ISEB Project Qualification
Guide for Teachers

Contents

The development of independent learning

A primary aim of the ISEB Project Qualification is to help pupils develop their capacity for independent learning. The ability to manage the learning process for oneself is of value both as a way of enriching the learning process and also as a means of helping to equip pupils for future work and study, where the ability to make project-management decisions, carry out independent research, develop creative ideas of one's own and reflect on one's own performance will be valuable transferable skills.

Educational research supports an approach in which pupils are taught skills and provided with a framework ('scaffolding') to help them begin the process of learning for themselves. An approach in which pupils are simply left to discover things for themselves, without any guidance or provision of a framework of foundational knowledge, is unlikely to lead to successful outcomes. Most pupils are not innately independent learners; the ability to learn independently needs to be taught.

In the model of learning described in the specification, it is assumed that pupils will work with a project mentor, whose role is to facilitate their development as independent learners. The work of the project mentor will change over time, as the pupil's ability to carry out independent learning develops. There should be a phased transfer of responsibility for the learning process, with more direct instruction at the initial stages of a programme and more independent learning towards the end.

Teaching Project Skills

As project skills need to be taught, school may wish to include a series of preparatory skills development activities and smaller-scale projects to ensure that by the time pupils embark on their ISEB Project Qualification, they have had the opportunity to develop their project-work skills.

One model for this is to use lesson and study time during years 5 and 6 for pupils to work on small-scale project activities. These can be as brief as a single lesson in which pupils are expected to choose a question or challenge (perhaps from a list of suggested titles), to which they respond by researching and developing their own ideas. Examples of small-scale projects include:

- What makes a hero? Consider 3 people who you would regard as heroes and use their stories to draw conclusions about what makes a hero.
- Create a news briefing for an event at your school during the past week.

- Planning a tour guide for aliens. Aliens have landed and ask you to take them on a world tour. Where would you go?
- Are robots the future? Find out what robots can and cannot do. What will they be like in the future?
- Make a video exploring what your school could do to become more energy efficient.

Project work carried out in response to assignments such as these can help to develop project skills, as well as to suggest ideas that pupils may choose to develop further when working on their ISEB Project Qualifications. The skills which pupils should develop as part of the preparation for ISEB Project Qualification work include the following:

1. ***Research skills***
   In their ISEB Project Qualification, pupils are expected to learn by finding out. They will need to be taught how to access suitable source material and how to analyse sources in relation to their project question or project challenge. They will also need to be taught about an appropriate way to paraphrase sources in their own words or to quote them, and how to use references in their work.

2. ***Critical thinking***
   All projects should involve a process of evaluation of ideas and arguments. They should also involve consideration of source reliability. Inquiry projects may also involve handling data and the exploration of counter-arguments or alternative interpretations. Pupils should be taught skills in evaluating information, building arguments, using data, considering alternative ideas and counter-arguments.

3. ***Ideas***
   All projects need to draw on ideas. Pupils need to spend some time exploring the set of ideas that will form the basis of their work. Ideas and inspiration can come from philosophical ideas, especially about ethical questions, subject-specific ideas, or through consideration of how other people have gone about trying to meet practical challenges. Discussion and exploration of open questions can lead into project work. Examples of such questions include:

   - What should we do to make our world more sustainable?
   - What makes something a good piece of art?
   - What is the most important aspect of good design?
   - What makes someone a good ruler?
   - Is sporting success more mental than physical?
   - Is it ever right to tell a lie?
   - Why do we draw maps?

- Do we need to have capital cities?
- Is the past important?
- What is the point of music?

The exploration of ideas can happen through a process of individual study, but it is useful if pupils have some opportunities to join in group discussion at points during the project process. This can include seminars organized using methods such as those developed by the *Philosophy for Children* movement, in which a seminar is led by one of the pupils and other pupils are expected to respond to the ideas that they introduce.

4. ***Skills for turning an idea into a project: technical skills, presentation skills***
   Some projects require technical skills (e.g. drawing, painting, designing, singing or dancing). If the ISEB Project Qualification is to be used to allow pupils to engage in this type of project work, pupils will need to be taught the relevant skills. There are also generic skills, such as skills in presentation, academic writing, referencing and the construction of arguments. Some of these skills can be developed during the project process. For example, it makes sense to teach pupils how to create references during the research stage of the ISEB Project Qualification. Other skills can be embedded in taught lessons preceding the start of ISEB Project Qualification project work.

