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What are some of the difficulties for secondary schools to overcome to effectively imbed the new 2022 curriculum for Wales?

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INTRODUCTION

Within the UK education system there has been continuous and significant change driven by differing motivations or governments but ultimately the core values driving these changes can be traced back to James Callaghan's Ruskin College speech (The Guardian, 2016). He emphasised the crucial point that all children have the right to a high quality and standard of education regardless of their background or location. This speech was an unprecedented event, as it was the first time a UK Prime Minister had spoken publicly about education, bringing education to the attention of the electorate and precipitating major changes throughout the forthcoming decades. Critically, this was the point where the case for a 'core' curriculum was strongly proposed and subsequently the National Curriculum was introduced. A major intention of the introduction of the National Curriculum was to address the lack of structure within the education system that had been highlighted by cases such as the William Tyndale School Affair (1974). Schools would now have increased accountability and have to work within the parameters of a formulised, uniform curriculum.

Since then, preceding policies have sort to streamline the accountability progress while maintaining a fixed curriculum. Most recently the current government has endeavoured to "reduce central and local government prescription for all schools to give heads and teachers the space to focus on what really matters" (Gove, 2012). To action this, the National Curriculum was made more concise, routine Ofsted inspections of outstanding schools were stopped and a modified inspection framework developed. The focus of inspections being reduced to four areas and informing parents of the findings in a more 'user-friendly', online format, enabling parents to make more informed choices and judgements about schools. This is an important point as schools are very much accountable to the parents of the pupils that they serve and as with any industry or service, data and information can be very difficult to interpret if you are not in that specific industry or service.

Specifically, within Wales, the inspectorate ESTYN now has five inspection areas: standards, wellbeing & attitudes to learning, teaching & learning, care, support & guidance and leadership & management. These inspection areas form a more rounded consideration of a pupil's education, considering the wellbeing and personal aspect of education. Schools evaluation processes are regarded, which is significant, as in order to self-improve you must be adept at self-evaluation. However, sceptics of the current system might identify flaws or issues. With government funding being stretched in the current economic climate, is another layer between the Welsh Assembly Government and schools receiving funding necessary. Ultimately, aim outlined by the Welsh Assembly Government is to raise standards and reduce the attainment gap while also developing an education system that can be a source of national pride. In addition to the recent changes in the educational inspectorate ESTYN and new curriculum is to be embedded within schools by 2022. This is a significant change within the Welsh education system and will provide a challenge for teachers and school leaders to implement this change. As Callaghan stated the education system should "equip children for a lively, constructive place in society and also fit them to do a job of work" (Callaghan, 1976). Essentially, allowing pupils to

opportunity to be the best they can be and ensuring that they have the required, relevant skills they need to succeed. Echoing this sentiment, the new curriculum for Wales 2022 has skills at its core.

The reality in the workforce is that the majority of the jobs that the current generation will be working in in the future have yet to be invented. Devising a curriculum to generate young people that will be able to thrive in the future has motivated this latest change in curriculum. Removing the fixed content of the previous curriculum and placing the emphasis on skills is the way in which the Welsh Assembly Government has approach this challenge. The new curriculum seeks to broaden learning, develop digital skills but also to foster creativity and adaptability with the intention that well skilled, confident, resilient young people will be in the best position to thrive in the increasing global work force in the future.

A key catalyst forcing a change to the current curriculum has been publication of the PISA results where the countries of the UK, Wales in particular, perform relevantly poorly when compared with other economically similar countries. As transport links and technology continue to progress at a rapid rate the work force is becoming an increasingly global one, compounding the importance that future Welsh generations need to possess the necessary skills in order to succeed and compete with the rest of the world. These sentiments are evident within Donaldson's "Successful Futures" report (Donaldson, 2015) which confirms the rationale and reasoning behind the need for such a dramatic change to the curriculum in Wales and how it is to be delivered within schools. Central to his conclusions is the importance for pupils to be given the opportunities to apply their skills, particularly literacy and numeracy, to a wide and diverse range of contexts and problems with the intention of developing their problem solving, creativity and communication abilities. Furthermore, in 2013, the three-country regulation which governed comparability in qualifications at GCSE and A-level between England, Wales and Northern Ireland disbanded (Isaacs, 2014), with the then education secretary Michael Gove stating that the " three-country regulation of GCSEs and A-levels is no longer an objective towards which we should be working" (Coughlan, 2013). This paves the way for the Welsh education system to becoming increasingly autonomous and independent.

