

Increasing challenge in the curriculum: Examples from practice in Nursery, Primary and Secondary Schools.



Background and rationale

The national approach to the education of highly able pupils is an integral part of the drive towards a more inclusive education system in Scotland. In 2000 The Standards in Scotland's Schools etc Act (2000) stated that it is '...the duty of the authority to ensure that the education is directed to the development of the personality, talents and mental and physical abilities of the child or young person to their fullest potential' (p?). This was good news for highly able pupils and indeed all pupils in Scotland. In 2004 in the Additional Support for Learning (Scotland) Act suggested a number of instances where pupils might be deemed to have additional needs in terms of their learning. Highly able pupils were specifically mentioned in this Act and so for the first time the needs of highly able pupils were enshrined in law and specifically referred to in the accompanying Code of Practice (Scottish Government, 2005) and the updated legislation and Code of Practice (2009). Subsequent policy initiatives such as Getting it Right for Every Child (Scottish Government, 2008a), sought to bring together the support available to a young person in the family, community or through universal services, and this focused the attention of authorities on how needs might be met in practice. The needs of highly able pupils are part of this inclusive process.

Identifying, valuing and celebrating excellence remains at the forefront of the current curriculum developments in Scotland (Scottish Executive, 2006). The curriculum framework, Curriculum for Excellence, therefore offers schools an opportunity to plan learning opportunities that take into account the needs of highly able pupils. The experiences and outcomes for learners 'do not have ceilings, to enable staff to extend the development of skills, attributes, knowledge and understanding into more challenging areas and higher levels of performance' (Learning & Teaching Scotland, 2009, pg4).

The work reported here aimed to find out what these learning opportunities looked like in practice and brought together contemporary theory and research about high ability from the University context and the applied knowledge from experienced teachers across all three sectors: early years, primary and secondary schools in West Dunbartonshire Education Authority. Focusing on one authority within the project work facilitated easy organisation between the sectors and allowed us to look across the three sectors without confounding the issues that might arise between different authorities.

Purpose of the project

The project aimed to:

1. Develop a framework to support education staff to develop appropriately challenging IDL activities;
2. Develop an example of completed frameworks for all three sectors: Pre-five, primary and secondary;
3. Trial the use of these frameworks in each sector; report findings to the Scottish Government; and
4. Make available guidance, exemplar frameworks and reflections on this project nationally and internationally.

Who took part?

Twenty-one members of teaching staff and one Education Authority representative participated in the project. This included four early years practitioners from across five different settings, 12 primary school teachers or ASN coordinators within the primary context from across eight different settings and five secondary school teachers from across four different settings across the authority. This range of members across the sectors brought a diversity of contexts and experiences from within each sector (e.g. large new secondary schools/smaller secondary schools) and provided a mix of experiences. The

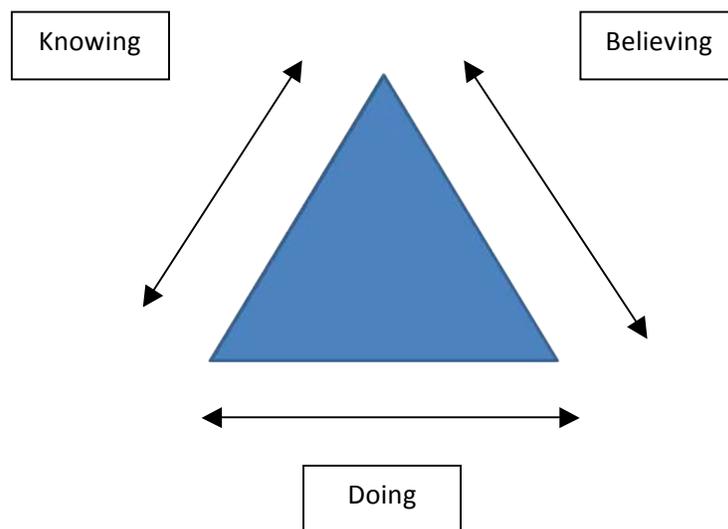
representative from the Education Authority was also involved in all the planning meetings providing a useful overview from the Education Authority in addition to each of the school and context experiences.