Case studies of an integrated project curriculum programme

Amberton Prep uses English lessons during years 6 and 7 to help pupils develop their skills in using language for a variety of purposes. In year 6, they engage in a series of writing activities including producing short stories, creating persuasive text for advertisements, writing speeches for a class debate and producing a guide to their school. In year 7, they are taught about the appropriate style of writing for an academic report. They also study critical thinking, learning how to evaluate sources and use evidence to support a point of view. They are invited to choose a topic for their ISEB Project Qualification which allows them to develop and demonstrate these skills.

Bridgeton School uses Science lessons in year 6 and 7 to develop its students' learning of science through inquiry. They engage in a series of short investigative projects, during which they learn how to write hypotheses, design experiments, gather and analyse data. In year 8, they are given a list of topic areas to choose from, including motion, energy, life and matter. They choose a research question and explore it by carrying out an experiment, designed in discussion with their teacher, using supplementary data gathered from online sources. They write up their work in the form of a report, including discussion of what their data means, and a review of the success of their experiment. They produce presentations containing an outline of their topic, experimental method, data, analysis and review.

Coalville Prep School has decided to create an integrated programme of study in the humanities, using themes that encourage cross-curricular thinking and with assessment through the creation of a portfolio of project assignments. In years 5 and 6, pupils explore the themes of 'My space', 'My time', 'My values' and 'My identity', for half a term each. In each half term, these themes are explored through lessons taught by History, Geography and Religious Studies teachers. Pupils are set assignments including poster presentations, booklet production, and oral presentations. In year 5, pupils are asked to choose from a list of project titles suggested by their teachers. In year 6, whilst suggestions are made, pupils are also free to propose their own title. In year 7, pupils are taught skills in source analysis, essay writing and data handling. They are asked to identify a group of people to study, with the expectation that they will include historical, geographic and religious perspectives in their study. They are given the option of presenting their study in the form of a written or creative outcome. In year 8, they are asked to choose titles and formats for their ISEB Project Qualifications. They are expected to include perspectives from each of the humanities subjects they have studied.

One and two term ISEB Project Qualification programmes

A typical one-term ISEB Project Qualification model would include two lessons per week over an 8-week period, with some homework time, to make up a 15 - 20 hour block of time for project work.

One-term ISEB Project Qualification Programme	
Weeks 1 – 2	Explore ideas for projects Choose project title Begin research
Weeks 3 – 7	Complete research Project development Conclusions and reflections
Week 8	Presentations

Spread over two terms, the ISEB Project Qualification could be completed using 16 lessons at a rate of one lesson per week.

Two-term ISEB Project Qualification Programme		
Term 1	Weeks 1 - 3	Explore ideas for projects Choose project title Begin research
	Weeks 4 – 8	Carry out and complete research
Term 2	Weeks 1 - 5	Project development
	Weeks 6 - 8	Conclusions and reflections Presentations

Choosing Project Titles

The choice of project title plays an important role in determining the success of a project. When discussing titles with pupils, it is important in the first instance to allow them scope to form their own ideas. It may be appropriate as part of the preparatory programme prior to the ISEB Project Qualification itself to set projects with prescribed titles, or prescribed topic areas. When beginning the ISEB Project Qualification itself, however, the project title for the ISEB Project Qualification should be chosen by the pupil, in discussion with their mentor.

It is rare for a title to remain the same throughout a project. In fact, a hallmark of a successful project is that the title undergoes a process of refinement as the pupil's knowledge and understanding of a topic area grows. A corollary of this is that the mentor need not be overly concerned if the initial suggested title looks unpromising. Modification of titles can happen during the first few lessons of project work, as a result of conversations between mentor and pupil.

A number of criteria can be applied, however, at the outset, as a way of testing the viability of a title.

***Is the title open-ended*?**
Titles should take the form of an open question or practical challenge with alternative possibilities. If the question is closed, or the practical challenge allows for only one developmental pathway, there will be limited scope for the development of skills in analysis, evaluation and the critical assessment of alternative ideas. By contrast, an open question calls for thought about the merits of different possible answers, and an open practical challenge allows scope of the exploration and evaluation of alternative responses to the challenge.

Is the title interesting?
Project work offers the opportunity for pupils to engage deeply and thoughtfully with things of interest to them. It is difficult to sustain motivation for project work which extends over a period of several weeks if the pupil has only a passing interest in the project. When they are deliberating about their choice of title, encouraging pupils to choose questions or challenges that they can see they would enjoy engaging with is a good way of making it more likely that the project process will end with a pleasing outcome.