At the heart of the structure of the new curriculum for Wales is the creation of AOLEs (Areas of Learning and Experience), of which there are six; expressive arts, humanities, health and well-being, science and technology, mathematics and numeracy and languages, literature and communication. Formation of the AOLEs allows for increasingly collaborative work between staff across various department but also to increase the opportunities and value of cross-curricular work for pupils with the intention of developing transferrable skills. Barnes (Barnes, 2011) recommends that no more than three subjects should be intergrated into a working party so as to ensure meaningful interconnections between subjects rather than generating tangentially weak links between numerous, unrelated subjects. As with the content of the curriculum, the department members of each AOLE is a school-based decision; for example, some schools can place PE into the health and well-being AOLE or another might opt for the science and technology AOLE. Ideally, the decision as to the composition of each AOLE should be based on education ideals, however in the current climate, economic factors are likely to influence these decisions.

With such a sizeable change on the horizon for schools the question remains – how best to implement the curriculum successfully? Undoubtably there are, and will continue to be, objections to the speed and magnitude of the imposed changes; however, the fact remains that the change has and will occur. The challenge is therefore set for teachers and school leaders to imbed and deliver the proposed curriculum effectively so that Welsh pupils are equipped with the skills and competencies necessary to flourish in their futures. Sound leadership, accountability, creativity and collaboration will all be

required to affect the change along with drawing inspiration and ideas from the successful curriculum models from other countries that we are aspiring to emulate.

LITERATURE REVIEW

Although the new curriculum for Wales has been developed and designed by Welsh education practitioners, the curriculum shares parallels to the European Reference Framework, a document that outlines the eight key competences, the inclusion of which are widely considered to be imperative for a successful curriculum. Each member state is left to interpret these key competences and develop a curriculum that is best suited to the specific contexts of their education systems, leading to a range of different curriculum and policies. The key competences are listed as communication in the mother tongue, communication in foreign languages, mathematical competence and basic competences in science and technology, digital competence, learning to learn, social and civic competences, sense of initiative and entrepreneurship and, cultural awareness and expression. From a Welsh perspective the eight key competences are reflected in the AOLEs (Areas of Learning and Experience) that are included within the new curriculum along with the implementation of both the LNF (Literacy and Numeracy Framework) and DCF (Digital Competence Framework) throughout the curriculum. Therefore, the design of the curriculum strongly mirrors the European guidelines.

Pepper (Pepper, 2011) notes that the approaches taken by the various European member states to curriculum design can be categorised into four types, incorporating the cross-curricular approach that the curriculum for Wales is aiming to foster to differing degrees. Very few member states have retained the traditional style of a subject specific curriculum. Although, it does remain in countries such as Austria, Bulgaria, Germany and Poland. These members, particularly Germany, prioritise mathematics, science and their own language skills over cross-curricular themes. However, there have been indications that the integration of cross-curricular competences will occur in the future. The vast majority of the member states have, including the UK, opted for a cross-curricular format to their curriculum. Yet the UK is slightly behind in the process when compared with European countries that regularly feature favourably in the PISA results. These countries such as Finland, Denmark and Sweden have successfully imbedded their interpretation of the European Reference Framework into their education system and continue to see the rewards from it in the context of PISA results. Guidance and advice could be found by looking closely at these nations' curriculum; although as previously mentioned, the framework is up for interpretation by each member state and the specific contexts or nuances of each nation would have to be reflected within their own curriculum. As a consequence, there is not a single 'off the shelf' curriculum that could be used to improve the skills and competencies of pupils which is why the specifically Welsh curriculum has been developed.