Coordinated Planning Meetings

Initially three planning meetings were held with the whole project team in November/December 2012 and January 2013.

The first meeting offered SNAP staff the opportunity to outline the main aims of the project. As staff were from a variety of sectors across the authority they did not know each other and so staff introduced themselves giving a thumbnail sketch of their establishment and outlining any existing work they were doing in the area of high ability. The remainder of the time was spent in sector groups (nursery, primary & secondary) where participants considered possible interdisciplinary topics that could be developed as part of the project.

At the second meeting, staff from SNAP provided input from recent research and theory on high ability. This input offered participants an opportunity to reflect on their beliefs and existing knowledge about high ability. Rouse (2008) suggests that there are three important interconnecting aspects to practice.



He argues that what teachers know and believe affects what they do thus SNAP staff considered this initial reflective activity to be crucial if educators were to deepen and develop their understanding about



highly able learners and how to cater for them appropriately. Having spent the morning considering a range of theory and beliefs about high ability, the afternoon was spent in sector groups working together to build frameworks that would address the needs of highly able pupils in ways that would fit feasibly within their context and fit more generally within an inclusive pedagogy. By the end

of the third planning meeting each individual member had identified a framework to trial and evaluate within their context. Staff had drawn up a clear plan of action for how they would trial the project with children/pupils in their context, addressing the following questions:

- a. How children/pupils will be identified?
- b. Who will do what (staff involvement)?
- c. Where it will take place?
- d. How long it will last?
- e. How often the children/pupils will meet?

It was also suggested that an important element of the reflection and evaluation of the activities would be to include a visit for the young people to the University to disseminate their work and reflect on their activities.

Staff returned to each of their individual settings to trial the programmes with children/pupils between February and the end of May 2013.

The final meeting was held in June 2013. At this meeting staff reported back on their activities. They were asked to reflect on the project and bring:

- a. Evidence of children's/pupil activities
- b. A written brief summary from individual establishments on their reflections

Reflections included:

- a. Comparison of the plan (developed in January) with what they actually did - What did they actually do? Did they have to change their plan in any way? If yes how did it change and why?
- b. How did it go? What were the challenges? What were the benefits? What went wrong? What went right? What were the barriers? What were the facilitators?
- c. Did it differ from normal practice? If yes what was different?
- d. If they were to do this again would they do anything differently? If yes, what and why?
- e. Did it achieve what they wanted it to achieve? Did the activities challenge the most able? Did they identify the 'right' children/pupils? If not why not? Were the pupil outcomes as good as they had hoped for? If not why not?

Case studies: What did the schools do?

One of the main intended outcomes for the projects conducted was that the children would not be limited in their learning and therefore the experiences and knowledge gained during the projects would 'enable staff to extend the development of skills, attributes, knowledge and understanding into more challenging areas and higher levels of performance' (LTS, 2009, pg4). In order to fulfil this, schools sought to create projects that would be of interest to the pupils. The teachers completed groundwork to establish which topic students would find most interesting and what aspects would provide the greatest benefits. There were three levels of students who took part in the projects; Pre-Five, Primary and

Secondary. Age and differing circumstances meant the activities were slightly different in focus to accommodate the needs of the children.

Despite the diversity of the schools and pupils and specific topics chosen, all projects approached the task with a similar structure to one another.

