



Scottish Baccalaureate in Social Sciences

Exemplar 2 - “How can ICT be used to promote learning and memory by scheduling the spacing of revision sessions?”

Grade A

Social Sciences: Interdisciplinary Project

Proposal

Candidate name	Amina Kundi								
SCN	9	8	7	6	5	4	3	2	1
Centre name	McCleod Secondary School								
Assessor name	Paulo McKone								
Project title	How can ICT be used to promote learning and memory by scheduling the spacing of revision sessions?								
Project outline (<i>what it is you want to do and how will you go about it</i>)									
<p>I will research the role of schedules in memory, in particular the use of 'the spacing effect' in scheduling revision sessions to take in new information effectively. I believe that computer resources such as apps and smartphone reminders present a useful modern way of scheduling learning, so I will research available apps, propose new strategies which could be developed, and present my findings to younger pupils. This will be of use in both education and the workplace.</p>									
Reasons for choosing this project (<i>eg personal interest, future plans, links to other subjects you are studying/ have studied</i>)									
<p>I have a strong interest in memory as I hope to study Psychology at university. I am also studying Business, and I am interested in how new technology such as apps are marketed, especially to younger people. I plan to follow a career in teaching so the project will have direct relevance to this. I studied Standard Grade Computer Studies, so I have a good understanding of the internet and computer programs.</p>									
The broad contexts this project will cover are									
<input type="checkbox"/> Citizenship <input type="checkbox"/> Enterprise <input type="checkbox"/> Employability <input type="checkbox"/> Economic development <input type="checkbox"/> Sustainable development									
Learning environments I will access are									
<p>I intend to contact the Department of Psychology at the University of Strathclyde to obtain specialist information on human memory. I will also carry out research using the Internet and the school library. I am planning to design a questionnaire and conduct a survey online to find out about pupils' learning habits, and to conduct a lab experiment on the spacing effect with the support of teaching staff, using a school classroom. I will seek advice from ICT staff regarding options for internet/smartphone applications, and search for existing apps online. I will show my independence of thought and action by using these separately from any class or teacher support.</p>									

How I will use my knowledge of Social Sciences

My studies of memory as part of Higher Psychology will be useful preparation. My knowledge of business will be useful in evaluating the potential market of a revision app, and the two combine in that marketing involves persuasion and affecting people's thoughts and beliefs. My understanding of computer studies from Standard Grade will also be relevant in considering the practical options which could be put in place to make use of memory strategies – a theory which most people are not aware of could be developed for everyday revision using a phone, laptop or PC.

The skills I will develop and/or improve in the course of this project are:

(carry out a short analysis of your current strengths and weaknesses in the skills areas below and how you think your project will allow you to develop and/or improve these skills)

- *application of subject knowledge and understanding*

Making links between subject knowledge and real-world applications is one of my strengths, although I do not always think of all of the possible ways things could be applied. The application of knowledge of psychology to learning is a key aspect of the project, so I envisage that I will be able to use and develop my current skills in this area.

- *research skills – analysis and evaluation*

I feel that my research skills are fair, but rather limited to the likes of the internet search engines and textbooks. I need to expand my ability to find out about research studies in memory, and I will take advice from library and department staff on how best to do this. My ability to read, organise and summarise information is at a good level, but I sometimes forget to consider the weaknesses/limitations of research – I will make a point of doing this, and hopefully develop this thinking skill.

- *interpersonal skills – negotiation and collaboration*

I think I am good at developing relationships and talking with others of my own age, and I will develop my ability to organise a group and to show sensitivity to others during the practical research in this project. Contact with experts at the University will be a challenge – I find such contact quite intimidating when face-to-face, so I will make contact via email, at least to start with, and develop my confidence through experience.

- *planning: time, resource and information management independent learning*

I am generally quite realistic about timescales, but I tend to leave too much work until the last minute. I will tackle this problem by setting weekly targets, and hopefully develop better time-management skills for my future studies and career.

- *independent learning – autonomy and challenge in own learning*

I view this as the most important part of the bacc project; though I will use others'

information and help, I will primarily be working by myself to run this project and answer the question which I have set myself. Independent learning is something that is absolutely essential for university and the world of work so I am looking forward to enhancing these skills.