The pupil's interest can be sparked by the mode of presentation of the project as well as by the topic. They may not find much to delight them in the study of the history of the wool trade, but they might enjoy the opportunity to create an online tour guide to a local 16th century wool merchant's home.

Is the subject matter accessible?

Successful projects involve pupils finding a topic that is simultaneously accessible whilst still challenging. When titles are being chosen, mentors should monitor questions and challenges and assess whether the level of demand is realistic. One indicator that a title is too difficult for a pupil is the failure to find any accessible resources. Another indicator is a lack of progress in the first few weeks of the project; in a case like this, advice to modify the title to make it more tractable may help the pupil to regain momentum.

Is there a wider-world application?

Part of the purpose of project work is to orient pupils towards questions and challenges that arise in the wider world. Ethical questions provide a rich source of project titles. When pupils are choosing a creative outcome for their ISEB Project Qualification, having in mind a real or hypothetical 'end-user' of whatever they plan to create or produce can help to provide clarity and focus to the project process. A project that involves working out what steps a school can take to reduce its carbon footprint, for example, has an evident application and allows scope for genuine research.

Guidance for project mentors

Tracking pupil progress on a spreadsheet can assist in helping to ensure that pupils keep up momentum. Tracking may involve no more than a brief comment about the progress achieved since the last discussion with the mentor (e.g. '150 words written – progressing well') but on occasions when significant decisions about the direction of the project need to be made, or where there are significant new tasks to carry out, more detailed comments may be provided and recorded, (e.g. 'Sarah has decided to prepare a questionnaire survey. I have suggested that she looks at some online guidance to help children create good surveys').

The project process divides up into a sequence of stages that correspond to the assessment objectives. Pupils begin by exploring ideas, settling on their choice of project question or practical challenge, then defining terms. This process of definition will involve initial research. Research continues, with the aim being to review sources, rather than simply collect information. Pupils should be encouraged to explore the meaning of source material and evaluate its relevance to the project, as well as to consider the reliability of the sources they have chosen. A process of discussion and development follows, in which pupils respond to their research material, putting their own ideas forward and considering alternative ideas. The project process concludes with reflection and presentation of the work.

To assist pupils, the Project Checklist and Record provides a scaffold for the project process. It is designed to be filled in during the planning, research, development and reflection stages of the project process, so as to provide an ongoing record of the development of the pupil's ideas and research findings.

Mentors should discuss the project with pupils at each stage of the process. Guidance can be given, with the proviso that, as the project process unfolds, the pupil is expected to become more independent. So, for example, it would be appropriate to discuss suggestions for initial areas of research and ideas that could be explored in the development process, but it would be expected that the pupil would then explore these for themselves. A hallmark of success is that final presentations show that pupils have successfully developed knowledge, skills and ideas for themselves.

The Pupil Feedback Sheet is provided as a means for teachers to give constructive feedback to their pupils.

Stages of the project process

Project Stage	Activity	Approximate length
Define	Initial research to explore ideas. Selection of project question or practical challenge. Completion of the project planning document.	100 words (or 1 slide)
Research and Review	Selection of sources. Review of sources in relation to the chosen question or challenge. Source evaluation. Reference construction.	500 words (or 5 slides)
Discuss and Develop	Formulation and statement of the pupil's own answer or solution. Evaluation of the strengths and weaknesses of alternative answers or solutions.	500 words (or 5 slides)
Reflect	Reflection on the project process. Discussion of lessons learned and possible alterations.	100 words (or 1 slide)
Present	Presentation of project. Question and answer session.	5 minutes

Case studies

Promoting girls' cricket

Emily, a year 8 pupil, has been enjoying going to extra cricket coaching sessions at her school and decides to set herself the practical challenge of promoting these to other pupils. She considers alternative possible ways of doing this, before deciding to create material to go on the school's website to provide information for other pupils and encourage them to join in. She looks at examples of other efforts to promote girls' cricket. She also researches to find guidance about designing effective web pages. She interviews her coach and fellow pupils. She collects match photographs and lists of fixtures. She assembles her research and a series of designs in a scrap book and annotates these to show the development of her design ideas. With assistance from the school's IT department, her final design is uploaded to the school's website. For her review, she

sends a survey to fellow pupils to find out whether her project has changed their mind about girls' cricket.

The problem of plastic pollution

Jess is worried about the problem of plastic pollution. She decides to use her ISEB Project Qualification to explore different solutions. She researches news articles and watches documentaries. She decides to organise her project around 3 questions: What can the government do? What can local councils do? What can individuals do? She sends emails to her local MP and borough councillor asking for their views, and interviews friends. Having gathered information, she summarises the positive and negative points of each way of addressing the problem before drawing some conclusions of her own. She prepares a slideshow and gives a presentation to her class.

