the prospective link between childhood poverty and deficits in adult working memory (Evans and Schamberg, 2009).	• People in lower socio-economic status have a significantly lower sense of self-worth, which can dampen their motivation to improve their condition. This finding was consistent across a range of life stages and age groups. It is likely driven by the fact that those low in income and education perceive themselves as being low in their surrounding social hierarchy Sheehy-Skerrington and Rea, 2017). • Maintaining social norms is important. Depending on others makes those living in poverty behave more positively to those who are socially close, but more negatively towards strangers and institutions. People in lower socio-economic status put lesser weight on personal aspirations and achievement in favour of helping others and conforming to community traditions. (Sheehy-Skerrington and Rea, 2017). • Lack of money (or low income) has been shown to have the strongest impact on children's cognitive, social-behavioural, educational attainment and health outcomes, independent of other factors such as parents' education (Cooper and Stewart, 2017).	• Negative attitudes' may reflect poorer children's lack of confidence in their own ability to succeed in a system organised around a middle-class ethos that they (and their parents) do not relate to (Carter-Wall and Whitfield, 2012). • Participation in extra-curricular activities is another important component of school bonding (Bergin & Bergin, 2009). High school students feel more connected to school when there is a high rate of participation in extra-curricular activities in addition to a positive classroom climate (McNeely et al. 2002). In one study, participation in extra-curricular activities at middle school prevented early school dropout (Mahoney and Cairns 1997). The least competent students benefited the most, even though their involvement was often a single extra-curricular activity. • Varying degrees of understanding of impact of poverty on children.

Individual	Family and Community	School and Local Authority
	• Investment model of poverty indicates the direct impact of low income on a family's ability to buy goods and services that contribute to health child development and to fully meet the costs of participation in the school day ((Stewart and Cooper, 2017). • Where parents are from poorer backgrounds themselves, or have not been successful in education, they may lack the practical knowledge that enables them to support their children, for example, with homework or making plans for their future (Carter-Wall and Whitfield, 2012). • Despite parents from disadvantaged households being as likely to help with their children's learning as economically advantaged parents, their efforts are less effective, especially where parental educational attainment is low. (Sosu and Ellis, 2014). • Many schools feel that parental aspirations and expectations are a challenge, often due to parents' own negative educational experiences (Baars et al, 2018). • Lack of money to buy resources can negatively impact on children's outcomes (NHS Health Scotland, 2018). • Young people from families in poverty participate in fewer organised out-of-school activities than their more affluent peers (Wikeley et al, 2007). Through their lack of participation in out-of-school activities, young people in poverty are denied important learning experiences which may affect their engagement in the more formal learning in school.	

Effective Interventions

- McKay, Dempster and Perry (2017) suggest that the patterns of lower academic attainment linked to areas of lower socio-economic status can be overcome if individuals attend school more frequently and have a higher level of belief in their own academic ability.

- Many factors can positively impact on educational attainment for children experiencing poverty including parental engagement with a child's education, good-quality preschool and extra-curricular support during school time (Sosu and Ellis, 2014; Early Intervention Foundation, 2017).

- In Baars et al (2018) research, all schools, both primary and secondary, saw educational trips and visits as a key component of their support for disadvantaged pupils, but lower performing primary schools were less likely to subsidise these trips. They also found that extra-curricular provision was broad and schools ensured that disadvantaged pupils could access such opportunities.

- **Research into 'good practice' suggests that policy-makers and practitioners can aim to improve service delivery and engagement with parents through:**
  - Choosing accessible venues and user-friendly times for service delivery.
  - Trusting relationships between front-line staff and service users.
  - An interactive style, involving parents in decision-making.
  - A 'visible mix' of service delivery staff, including age, gender and ethnic diversity (more important than achieving a precise match between the characteristics of service users and staff).
  - Overcoming prejudice, especially in relation to disability and poor mental health (assumptions that mental illness and learning difficulties are risk factors for child abuse and neglect have created a disincentive for parents to engage with services).
  - Use of trained staff in parenting support services.
  - Promotion of informal social networks among service users as well as formal support through services.
  - Providing information for parents which is locally, contextually and culturally specific and targeted towards different communities (Utting, 2007).

- Children residing in neighborhoods with substantial poverty are at greater risk of developing aggressive behavior. Strong neighborhood social processes and high levels of parental supervision/monitoring are associated with lower levels of aggression (Miller and Tolan, 2019).

- Involvement in extra-curricular activities is widely believed to lead to improved educational outcomes. However, it is not proven that such activities produce benefits in themselves or that participation in them necessarily results in improved educational outcomes, as there have been few robust evaluations. Whilst there is some evidence supporting their effectiveness, it is far from clear why observed improvements in attainment might have occurred. This area of intervention is therefore promising but in need of more evidence (Carter-Wall and Whitfield, 2012).