- *problem solving – critical thinking: logical and creative approaches*

I believe my project encompasses creativity in terms of the proposal for new computer-based methods of learning, but there is also a logical process that needs to be followed in terms of the application of psychology research. I will encounter problems in identifying suitable options e.g. for an app, and, as previously mentioned, I hope to be able to overcome them with advice from school staff.

- *presentation skills*

As part of the project, I will present my findings to pupils in the year below me at school, in the hope that a better understanding of memory strategies and an awareness of how to practically use these strategies will help them in their exams. This is a challenging prospect, but one which will boost my experience of giving presentations to an unfamiliar group. I have not yet decided whether to do this as a talk, a powerpoint or a short film.

- *self evaluation – recognition of own skills development and future areas for development*

My experience of independently finding out about science research is very limited, so I will look to school staff for advice. Evaluating any mistakes or wrong turns will greatly help me in the future in everyday life and similar work, as I need to learn not to make them again. As my project involves working with both staff and pupils, evaluating my progress will tell me much about my ability to organise my research and cooperate with others, lessons which will be very valuable in all areas of the future. To help with my self-evaluation I hope for feedback from the professionals I will be working with.

Assessor feedback to candidate

Your project proposal is detailed and shows a well thought out idea broken into clear steps. It is logical, and clearly has a practical application. I am concerned that conducting both a survey and a lab experiment may be too time-consuming and could provide so much information that it becomes difficult for you to present it succinctly in a powerpoint. It would be best to focus on one or the other.

You have thought well about how you can draw on your different subjects and the project combines your interest in psychology with ICT. You mention business, and it would be good to see you develop this idea further – can you analyse how an app could be suitably marketed and distributed to pupils around the country and beyond?

Your analysis of the skills involved is good and you seem to understand what is expected and what you may gain through the project. Time management will be a big issue and you will need to consider how to organise yourself to meet the deadlines. As we have discussed, it will be important for you to conduct your background research soon, and not to let this process drag on.

Well done on an interesting and coherent project proposal.

Proposal approved		Further work required	
Candidate signature			Date
Assessor signature			Date

Social Sciences: Interdisciplinary Project

Plan

Candidate name	Amina Kundi								
SCN									
Centre name	McLeod Secondary School								
Assessor name	Paulo McKone								
Project title	How can ICT be used to promote learning and memory by scheduling the spacing of revision sessions?								
Is this a group project? yes <input type="checkbox"/> no <input type="checkbox"/>									
If a group project my individual role or responsibilities will be:									
Timescales (<i>this should be a detailed timeline and any separate spreadsheets or charts should be included as evidence</i>) Late September to late February - see detailed timeline (attached).									
Planning (<i>how you are going to meet the agreed objectives of your project</i>) a) Identify background research on memory and the 'spacing effect' Use library resources and research websites, with guidance from teachers/librarians about the most suitable sources to use. I have found out that the school library has a link with the University of Strathclyde, so this may help when looking for research articles. b) Seek advice from specialists at University Make contact with a local university via email, and try to arrange an appointment to discuss my findings and research plan in person or over the phone. As my school already has links with Strathclyde, I will contact a researcher from that department to begin with. c) Conduct an experiment into memory Find a sample of approximately 20 senior pupils; prepare materials based on learning definitions from social science subjects, compare memory for spaced versus non-spaced learning. d) Investigate apps which can be used to organise learning Speak to school ICT staff about apps and other computer-based solutions to help space revision effectively. Search app stores for commercially available apps. Make a proposal for how ICT can help pupils to benefit from the spacing effect.									

e) Present findings to younger pupils

Put together a presentation, with a simple summary of the memory research and my findings on the ICT solutions. Speak to head of S5 to arrange a day when I could give the talk – perhaps at the end of assembly.

f) Evaluation

Complete both evaluations and submit to the assessor by February, in order to have it done before my H and AH coursework is due.

After advice from teachers, I have decided that doing a survey of learning strategies is not really necessary and would be too time-consuming. It's not necessary to find out what strategies they use because it is reasonable to assume that they use the same strategies as people in my year used for their Highers.