These steps included:

- Identifying which students would benefit from increased challenge
- Choosing who would participate in the project; would this be the whole class or selected High Ability students?
- Finding a topic of interest, linked to curriculum already covered or of the pupil's own choosing
- Exploring existing knowledge of topic, i.e. through discussion or through work
- Narrowing or widening this appropriately, i.e., by focusing on one aspect of a broad topic or by identifying a subgroup of highly able pupils in their class to research a harder topic
- Supporting the pupils learning needs and addressing any challenges that arise, i.e. working in teams, learning how to divide up work within smaller groups.
- Draw on any opportunities to illustrate the learning with a trip, or visit from experts in the chosen area
- Give an opportunity for students to reflect on, and share with others, their learning through presentation to a wider audience

Pre-Five Projects

Three nurseries completed projects that increased challenge in their curriculum. All of the nurseries choose to select a smaller group of highly able children to work with from the larger pool of children available. This strategy worked well in the context of the nursery environment where one worker was able to concentrate on working through the topic with the children, whilst other workers could work with the other children in the nursery.

The selected children helped to decide upon the topic of interest. In one nursery staff observed the types of toys the children were playing with and they then based their topic selection on these

observations, leading to a project on transport. Two of the nurseries choose to investigate transport, whilst the final nursery group chose to investigate the seaside as their chosen topic. The two groups investigating transport chose to narrow down their topics to airplanes and construction vehicles. The airplanes group achieved this by investigating the previous knowledge the children had about transport, and discovering the children had the most knowledge and enthusiasm for airplanes.

*"I want to learn about airplanes because they fly and are my favourite. I like to look at them. They are cool." Thomas**

Whereas the construction group used a simple four piece puzzle about building site vehicles to help choose which vehicles they wished to investigate further.

*"I want to learn more about the red and yellow one because red is my favourite colour. I don't know what it is used for, maybe grit or snow?" George**

All the nurseries worked through a similar formula to the steps listed above, but appropriate to the teaching and learning styles that the children were used to working in. These methods included floor books, pictures, photos and 3D mind maps.

At each stage nursery staff drew on the environment the nursery was in to aid pupils learning experiences, for example, the construction group's nursery was undergoing building work at the time so the children were able to take pictures of the construction vehicles and ask questions about what they saw, they were particularly interested by the numbers on the vehicle.

*"I know these letters. KX61-3. GAP P2. They must have been digging up the road. There is a big hole in the middle and the fence round it so people can't fall in." Lucy**

The Airplanes group drew on one of the children's parents as a learning resource as the parent was working at the airport and they helped to organise a trip to the airport for the children. These examples highlights the importance of drawing on multiple sources of learning and cross-sectional cooperation where possible. The nursery staff leading the Airplanes group also made up a Home Link bag with toys, puzzles, books and games for the children to further their learning outside of the nursery. All the children and parents' reported very positive feedback on this task.

"The planes, the double decker Qantas is my favourite. I haven't been on a Qantas before. I don't like giving the bag back to Isobel." Darren**

"I think it's [the home link bag] full of information, all interesting to 4 year olds, (and parents!)" Darren's Mum

This allowed the children to take more ownership of their learning and to see learning as something that can happen in contexts beyond nursery. The children were also able to develop their research skills as they engaged with the topics through a series of activities involving: using internet search engines such as Bing to investigate chosen vehicles, reading books and comparing and sorting pictures with guidance.

"We found out the names of the vehicles on the internet." Darren

*Talking about a "Spot the Dangers" at the seaside picture. "I see a man jumping off a cliff. He could land on someone's head." John**

All children involved in the projects learned a lot from their chosen topics, not only benefitting from the knowledge gained but also by developing their problem solving abilities and learning how to ask good questions and participate within discussions.

"I have learned about the bulldozer excavator, that's the name of my vehicle, I found that out when I looked at Google. It can make holes to put pipes in under houses." Lucy

What would we take to the seaside?

*"Water because if you don't drink lots of water you will become ill." Mia**

"A special swimming costume so you won't get burned." John



The nursery projects all concluded with a trip, with the staff and pupils groups going to the University of Glasgow to receive certificates of completion from the SNAP team as well as a tour of the museum and building, and the opportunity to complete some further activities within the Museum with the education team there. The children reported feeling very "special" to be invited and receive their certificates.