Effective Interventions

- **Sosu and Ellis (2014) advised that the following interventions have a positive impact on reducing the attainment gap associated with pupils from economically disadvantaged households:**
    - effective parental involvement programmes that focus on helping parents to use appropriate strategies to support their children's learning at home rather than simply seeking to raise aspirations for their children's education; high-quality, full-day preschool education for children from disadvantaged backgrounds;
    - carefully implemented nurture groups and programmes to increase social, emotional and behavioural competencies;
    - collaborative work in small groups if effective collaboration is thoroughly taught across the school and facilitated by teachers;
    - peer-tutoring, metacognitive training and one-to-one tutoring using qualified teachers, trained teaching assistants, or trained volunteers;
    - literacy instruction that has a responsive learning mix of decoding, fluency, comprehension, engagement and digital literacy research skills;
    - whole-school reforms, particularly those that are informed by research evidence and focus on improving attainment by using effective pedagogies, have a shared strategic plan that encompasses academic, social and emotional learning, are supported by significant staff development and are data-driven, multi-faceted and consistently monitor impact on attainment;
    - high-quality, evidence-informed, context-specific, intensive and long-term professional development;
    - mentoring schemes that adhere to particular characteristics associated with efficacy;
    - academically focused after-school activities such as study support
    - targeted funding that avoids situations where budget increases in one area are undermined by reduced budgets elsewhere.

Also see:
Interventions for Equity: https://education.gov.scot/improvement/self-evaluation/Interventions%20for%20Equity
Scottish Attainment Challenge: Learning and teaching toolkit: https://education.gov.scot/improvement/eefsearch
Education Endowment Fund: https://educationendowmentfoundation.org.uk/evidence-summaries/teaching-learning-toolkit/

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Factors which may influence attainment in areas where there is hidden poverty including rural poverty and those working but still in poverty

Individual	Family and Community	School and Local Authority
• Children who moved from poor to more affluent neighbourhoods presented with higher levels of depression and anxiety, possibly because of social isolation, when compared with children who stayed in their original neighbourhood. Such isolation, in turn, may deter families from taking advantage of social environments readily available where they live (Fourth, Leventhal and Brooks-Gunn, 2007). • In today's world, digital literacy is important. Young people who struggle risk social isolation. Unable to email, text, google, or use Facebook, Twitter and other social networking tools, they struggle to maintain and organise their social lives or participate in civic society (Leu *et al*., 2013). • When resources (e.g. time, money, food) are scarce, this 'scarcity hypothesis' states that people's attention focus narrows, concentrating on the immediate task at hand (replenishing the limited resource) at the expense of peripheral tasks or long-term planning (Fell and Hewstone, 2015).	• People living in poverty in rural areas are disadvantaged by the low accessibility of and long distance to services and goods. The lack of affordable transport in rural areas (including accessible and remote) was one of the most frequently mentioned aspects of disadvantage contributing significantly to the high risk of isolation of people. Whilst community transport seems to offer a valid solution to transport issues in rural areas, costs were often reported as prohibitive for people on low incomes. Transport charges are based on distance travelled and are, therefore, increasingly expensive for people living further away from their destination (Scottish Government Social Research, 2009). Limited transport and cost of transport could impact on attendance at school and extra-curricular clubs. • Young people from families in poverty participate in fewer organised out-of-school activities than their more affluent peers. Through their lack of participation in out-of-school activities, young people in poverty are denied important learning experiences which may affect their engagement in the more formal learning in school (Wikeley et al, 2007). Rural poverty could also impact on this due to limited transport and costs of this.	• Service provision from voluntary and public sector providers is less frequent and less accessible in rural areas, particularly remote rural areas (Scottish Government Social Research, 2009). This could have a detrimental impact on supports for children with additional support needs such as those requiring supports from SLT, CAMHS, etc. • School and community staffs' understanding of the impact of poverty on children's attainment and their families. • Access to community resources and community identity. • Low income pupils in schools located in cities make more progress relative to their more affluent peers than those in rural areas. This may partly be because the diverse labour market opportunities in cities compared to rural areas influence pupils' and their parents' expectations of the opportunities education can create. It may also be partly influenced by there being more low income pupils from ethnic minorities in urban areas, particularly those of recent migrants, whose parents are often more engaged with education (Shaw et al, 2017).