Stop motion animation

Ben and Joshua enjoy doing stop motion animation in their spare time. In their History lessons, they have been learning about medieval siege warfare. They decide to produce a stop motion animation film, using Lego figures, that could be used in a History lesson to illustrate how sieges work. They interview their History teacher then carry out some research to find out about the weapons that were used and the stages in a siege. They watch videos of other stop motion battles to get ideas. They plan their film using a story board and experiment with different arrangements of lighting and positions of the camera. As part of the review of their project, they ask their History teacher to incorporate the film in one of her lessons and ask the class whether it helped them to understand the topic.

Charity cake sale

Jamie has decided to use his ISEB Project Qualification to organise a stall for his school's charity cake sale. He researches recipes and techniques for cake decorating. He also looks at examples of successfully designed stalls and interviews friends and their parents to decide what cakes will sell best. He develops his cake-baking skills in his food technology lessons, recording notes in his project record. He takes photographs of his stall and interviews customers. He makes a slideshow explaining what he has learned through his project and reflecting on what he could do differently next time.

Improving sporting performance

Megan has decided to use her project to see if she can improve her netball skills. She interviews her coach and carries out some research to find ideas for drills and exercises. In consultation with her coach, she plans a training programme. She videos herself practising before and after she begins training, so that she can compare the speed of her passing and the accuracy of her shooting. She summarizes her research and development work in a slideshow, which she presents to the rest of her team.

Making a video

Jack decides to make a film about how his school could become more environmentally friendly. He researches online to find examples of what other schools are doing. He watches films about environmentally friendly schools and makes notes about how they were filmed. He films interviews with his school's Bursar, his tutor and two of his friends. He makes a storyboard, then assembles his clips into a video using software recommended by his IT teacher. He makes a slideshow about how he produced his film and shows both the slideshow and his film to his PSHE class.

Scientific investigation

Rosa enjoyed a lesson when the class was studying crystals. For her ISEB Project Qualification, she decides to investigate the factors that affect crystal growth. She asks her science teacher for guidance and reads about the theory of crystals. She looks online to find experiments for growing different sorts of crystal. She plans a series of experiments, carries them out and records her observations. She prepares a report summarizing her aims, methods, results and conclusions. In her presentation, she also reflects on what she would do differently next time.

Cultural investigation

In her humanities lessons, Catherine is asked to choose to study a particular part of the world. After doing some initial research, she decides she would like to study the Yagua people of Peru and Colombia. She carries out research to gain some understanding of their history, geography and religious beliefs. Her research leads her to explore whether the Yagua culture will survive and she decides to use this as the central question in her project. She writes up and illustrates her work in the form of a booklet. She makes copies for other pupils in her class and prepares a short talk explaining her main findings and the conclusion she has reached.

Developing performance skills

Sophie has been attending ballet classes after school. In her PSHE lessons, the teacher tells them that they will be studying the topic of friendship. Sophie decides to work with her friend Bella to create a dance about friendship. They watch videos about expressive ballet and search for guidance about choreography. They experiment with several different pieces of music. They show their dance teacher their routine and discuss how it could be developed. They perform their dance as part of a year group show for parents. They prepare a slideshow in which they explain the ideas that influenced them and the process of creating and developing their performance. They reflect on the lessons they have learned.

Ethical study

Harry is concerned about animal welfare and climate change. He decides to use his project to explore whether we should all stop eating meat. He carries out research into farm animal welfare standards and the impact of food production on carbon dioxide and methane gas emissions. He interviews his science teacher and the head of catering at his school. He writes a review of his research and a discussion section, in which he explores arguments for and against eating meat. He draws conclusions, writes a reflection on what he has learned, and prepares a slideshow in which he summarizes his main findings, arguments and conclusions for the rest of his class.

Example titles

- Can I promote girls' cricket by making a webpage for my school's website?
- What is the best solution to the problem of plastic pollution?
- Can I create a stop motion animation to illustrate how sieges work?
- Can I organise a stall to raise money for charity at our school's cake sale?
- Can I research and develop a training programme to improve my netball skills?
- Can I create a film to show how my school could become more environmentally friendly?
- What factors affect the growth rate of crystals?
- Will the culture of the Yagua people survive?
- Can I create and perform a dance exploring the theme of friendship?
- Can I create a film to show the environmental impact of eating meat?