The airplane group also went to Prestwick Airport to consolidate their learning where they experienced the checking in process and some of the workings behind the scenes with security and the baggage handling process.

*"We checked in at the desk and got our own passes. I felt like I was important." Gemma**

"I got to play security. I kept an eye on the cameras to make sure there was no one doing things they shouldn't." Darren

Primary Projects

Five Primary schools completed projects with students participating from classes ranging from P3 to P7. Three of these primaries chose to work with a smaller selected group of high ability students whilst the other two primaries chose to work with the whole class on the project topic. Both methods resulted in projects being completed successfully, and the different approaches were due to the individual preferences of the teachers and the circumstances within the schools which often meant one approach or the other was more feasible.

One of the primaries working with the whole class chose to complete a project based on 'Dragon's Den' to raise money for charity to complement their term topic of Enterprise. The children in this project were aged 7-8 years old and were given a design brief specifying the limitations of the project including a budget and a theme for the product.

"Our Task: We will work in groups to create an Easter product. We will sell this product to raise money for (charity)" Enterprise design brief

After choosing to create and sell Easter cards the class negotiated a financial loan from their Head Teacher to buy materials to make the cards and as part of these negotiations they agreed a repayment plan with their head teacher. The class then selected their own teams to work in to create the cards that they would then sell. Each team member was given a role from the following list; design director, accountant, marketing manager and presenter. This meant some of the highly able students in the class were left frustrated at times by their peers in their smaller groups and managing these frustrations was an important element of their learning on the project. The group work format also allowed some children to demonstrate exceptional capabilities within their roles and help others within their groups. The result of the project was that the children hit their target of selling 100 cards and were able to give £96 to charity at the conclusion of the work.



Another Primary also used the whole class approach with great success by again complementing their term topic of Bacteria, with a project on Microorganisms. In this instance the teacher divided the class into smaller groups of around four children and selected a group of highly able students to work on the more challenging topic of Vaccines. The children were initially asked about the level of knowledge in their smaller topic area and from this prior knowledge, a set of learning outcomes, including developing a range of social skills such as listening and asking questions, were identified.

*Parasites: "Ticks can give you Lymes Disease. It's a horrible disease." Charlotte**

*Vaccines: "They can save people's lives." Jean**

The children then researched and organised their information before deciding on the best way to present this to the rest of their class. Groups demonstrated a variety of innovative ways to present their information including written reports, fact files, slide presentations, board games, plays and films. The topic was further supplemented by visits from scientists from Glasgow University Wellcome Trust Centre for Molecular Parasitology and a chance to visit a lab at the University of Glasgow to take part in interactive workshops based on their topic.

The pupils invited the scientists back to the school to take part in an open day where the class shared their research with the school, parents and the wider community. The children all benefited from the knowledge gained during the topic and the social skills they developed throughout the course of the project. The creation of a highly able group in particular allowed the children to set high goals for themselves and for the learning objectives for the topic, leading to a high level of success.

The other Primary schools chose to select a small group of pupils to work with on their chosen topics. These groups selected outcomes they would be interested in researching from Health and Wellbeing outcomes. From this, one group chose to look at the factors affecting how consumers think and feel about food products, whilst another chose to research the journey food takes before being eaten and the final group looked at calorie content of different food and which foods are required to be healthy. All groups planned their topics by utilising the Thinking Actively in a Social Context (TASC) wheel which helped focus their investigations.



The consumer group chose some of their favourite food products to investigate: such as raspberry flavoured products, the differences between branded and unbranded ketchups and the differences between 'low fat' products and 'normal fat' products. The groups' investigations led them to write a letter to a large producer about the content of their raspberry products and whilst the group did not receive a satisfactory answer to their questions

it highlighted to them that companies do not always act in the best interests of their consumers.