Individual	Family and Community	School and Local Authority
•	• Although not an issue specifically affecting people experiencing poverty, improved broadband coverage in rural areas would help people in vulnerable groups to benefit from the advantages of technological developments (Scottish Government Social Research, 2009). Limited access to digital technology could be detrimental to students for the purposes of homework and studying. • Because people experiencing poverty in rural areas are widely dispersed, many are embarrassed about or afraid of their personal issues being made visible to their community (Scottish Government Social Research, 2009). Shame and stigma surrounding poverty can mean that children feel excluded or embarrassed when unable to afford what is needed. Missing out on opportunities and feeling different make it more difficult for children to learn, achieve and to be happy at school (Cost of the School Day, 2018).	•

Effective Interventions
• "The schools in which low income pupils make the most progress are those that are both outstanding and which have particularly high or low proportions of low income pupils. These schools are more likely to have developed a culture that encourages pupils and staff to believe that low income pupils are capable of making good progress. This belief is accompanied by tangible practices such as tracking progress data and intervening when pupils' progress drops off as well as ensuring that SEND provision is high quality. They also particularly target resources at low income pupils. On the other hand, many factors are less within schools' control. These factors include the limited supply of high quality teachers." (Shaw et al, 2017)

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Factors which may influence positive destinations for those affected by poverty

Individual	Family and Community	School and Local Authority
• Experiencing or growing up in poverty affects people's lifelong decision-making style. People living in poverty make decisions focused on coping with present stressful circumstances, often at the expense of future goals. (Sheety-Skeffington and Rea, 2018). • People in lower socio-economic groups see themselves as less able to learn new skills and succeed at tasks. They are also less likely to perceive that their actions will make a difference for how their lives turn out. This has important consequences for academic performance and health behaviours, as the less people feel their actions matter, the less likely they are to make choices aligned to achieving future goals. (Sheehy-Skerrington and Rea, 2017). • Children from low income households are more likely to report feeling useless and hopeless about their futures (Children's Society, 2016).	• Peer relationships are widely regarded as influencing young people's psychological wellbeing in both positive and negative ways (Balluerka et al, 2016; Gray et al, 2018). • Social networks are vital to protect against poverty and social exclusion (Perri, 1997). 'Network' poverty arises when people do not have access to or the ability to make use of the right social networks. Ridge and Millar (2000) advise that colleagues and friends of friends are particularly important as a medium which link people to financial and employment opportunities. However these are also the networks which those who are unemployed and living in areas of high unemployment have less access to. • Poorer children and parents may not be aware of the full range of possibilities open to them or understand the routes that need to be taken to secure certain occupations or routes into post-compulsory education. (Carter-Wall and Whitfield, 2012).	• OECD research on supporting disadvantaged students and schools advises that we need to 'improve the quality and design of upper secondary education to make it more relevant for students and ensure completion' (OECD, 2010). They advise on different policy options including "making academic and vocational tracks equivalent by improving the quality of vocational education and training; reinforcing guidance and counselling for students and designing targeted measures to prevent dropout - such as additional pathways to obtain secondary qualifications or incentives to stay in school until completion." • Bergin and Bergin (2009) highlight the impact of the secondary school context on student engagement especially for those who have experienced disadvantage and have issues forming relationships. It is more challenging to develop teacher-child relationships in a secondary school environment because children spend less time with a single teacher and tend not to encourage school belongingness.

Individual	Family and Community	School and Local Authority
• Attainment in school is strongly linked to future employment prospects and education can offer a route out of poverty for many young people – however coming from a low-income household can affect how children are able to access that education (Cost of the School Day, 2018). The observed gap in attainment is linked to the subsequent destinations of children and young people after school, and has repercussions for future job market success (Sosu and Ellis, 2014).	• Research consistently finds that the majority of parents from low-income backgrounds have high aspirations for their children's education (Cummings *et al.*, 2011). The main issue is that parents from low-income households do not have the social or economic capital or the know-how to achieve these goals (Kirk *et al.*, 2011). • Growing up in poverty is also linked to lower general trust of others, perhaps because of a lower sense of belonging in society at large. This may increase the likelihood of hostility toward strangers and diminish the likelihood of making friends in new environments (Sheehy-Skerrington and Rea, 2017).	

Effective Interventions

- Career development programmes were found to have the most effect on academic achievement if they are introduced at a younger age e.g. nursery school age, are integrated with wider academic and support programmes for students and are implemented in more systematic ways (Robinson, 2013).

- Young people with lower levels of life satisfaction are less likely to go on to find a job so focusing on improving student wellbeing is vital. Importantly there is the strongest increase in employability for introverts therefore suggesting that it may be beneficial to target some wellbeing services at introverts (Longhi et al, 2019).

- **McCrone and Bamford (2016) researched key elements of support programmes for children who are at risk of disengaging from education at secondary school. The key elements are:**
  - Mentoring: variable approaches to this but provided a consistent relationship with an adult who kept them on track.
  - A consistent, dedicated project lead: a person who was approachable and relatable and took time with young person.
  - Group support: mutual interest and support from similar young people appeared to enhance engagement.
  - Relevant to world of work: The evidence suggests that when young people could relate to the world of work and the next steps of their journey they found it easier to understand the relevance of their school work.
  - Flexibility: young people reported that they liked having more control over their work and flexibility to see their project lead and/or mentor when they needed.

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