Resources (*eg people, materials, places*)

My main resources will be the reading materials that I use for background research in this specialist area, and I will also rely on the guidance of school staff and, hopefully, university experts. I will draw on the knowledge of school ICT staff who understand apps, the internet and computer programmes better than I do. I will also rely on the willingness of fellow pupils to take part in my experiment. I will use the internet both in school and at home to find suitable background research, as well as using the school library and possibly the university's journals. I will use computers to prepare a presentation.

Research methods (*eg contacting companies, surveys, focus groups, experimentation*)

I will use the following research methods:

- Books/journals, including web-based journals. The background research is a major part of this project, as it is pointless to conduct an experiment or make recommendations if it is not based on scientific findings.
- Subject specialists. I will hold meetings with school staff and a university faculty member.
- Lab experiment, using a spare classroom as the lab. A comparison will be made between two groups of approximately ten S6 pupils, one of which will be shown materials using the spacing effect, and the other forming a control group.

Presentation

- **Who do I think will benefit from listening/reading/looking at my presentation of my project findings/product?**

The main people to benefit will be my fellow pupils, who can use the insights from my project to do better in their Higher exams. The teachers in the school may also benefit, as they will be able to give better revision advice – based on research – to their pupils.

- **What methods are appropriate to my audience(s)** (*eg demonstration, presentation software, websites, oral, report, piece of theatre, dvd, wiki/blog or any combination*)

A purely verbal presentation may be boring for the pupils in the year below me, so I will use visual aids such as printed pictures/graphs or preferably a powerpoint. If time allows, I can make a short film.

Dependencies (*what is required for your project to go ahead ie reliance on other people or resources, steps in plan that must be completed before starting the next step*)

It will be essential for me to find the time to conduct background research before I speak to university staff, so that I can get some advice about whether I'm on the right track. Ideally I will have this feedback from staff before I plan and run the experiment, but if not then I will discuss my plans with school staff. The aim is to conduct a pilot study before running the full-scale lab experiment, in order to test that the materials work properly and are not too difficult for the learners. The laboratory research needs to be conducted before I can do the presentation, because I plan to put graphs with the findings into the presentation. I need to find out what apps are currently available before I make suggestions for new apps/strategies that could be developed.

Contingencies

Any anticipated problems

The background research may be complicated and hard to understand.

Unable to access some websites or journals.

The university contact may not reply or may be out of the university.

My plans for overcoming the anticipated problems.

Print out the studies and take them to my psychology class to discuss with the teacher at the end of class.

Speak to the librarian, or seek help in finding other, similar articles.

Try phoning the main department contact number, or find another suitable contact by looking at university websites to find staff who research into memory.

Shortage of participants for the lab experiment	Offer a reward of some kind such as a biscuit in order to take part. Ask my friends to take part.
Lack of cooperation from the ICT department.	Manage without the advice of the ICT department – speak to friends or teachers who are very good with computers.
The experiment doesn't show what I expect it to show.	Identify what may have gone wrong in the experiment. Explain to the audience that my research is just one of several studies on the spacing effect.
I can't find any apps or programmes which could be used for spacing of revision.	The emphasis in the final part of my presentation will be more on a proposal for a new app rather than a description of current technology which could be used for revision.
Unable to find a suitable time to give the presentation to S5 at assembly.	Speak to guidance staff to see if my talk could be included as part of the Personal and Social Education courses in S4-S5.

Method for recording my skills development and future areas for improvement

I will use the progress log from the bacc support pack, as well as my own more detailed analysis of my conduct and success in each stage of the IP: planning, researching, analysing, presenting and evaluating. I intend to discuss and record all of these areas in the Interim Review I have with my Assessor.

I will get feedback on my background research from school and university staff as I go along, and will therefore be able to adjust my approach if it is not fully effective. Furthermore, I will record my opinions on my own development, independence in organising the project and research skills in terms of summarising the background research and presenting the experimental data – skills I previously identified as key targets. I will do this in the evaluation of my project.

Towards the end of the project I use the self-evaluation section to evaluate the development of my presentation skills as well as the thinking skills which were essential in drawing on my research data to reach a conclusion.

Assessor feedback to candidate

Your plan is detailed, and elaborates your proposal very well. It is a good idea to focus on the lab research rather than a survey, and to consider how the results could be used within your presentation. Your resources and dependencies are all clearly identified, and provide a solid base for this project.