As with opting any new process or system, the implementation of the new curriculum for Wales will be challenging. In addition to the content of the curriculum, which is outlined in the European Reference Framework, the exact content is up to the individual member state. The curriculum for Wales is fairly vague in that respect, with frameworks such as the LNF and DCF to provide teachers which guidance as to the level of the skills pupils are expected to obtain, but the "traditional knowledge" or topics to be covered are not specified. This allows for increased creativity and personalisation of the delivery of the curriculum but can also be problematic. Ultimately, schools are judged by examination results and performance indictors which are quantifiable data; therefore, with the development of the new curriculum, new assessment methods are required. As mentioned in the

Official Journal of the European Union (OJEU, 2016) as the key competencies are not explicitly associated with individual subject areas, assessment is difficult and examples of practise among member states is sporadic. This is a view point is echoed by a European Commission report (European Commission, 2009) which describes the current cross-curricular assessment practise as inadequate. In addition, Roseveare et al (Rosevearse & Santiago, 2010) confirm the challenges faced in developing suitable assessment that evaluate and report cross-curricular competencies successfully, observing that this is also the case in OECD countries. It would appear that few countries have specifically developed clear assessment policies in relation to key competencies. This is potentially a major factor in the impediment of a successful implementation of the curriculum for Wales, as increasing pressures of teachers to meet increasingly challenging performance indictors mean that ultimately GCSE and A Level results are prioritised. Potentially, unless these assessments genuinely reflect the skills that are to be developed through the curriculum for Wales, this could be a continuing issue.

Fundamental to the successful implementation of the new curriculum of Wales will be the way in which teachers interpret and deliver lessons with the increase emphasis of cross-curricular working and skills. There is a careful balanced to be found as Pepper states "knowledge cannot be applied without skills, skills cannot be applied without knowledge and neither will be applied without supporting attitudes" (Pepper, 2011). Countries such as Finland have found this balance between assessing learning processes and learning outcomes which is perhaps influential in their traditionally successful PISA outcomes but to demonstrates that the curriculum for Wales could have equally positive if implemented correctly.

Though the educational systems in European countries share similarities with the UK, they are not identical. Examples of situations where cross-curricular projects or curriculum within a UK context would agreeably prove more valuable from a Welsh perspective. A successful implementation of alternative curriculum is evidenced in an action research project by Stanley et al (Stanley, Jones and Murphy, 2012). The rationale of this alternative curriculum was to foster learning experiences tailored towards the twenty-first century which echoes the philosophy of the curriculum for Wales. As would be the case with the curriculum for Wales this alternative curriculum was rolled out across the whole year group independent of ability. Though in contrast, it was only trialled across one specific year group; however, this provided other year groups that were still using the existing curriculum to be used for comparison purposes. A fairly large sample of 167 pupils was used and the findings were by and large positive, both from a pupil and teacher perspective, although some difficulties and issues were identified.

Many of the difficulties that were identified, one might expect from such a significant change in curriculum. Primarily, challenges were faced in the collaborative and time-consuming planning needed for the cross-curricular elements of the curriculum. This reaffirms similar themes noted by Pepper (Pepper, 2011) and Roseveare et al (Rosevearse & Santiago, 2010). In addition, the lack of readily available resources to support teaching was a commonly made point by the various teachers interviewed for the report. This has parallels with the deliberate vagueness of the curriculum for Wales with regards subject content, as here too, it will be difficult for the Welsh Assembly Government to provide ready to use resources; teachers will have to adapt whatever specimen resources are published to suit each individual schools' schemes of work. Stanley et al (Stanley, Jones and Murphy, 2012) also found a number of positive effects from the application of the alternative curriculum. The level of challenge in the alternative curriculum would appears to be greater as the number of pupils that considered the classwork set being too easy reduced from 26% to 14%. In addition, the findings from the pupil questionnaires showed that pupils felt that the teacher-pupil relationship has benefited from the alternative curriculum. However, there were individuals that disagreed with this, which is to

be expected as there can be personality clashes. Some unexpected outcomes were also observed in the data collected from the study with the number of pupils reporting bullying incidents falling from 37% to 10% with Stanley et al (Stanley, Jones and Murphy, 2012) suggesting that the decrease could be a result of a positive ethos generated by the alternative curriculum and the fact that pupils will have had less interaction with older pupils as they will have remained in a single classroom the majority of the time. Though it is noted that 33% of alternative curriculum pupils compared with 15% of existing curriculum pupils encountered difficulties getting lost at school. Indeed, this implies that the alternative curriculum pupils will have had reduced interaction with older pupils, possibly reducing incidents of bullying; however, potentially it may also mean that they have had limited opportunities to explore the school's facilities and the social interactions that this would entail. This could be a significant point, as the aim of the new curriculum for Wales is to generate skilled, competent individuals which also includes being socially aware and adept at communication.