The children learned a lot of market research techniques such as compiling questionnaires and interviewing different people for their research. They also gained social skills in presenting their project using a range of formats including a pin board format and a PowerPoint style presentation to the SNAP team and other academic staff at the University of Glasgow dissemination event

The Primary school group investigating the journey of food were composed of a small group of P7 pupils and a P6 pupil who were withdrawn from their regular classes to work together on the SNAP project work once a week. Their focus was on how food travels from the source to the consumer and factors that affect this such as seasonality, availability and sustainability. The project was completed successfully with the children presenting their findings arguing towards the benefits of growing your own.



The children reported enjoying working with children of similar ability as it meant they could move on quickly with their work and support each other more readily. However, teachers reported withdrawing students from class meant they missed out on other class work, which the teachers felt was a limitation of separating out a smaller group to work on a focused project such as this.

The last Primary group also investigated aspects of health and wellbeing with a focus on which foods maintain good health as well as the ingredients and labelling of foods. This group consisted of a small group of P7 pupils working together. Teamwork was a challenge in this group with the children finding it hard to cooperate at times, however a positive outcome of the project was that pupils were able to learn how to resolve a lot of these issues themselves. One of the strategies put in place was to complete a list of “jobs that needed to be done” and then signing their name next to the job once it was completed. This resulted in a successful project being completed and presented to the SNAP team at the Primary research dissemination day at Glasgow University.

All Primary school children who took part in the SNAP project were able to participate in a trip to the University of Glasgow where they were able to present their project work not only to their peers, but the SNAP team, teachers, pupils and parents from other schools and other staff at Glasgow University. All children reported enjoying both the project work and the trip to the University. Teachers were particularly keen on this dissemination aspect of the projects reporting that they felt the children really benefitted from the experience.



“I have thoroughly enjoyed the project and so have the children involved. It has given them a great opportunity to visit a University and to aspire to greater things. I think it would be great for all primary schools to have an opportunity to visit a University at some stage.” Teacher involved in SNAP Project

“Extremely worthwhile project and look forward to supporting or engaging with other projects.” Teacher involved in SNAP Project

Secondary Projects

The secondary pupil cohort consisted of students from S3, aged between 14 and 15 years old. The school chose to select specific students to take part in the project as the project was taking place out of school hours and this therefore restricted the student’s availability.. The chosen focus was employability. This was chosen as pupils do not usually explore these concepts until they reach S5 and therefore investigating the topic in P3 would allow the development and exploration of the student’s abilities earlier.

The secondary topic was one of the most structured projects with sessions being delivered in an interactive lecture format.

Now lets look at: Skills and Qualities

- On your own – think about and note answers to the following questions
 - What is a skill?
 - What is a quality?
 - What is the difference between the two?

The lessons were structured in a similar learning style to what the students were used to, with learning objectives stated at the start of each session and these were repeated at the end of the session to consolidate learning. The topic also allowed the students to reflect on their own abilities and realise that success was more than their academic potential.

Learning Intentions: Today you will

- Improve your understanding of how to write an effective personal statement
- How to take notes properly in preparation for interview
- Begin to develop an understanding of how to conduct yourself in an interview.

*"I enjoyed learning about skills such as profession and interpersonal, interview and being able to select the ideal candidate for a job." Callum**

*"I learned how to talk about my skills and qualities and what the difference is between them." Stewart**



The topic then concluded with a trip to the University of Glasgow to experience a University taster day to see what further education would be like for the students. As well as this the trip gave students the chance to practice interview skills in a novel way by getting the pupils to play the interviewer to University staff already established in their career. The pupils were provided with staff CVs and job adverts in advance and they then interviewed Professors, Senior Lecturers, PhD students and senior administrative staff for their own jobs asking questions about their role and suitability for the post. Students were hugely positive about the course and the trip, with the only negative widely reported was that they wished they had more time to work on the project and to develop these skills.