Your timeline is well explained, but I think you should return to your earlier idea of identifying weekly targets, especially as you have previously identified time-

management as being a problem area for you. This could be done on a month-by-month basis. Make sure you consider dependencies when you set weekly targets.

The idea for the lab experiment makes sense, and you have clearly given a good bit of thought about how to run it. You should now think ahead to what data analysis techniques and graphs you will use. From an ethical point of view, you should write a standardised brief and debrief at an early stage.

With some more thought on some details you should be able to successfully complete the planned project. Well done on some very good progress.

Plan approved		Further work required	
Candidate signature			Date
Assessor signature			Date

Timeline

September	October	November	December	January	February
Background research into memory.	Design and prepare materials for memory experiment.	Conduct pilot study of memory experiment	Run memory experiment	Prepare summary of proposals for use of ICT in revision	Give presentation to S5 pupils
Write research consent forms		Begin presentation.	Analyse data and produce graphs.		
Make initial contact with university departments.	Consult with school psych department on ethics of experiment.	Summarise findings of research following uni feedback.	Add graphs of experiment findings to presentation.	Finalisation of powerpoint presentation.	Collate feedback from S5 pupils.
Search app stores (apple, google) to find existing computer-based study planning tools.	Meet with university department to discuss research and plans for experiment.	Discuss options for a programme or app with ICT dept.	<i>(other: begin revision for my prelim exams)</i>	Arrange date to give presentation – speak to head of S5.	Evaluation of project.
		<i>(other: UCAS personal statement)</i>		<i>(other: sitting prelim exams)</i>	

Social Sciences: Interdisciplinary Project

Presentation of Project Findings/Product

Candidate name	Amina Kundi
SCN	
Centre name	McLeod Secondary School
Assessor name	Paulo McKone
Project title	How can ICT be used to promote learning and memory by scheduling the spacing of revision sessions?

How I presented my project findings *(describe in detail how you presented your project findings and explain the choices you have made with regard to your presentation method(s) and audience(s))*

It was decided to use S5 as an audience, because younger pupils would not be able to understand the complexities of my research, and also because many S5s are just about to do their Highers, and can therefore make use of the revision techniques.

I used a powerpoint presentation to present a summary of my findings. This was chosen as a straightforward, easy to understand way of presenting the information. Just a verbal talk would not have been very engaging, and wouldn't have allowed me to show the graphs from my experiment.

First, this included an overview of the background research on the area. The powerpoint then summarised the laboratory research which I had conducted with S6 pupils, showing a small improvement among the group who studied the definitions according to the spacing method compared to the other group. I explained that although the difference was small, it might be greater in a less artificial context.

Finally the presentation described two apps which are available to help revise – SuperMemo and Anki. I also described the reminder strategies which I had devised with help from Mrs Pigeon of the ICT department.

I decided at quite a late stage that it would be useful to get feedback from the audience, so I prepared a very simple feedback sheet asking pupils to rate the presentation from 1-10 on interest and usefulness.

Assessor feedback to candidate

Well done on a carefully prepared presentation, which will have been useful for the younger pupils. Your presentation was a bit hesitant at times, which is understandable – in future it would be useful to rehearse a presentation beforehand. The graphs were clear, although you could have spent slightly more time explaining them before moving the slides on. The section on ICT strategies was excellent – I wonder how many pupils will download the apps you describe.