At the centre of the constraints or the challenges faced in implementing a new curriculum successfully are the teaching staff that are required to both deliver and develop it. Both of these areas of potential difficulty are mentioned by the teachers involved in Stanley et al's (Stanley, Jones and Murphy, 2012) case study and corroborated by a similar pilot project in an Academy school in England (Morris, Wilding and Williams, 2010). From a practical perspective having a single class for the majority of the teaching timetable had, at times, caused difficult dynamics within certain classes, both with negative behavioural issues but also with quieter pupils being overshadowed by more dominate classmates; suggesting that when timetabling a range of teachers should still be used. Though this could further exasperate the other significant problem area of planning and developing a tailored, bespoke curriculum rather than having the convenience of a prepared one. Furthermore, Morris et al (Morris, Wilding and Williams, 2010) found that discipline and engagement issues might arise when a teacher tried to use a traditional teaching with students such as working in silence compared to the group-work outlined in the pilot curriculum. Similarly, Whitty et al (Whitty, Rowe and Aggleton, 1994) deduced that when teachers and pupils subsequently moved back to the original curriculum or to lessons not involved in the pilot schemes there was some difficulty adapting to these contrasting working styles and patterns. In practical terms, the need for the traditional style lessons are needed with the new curriculum too; enabling the skills and behaviours that these types of lessons develop to occur alongside the more collaborative working emphasised by the Welsh Assembly Government and mentioned in the European Reference Framework. This new emphasis raises the question of whether a curriculum focusing predominantly on relevant life and vocational skills can indeed provide pupils with the knowledge they need to be successful. The curriculum coordinator in Stanley et al's (Stanley, Jones and Murphy, 2012) case study implies the assumption that the pupils only have access to enquiry-based learning within the alternative curriculum and that it is the best way to learn. However, this cannot be said for every individual as often there are many different pathways for learning, requiring a strong and solid knowledge level before skills and enquiry are layered on top to demonstrate competency.

Though each school will have to design and develop their own interpretation of the new curriculum for Wales, unlike the previously mention literature this is a compulsory, enforced change to the education in Wales. The changes have and are occurring, as noted by Downey et al (Downey, Byrne and Souza, 2013), the highly departmentalised structure of secondary schools in particular, present a difficult and challenging environment to successfully imbed cross-curricular, skills based working practises. To facilitate the significant changes facing education, leadership within schools needs to be strong and effective; with the headteachers, senior leadership, middle leadership and classroom teachers all working together.

Research indicates that provided there is sufficient accountability and leadership that school autonomy can result in positive outcomes (OECD, 2010). As the interpretation of the new curriculum for Wales allows creativity and innovation in its delivery, it is vital that schools take ownership of their responsibilities, work as teams, identify strengths and weaknesses, evaluate performance honestly and realistically so that the curriculum is imbedded successfully. Countries such as Finland, Singapore, Canada, whom regularly fair positively in PISA tables, have widely-regarded successful models for self-evaluation that the UK could use for ideas and examples before adapting to fit ourselves. Numerous factors are required to create these self-improving systems with ethos, culture, environment all playing a part; therefore, there is no 'one size fits all' approach as is the case with curriculum design. Within a school environment, the leadership team and their ethos are of paramount importance in driving change. Additionally, the staff are crucial as it is indeed them that will indeed by delivering the curriculum. Ideally, staff must share the ethos of the leadership team but also feel valued and motivated to participate in the system. In the case of this enforced curriculum change the ethos is predetermined to a certain extent; potentially leadership styles might have to adapt to context of a compulsory change in order to proceed effectively.