*"I found the visit to Glasgow University extremely useful and interesting. I enjoyed speaking to the students and finding out about her uni life." Lisa**

*“The visit to Glasgow University was very enjoyable and interesting. I enjoyed interviewing someone and getting a tour of the university.” Susan**

Reflections

Staff were asked to state the benefits of the co-ordinated planning meetings. The following areas were identified as important:

- Time to meet others from same Education Authority
- Specific input on high ability
- Time to plan
- Opportunity to build on existing good practice
- Opportunity to reflect on personal views on high abilities
- Reinforce Scotland’s approach to high ability and relevant policies e.g. GIRFEC
- Think – plan – do – evaluate model considered useful
- Links to practice
- Opportunity to develop frameworks which could then be embedded into future practice (i.e. not a once off intervention)
- Theory clearly linked to practice – building on practitioners’ own expertise (beyond a university’s ivory towers).
- It involved all three sectors and provided opportunity for cross-sector discussion and sharing of ideas.
- It provided peer support and contacts across the authority and within the University
- The task was clear and coherent and tailored to individual establishment needs.
- It meant that staff taking part had access to experts who could support and direct them to further resources.

Working together in the planning meetings also allowed the group to identify challenges to this project and to discuss and propose different solutions for potentially overcoming the perceived difficulties.

Challenges included:

- Time
- Back to school to work with people who have not attended the collaborative meetings or engaged in the project
- Curriculum constraints
- System constraints
- Planning for uncertainty
- Managers understanding of high ability and how to challenge practice – organisation, time, resources.
- Maintaining momentum once the initial project is over
 - build on this within establishment
 - build on this within across the authority

These challenges are similar to issues raised in the research literature around effective staff development. Continued working with Education Scotland and CPD providers alongside the embedding of inclusive practice within initial teacher education and beyond may go some way to address some of these issues.

Conclusion

If highly able children are to be supported appropriately then it is crucial that teachers are thinking about them as they plan curricular experiences. An important aspect of this project was engaging staff in the discussions about this particular group of learners. This initial activity gave them the opportunity to explore their own beliefs about these pupils. Access to current research and debate in the field allowed them to examine the myths around highly able learners and to actively think about how their school conceptualise and cater for them on a day-to-day basis. The cross sector approach was also of great benefit as each sector began to better understand the other. There were some surprises for staff, for example, secondary staff noted that many of the skills they were developing were already being addressed in Nursery. They had not always considered the depth of previous learning that had taken place. Similarly primary staff had not thought about the longer term impact of the skills they were developing in relation to the work place and generic and employability skills.

Across all three sectors staff reported that having an opportunity to think about high ability had alerted them to the opportunities for learning that could be developed through Curriculum for Excellence. The importance of interdisciplinary learning, skills development and a commitment to the idea of lifelong learning was demonstrated as each sector reported to the other. This deeper insight into how each sector worked allowed for in-depth discussions and a deeper understanding of how to contribute to a broad general education for all learners in keeping with the principles of CfE.

Staff highlighted the partnership element of the project as important. Each partner employed in the project – University, schools, authority, pupils, parents, outside agencies – worked together to ensure that the learning experiences were appropriate. The bringing together of the various elements ensured that each component was successful and meaningful to the local context.

The Scottish curriculum aims to help every learner develop knowledge, skills and attributes for learning, life and work. The project offers an example of how schools, Universities, experts, parents and pupils can work together to ensure that all learners are offered engaging learning opportunities. A particular strength of this work was the inclusion of a range of learners in the projects. While the spotlight was on pupils who might be deemed to be “highly able”, the result was that a range of pupils participated and engaged with appropriately challenging experiences. While content, texts, outcomes might have varied between learners, the pedagogical approaches adopted were the same for all.

The Scottish education system aims to enable each child or young person to be a successful learner, a confident individual, a responsible citizen and an effective contributor. Highly able pupils must be offered appropriate learning experiences if they are to flourish in life, learning and work.