Numerous models which describe methods and techniques to facilitate change within large organisations exist with many of them sharing intrinsic values but differing methods potentially suiting different scenarios. Kotter (Kotter, 1996) describes his "8 Step Model of Change". His model can be illustrated with the following model:

Fig 1: Adapted from Kotter (1996)

Kotter's model can be applied in a school environment. Initially, what he refers to as 'urgency' in this context is the curriculum change itself, providing the catalyst of change within the school. From a leadership point of view arguably, step two of Kotter's model is the most significant as failure here could cause change to falter. Clashes of personalities and the existing school culture could mean that the headteacher would have to identify key 'allies' that share the vision or ethos, much as Stanley et al's (Stanley, Jones and Murphy, 2012) noted when a designated curriculum coordinator was appointed to oversee and facilitate the delivery of the alternative curriculum. This approach is common to other change models for instance when Collins (Maynard, 2015), describes "getting the right people on the bus and in the right seats". Within a school, it would also be prudent to involve influential people from across different departments and levels. This would foster to feeling that all members of staff are valued and that everyone has a significant role to play in the changes, in turn mirroring the ethos of the new curriculum with collaborative and creative practises. Fundamentally, for the new curriculum to be successful everyone as to work together, sharing good practise and motivating one another to succeed and improve.

Once change has been initiated, motivation needs to be present to maintain momentum. A single long-term goal can be daunting and feel like an insurmountable task to achieve which means that step 6 of Kotter's model is important. Psychologically, it is far easier to achieve a series of short-term goals, deriving regular positive reinforcement from meeting specific goals and continuing the pace of change. Smaller, shorter term goals also allow for more collaboration, as in the context of a specific department, individual staff member could each be assigned a certain task to complete, fostering a feeling of team work and ownership of the occurring changes. Kotter's model does have a high weighting on the involvement of staff, initially key members of staff, but it also normalises change. As suggested in the literature there are multiple reasons why staff would be reluctant or even afraid of change so the processes outlined in this model could go some way to alleviate these reasons. However, there are limitations evident in the model, as it could become a top-down, time consuming approach that, without the correct leadership, could alienate or frustrate staff.

Comparably, to that of Kotter, Lencioni's model outlines a series of steps that are required to be completed in sequence and failure to do so would halt the process. Although the titles given to the stages vary across the two models, the essence of the models is similar. Emphasis being placed on the value and importance of solid team work and a positive and trusting working environment where staff are confident to critically analyse themselves and others. As with other models for change, time is needed to genuinely create this type of working environment. With an enforced, time managed change such as a new curriculum, it could be difficult to truly, authentically create the type of working environment that these models for change outline.

Fig 2: Lencioni 5 Step model (2002)

Furthermore, Lencioni (Lencioni, 2002), explicitly mentions accountability within his model. As teachers have not specifically chosen the curriculum change, rather it is a compulsory one where there is no other option, accountability is important to ensure that teacher do implement the curriculum effectively. Personal accountability is a strong motivator for most people, in my opinion people try to do their best. In addition, if a strong team-work ethic is embedded in the school, peer accountability will also be evident along with staff working together, openly and honestly, to maximise outcomes. To aid with profession accountability, the new teaching standards run alongside the new curriculum and frameworks, providing a concrete set of standards which as professionals teachers are held accountable too.

Curriculum changes are not unique to the UK, indeed countries such as Finland and Canada have shown that reforms can be successful if approached in a measured and considered manner rather

than hasty, wholesale changes. Isaacs (Isaacs, 2014) uses the recent example of GCSE English reforms in England to point out the negative consequences of knee-jerk reactions, pushed through in a short period of time. Lack of clarify of knowledge content, confusion with overlapping syllabuses, changes to pupil entry were among the key issues that caused the failure of this particular change. Similarities exist in the factors that caused this failure with the new curriculum; namely the time frame for the changes and the uncertainty over content. There is as much merit in evaluating unsuccessful curriculum changes as that of modelling successful changes, to ensure that similar mistakes are not repeated. In essence, despite the change in curriculum being a compulsory one and the lack of alternative options, teachers will have to deliver the curriculum for Wales and ultimately, exam results along with PISA tables in the coming years will be the benchmark as to how successfully the changes have been implemented.

METHODOLOGY AND DATA COLLECTION

As the literature demonstrates there are various factors that could impede the successful embedding of the new curriculum but in addition there are alternative approaches to facilitating the change in curriculum available to schools as the Welsh Assembly Government has not provided a stringent set of instructions for schools to follow. Therefore, within schools there is scope for different approaches to be trialled but also the implication that some approaches will work in certain scenarios but not others. This suggests that the delivery of lessons and the development of schemes of work might be more fluid and malleable than has previously been the case. These circumstances have led many schools to trial different projects or smaller scale curriculum changes as models to help inform them as how best to implement the full curriculum change.

In the school I currently am employed in, this has been the case. Specifically, the trial of an invention group where pupils with weaker literacy and numeracy skills than the rest of the cohort will be taught a blended Humanities curriculum with a strong emphasis on literacy and numeracy skills. This trial requires collaboration between the Heads of Departments within the Humanities AOLE, numeracy and literacy coordinators along with the two members of staff that are timetabled to teach the group. The aim of the invention group is primarily to improve the literacy and numeracy skills of the pupils but from a school organisation perspective it will act as a trial to test possible strategies and systems to use in the implementation of the full, new curriculum across a whole year group. As such, it is important that the opinions and thoughts of the different participants in the group are observed and analysed as well as some quantitative data as to evaluate how effective the group has been with regards improving pupil skills.

The first step of the process is to identify the pupils' that will be selected for the intervention group. For this to occur selection criteria needs to be agreed. It is important that the pupils are selected prior to the development of the resources as this will enable the resources to be set at the correct level for the pupils, otherwise there is a risk that the resources would be ineffective. The selection criteria will take into account the literacy and numeracy skills of the pupils; this will require that the whole cohort of pupils will complete the same testing processes so that fair comparisons can be made of the data collected. The initial selection of the pupils will purely be based on data; however, the intention is that throughout the school year, pupils that progress positively can leave the group and teacher referrals can inform or suggest additional pupils to could benefit from being included within the intervention group. The transient nature of the group echoes the sentiments of the new curriculum in that education should be personalised and tailored to individuals. In addition, the fact that the resources

will be developed after the selection of the pupils will allow the work to be designed to the notion of 'stage not age', again resonating with the ethos to the new curriculum.

Intrinsic to the successful implementation of this trial will be the teaching staff. With various staff from different departments and with different areas of responsibilities, clear and effective communication will be required. Ultimately, a member from the senior leadership team will oversee the trial, but each member of staff will be accountable for their contribution and role within the trial. However, as outlined within the new teaching standards, all teachers have a responsibility to equip pupils with the relevant numerical skills that they require to succeed within a subject and eventually in the wider world. As with the enforced curriculum change, the expectation that all teaching staff embed literacy and numeracy within their lessons is an official, professional requirement. However, to ensure the changes are embedded successfully, staff still need to 'buy into' the changes and be motivate to experiment and trial new approaches. Therefore, the role of the leadership team within the school is still crucial to the successful implementation of changes.

A clear, united vision is a key factor to have a group of people working cohesively as a team. Regular meetings as a group to plan and develop the resources initially along with members of staff conveying their thoughts and experiences during the delivery of the programme will be beneficial. Open, honest and effective communication will be paramount in both the implementation as well as in determining whether the programme is successful in terms of a meaningful evaluation process. When implementing a change, a major threat to the success can be this lack of consistency. Failure to ensure consistency will result in the vision being diluted and ultimately unsuccessful. To achieve the necessary consistency, all staff need to be using on message and the leaders need to be reinforcing the vision regularly. A united team with a clear vision and end goal will mean that the pupils benefit from the consistent approach and reduces confusion. Many academics' state, for example Belbin (Belbin, 1981), teams are complex, containing different characters and personalities, being able to motivate and recognise the specific contribution that each individual can contribute is the key to successful leadership. Knowing the team well enables leaders to get the most out of them and will contribute to achieving consistency.

Perhaps leadership ideas can also be taken from outside of the education sector. In business, the 'golden thread' theory is widely used. This stresses the importance of knowing the team and organisation well and is acknowledged in stage two of Kotter's model for change (Kotter, 1996). As described by Belbin (1981), a team has nine types of members and to initiate change 'drivers' are required. Within his model 'drivers' would be described as either "resource investigators", "shapers", "team workers", "implementers" or "complete finishers" (Belbin, 1981). These are the people that embrace or are receptive to change, actively making the effort to do so. To drive forward subsequent changes, these members of staff will be crucial so being able to identify them has proven very useful. Once each team members strengths and weaknesses are identified, good leadership would then use these to foster a positive, team working environment where collaboration can take place. Trust in your own ability as a practitioner and with your colleagues is important in creating this type of atmosphere as alluded to in Leicioni model (Leicioni, 2002). Sharing good practise is one way which this can be done. It allows staff to use their initiative and be inspired by other staff members but also to receive praise and acknowledgement of the good work that they do.

As outlined in the 'golden thread', evaluation of the outcomes is the final step. Although, adaptations to the way schools are inspected and judged are being made, the system still has a heavy weighting on quantitative data over qualitative. Primarily for the fact that it is easier to collect, process and collate. To evaluate the effectiveness of this intervention group, a mixture of types of data and collection methodologies will be needed to obtained a well-rounded picture of the impact of the

project. To this end, the viewpoints of all the parties concerned should be taken into account. There are increasing opportunities for pupils to expresses their opinions on their own education with the inclusion of systems such as listening to learners. However, difficulties can arise with questioning pupils both with the responses they offer and regards to logistics of these sessions, for example whether to hold them during or after school and initially with the pupil's own readiness to discuss their opinions. The latter would be slightly dependent on the individual personality of the pupil, although as outlined in Donaldson's report (2015), we need to be ensuring that all pupils are able to self-evaluate and be confident to talk about their own educational experiences. This questioning would be done with both the teaching staff and pupils involved in the intervention group through either a brief questionnaire and/or triangulated with small-scale interviews. Triangulation is widely mentioned in all research methods textbooks and is important as "when analysing data, it is important to step back and think about the wider picture" (WAG, 2015).

Cohen and Manion (Cohen and Manion, 1998) refer to a sample size of 30 being widely regarded as the minimum number of cases if statistics analysis is to be carried out on the data. However, the anticipated size of the intervention group is between 15 to 20 pupils. The size of the intervention group does limit the sample size, though the smaller size group does mean that all pupils in the group can be represented in the sample. In addition, the smaller sample size means that data saturation is less likely to occur. As would be the case for both the teacher and pupil questionnaires and interviews, BERA guidelines (BERA) would need to be followed. Pupils would be informed and would receive a consent form where the use and anonymity of the information gather would be made clear to them. A numbered questionnaire method would be used to enable participants to recall their responses should they wish. As described in Basit (Basit, 2010) "a poorly devised questionnaire can make to task of data collection extremely difficult and time consuming." Furthermore, a significant disadvantage of questionnaires is that there can be a small number of replies which could be an issue in the amount of data obtained. In order to try to minimise this potential issue, the questionnaire will be brief and consist of a series of closed questions to provide quantitative date which could then be used to generate a profile of the individuals that complete it. In addition, one or two open questions would generate qualitative data based on the participant's opinions. Each question would contain a Likert scale to try to gather data about the participant thoughts and feelings but in a way that could still be analysed. The scale would have an even number of options. Due to the fact that with an odd number of options you could just fill in the middle option. The use of the even number forces the participant to show an indication as to if the agree or disagree with the statement. This should provide more telling and less neutral responses. Further to the Likert scale, space for participants to add further responses should they wish would be included. The closed questions within the questionnaire would generate quantitative data which could be fairly easily analysed. Collecting data from the open-ended questions poses more of a problem. Therefore, a word cloud technique would be used to analysis the language used within the responses which give a flavour of the opinions expressed.

As summarised by Tuckman (Tuckman, 1972) both interviews and questionnaires have merits. An interview will provide the opportunity for participants to verbalise their opinions. It can be easier to verbalise opinions rather than writing them down as then you encounter less literacy issues. As the invention group contains pupils selected due to their weaker literacy skills this could combat this potential issue. The same open questions from the questionnaire would be asked to the pupils during the discussions to see if the verbal responses matched the general themes analysed from the written responses. Individual responses from the questionnaire would not be read out to maintain anonymity but the word cloud findings could be used as a prompt or way to start the conversation as the group interview scenario could feel staged and unnatural initially. Although an interview has the potential to provide honest responses; there could be an issue with the reliability of the responses, as outlined

in Watts and Ebbut (Watts and Ebbut, 1987). Within a group of people there will be different social interactions along with different personality types. For example, one group might contain a very dominant, talkative person that controls the flow and content of the interview. In this event, the opinions of the other members of the group might be influenced by this person or not even heard at all. Within the interview, it would be important to foster an atmosphere where each group member had the opportunity to speak openly about their opinions. The small size of the interview group increases the feasibility that all members will have the opportunity to express their own thoughts.

The process of collecting and recording the outcomes of the interview are evaluated by Cohen and Manion (Cohen and Manion, 1998) where there are numerous possible techniques from detailed transcripts to summarising participants responses. As the purpose of the interview is to triangulate the questionnaire responses, the aim is to identify the general themes from the interview. A transcript would be written from the recording of the interview. Permission for recording the interview would have been obtained has it would have been outlined in the consent form. A similar word cloud analysis would be performed to identify any changes in the terminology and to provide more qualitative data about the pupils' opinions on the intervention group.

Finally, in addition to trialling a cross-curricular AOLE Scheme of work, the main aim of the intervention group is to improve the literacy and numeracy skills of the selected pupils. To assess progress, the same style tests that were used to selected to pupils initially will be used periodically throughout the year. The quantitative data generated will allow for progression to be monitored for each pupil. As previously stated, if a pupils' progress is particularly positive then they will graduate from the group. Amalgamating the findings of the questionnaires and pupil interviews will provide an insight into the practises that have been beneficial and of equal importance, identify areas for improvement.

CRITICAL REFLECTION

Noted by Basit (Basit, 2010) there are different paradigms that can be applied in educational research. The most common place would be the normative paradigm. This is considered a traditional approach to research where the data collected is analysed and if done on a large enough scale, the findings could then be generalised. In this case, the sample size is relatively small and is not a stratified sample as the pupils included have already been selected based on their literacy and numeracy skills. The sample is not fully representative of the whole school population and therefore it could be argued that this will hinder the ability to make generalisation based on the data. However, the pupils will be from the main stream cohort and so it can be safe to make generalisations within the same school setting.

Furthermore, bias is a major issue in any form of research or intervention. The methods used within to investigate the effectiveness of the implementation of intervention group will be mainly based on inductive reasoning, where the outcome is yet unknown with the aim of having an unbiased start point. As the information collected is analysed, conclusion and findings can then be drawn. The alternative, deductive method, would require a specific method of implementing the curriculum change and the findings disprove or approve its effectiveness. Both inductive and deductive research methods have their bias issues. In a deductive, you might be biased towards the outcome that has been decided upon and would not investigate the alternate options stringently. Whereas if an inductive method is used you might be subtly biased towards a preferred outcome as it is difficult to have a totally impartial view on an issue. The aim of the research method is to try to ensure that you

have taken the appropriate steps to minimise bias and to maximise the reliability of your findings. The trialling of different techniques and ideas from various staff mean that the research method is based more on an inductive approach.

Some of the evidence collected throughout the year could also be open to bias. The quantitative data generated from testing pupils to establish and track their progress within their literacy and numeracy skills is at minimal risk of bias. However, the information gather from the questionnaires and pupil interviews has the risk of being affected by bias. In this respect, it is important to accurately and neutrally record or report what is said or written in these cases without added any interpretation or implication. The evidence collected should be used to inform of the success of the changes but in addition, identify problems that have arisen. Negative evidence could be perceived as a threat and could simply leads to the changes being written off as failure. However, in a truly self-improving system which is an aspiration of the Welsh education system, negative evidence should be valued as strongly as positive evidence. It can help to identify the areas required to further hone the process or changes and ultimately led to continued progress and improvement. This is ultimately the mind-set that the new curriculum is wishing to instil into Welsh pupils and as teachers this is the mind-set needed if we are to effectively implement the changes required for the new curriculum for Wales.

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