Candidate signature		Date	
Assessor signature		Date	

Social Sciences: Interdisciplinary Project

Evaluation of project

Candidate name	Amina Kundi								
SCN									
Centre name	McLeod Secondary School								
Assessor name	Paulo McKone								
Project title	How can ICT be used to promote learning and memory by scheduling the spacing of revision sessions?								
How successful has my project been overall? <i>(consider the strengths, weaknesses and learning points of your planning, implementation and findings/outcomes giving examples to support your comments)</i>									
<p>The aim of the project was to find out more about the 'spacing effect', and I discovered that learning is more successful when it takes place at carefully scheduled intervals. I also discovered several theories which explain why this might be the case. Selecting information was hard due to the volume of available research on the area, but this was carried out successfully. I feel that I gained a good insight into the psychology behind successful revision, which I then passed on to younger pupils in the presentation stage of my bacc.</p> <p>I identified earlier that I do not always evaluate the things I read, and meeting with Dr Ebbinghaus of Strathclyde University was helpful in that he showed me that some of the well-known research is dated and very artificial.</p> <p>I used knowledge of the spacing effect to design and run a simple lab experiment on the spacing effect. This used two groups of S6 – one of which studied definitions from sociology three times in gradually increasing time intervals (1 minute, 9 minutes and then 50 minutes) and the other studying them three times with the same interval (20 minutes, 20 minutes and then 20 minutes again). Both groups were then tested with a multiple choice test.</p> <p>I ran a pilot study which showed that the test was a bit too easy and so I increased the number of definitions. The results showed that those who studied at increasing intervals remembered more definitions, with a mean of 14.1 compared to 12.4</p> <p>I researched the available apps for memorising information, and found two in particular which I included in my presentation. It was also very helpful to discuss options with the ICT department, as they showed me how to use internet calendars and reminders on smartphones to help with spacing of revision.</p> <p>The presentation was carried out as planned, and I can state that it was reasonably successful as most pupils rated it as useful and interesting. However, I expect that only some of them will have the common sense to use this helpful technique in their exam revision this year, and most will probably stick to repeatedly reading</p>									

their textbooks, which is known by psychologists not to work.

The whole project was a challenge, but fortunately I got good guidance from the staff and invaluable help from Dr Ebbinghaus. My timeline helped me keep on track of the tasks to be done, although some were much more time-consuming than I expected – for example, writing the materials for the lab experiment.

I learned that while it is important to understand human memory, it is a useless endeavour unless the good ideas can be communicated to school pupils and people in the workplace to help them learn effectively.

How effective were my communication methods throughout the project?

It was very important throughout the project to communicate effectively with staff in the school, in particular Mrs Baddeley of the psychology department and Mrs Pigeon of the ICT department. I tried to be polite, but I am sure that I could have been better at things like answering emails on time.

I communicated with the Psychology Department at Strathclyde mainly by email, because it was quick and easy. It might have been better to use the phone, but I suppose that researchers are rather too busy to make or take phone calls. When I met Dr Ebbinghaus he was very helpful, although I should have probably interrupted at one or two points when I didn't understand what he meant. This is useful experience for next year at university.

It was much harder to organise and run the lab experiment than I thought. I expected it to be easy as the participants were my fellow S6 pupils, but they were at times quite silly and unreliable. My communication was quite clear, however, and they were debriefed for ethical reasons.

The presentation was well received by the S5 on the whole. In retrospect, some of the theory was probably a bit hard for them to understand, but I think they were receptive to it as they are going to sit their exams quite soon. One or two reported that they did not find it interesting, but of course not everybody is interested in learning. Speaking to the whole of S5 made me very nervous, but I think I spoke clearly to the group. In future, it might be helpful to give a handout alongside the presentation.

Is there any aspect of my project that could be taken further? What might my next steps be?

If I'd had more time, I would have conducted a survey to find out about the study methods that pupils use. It would be useful to see how effective the methods used currently are.

The project included a small-scale experiment into the spacing effect. It was artificial in that it took place over only one hour, and it would be useful to do an experiment over weeks, just like real exam revision.

The project discovered that there are a very limited number of apps available. For

someone with the necessary time and technical expertise, it would be useful to see if a simple app could be written and marketed to students.

Candidate signature

Date

Assessor signature

Date

Social Sciences: Interdisciplinary Project

Self evaluation of generic and cognitive skills development

Candidate name	Amina Kundi								
SCN									
Centre name	McLeod Secondary School								
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Project title	How can ICT be used to promote learning and memory by scheduling the spacing of revision sessions?								

In evaluating your skills consider the skills analysis which you carried out at the Proposal stage and how you said you would develop and improve these skills. Now refer to your reflective diary/log/blog and feedback you have received and evaluate how you have developed and/or improved these skills through the work on your Interdisciplinary Project.

Application of subject knowledge and understanding

(Think about practical uses for the Social Sciences you have learned. How did you use your knowledge of Social Sciences effectively to help you carry out various aspects of your project and how it related to your chosen broad context(s)?)

I used my knowledge of memory to help me understand the research into the spacing effect. This and my other experience of social sciences helped me to understand the way that theories and research are structured, and my studies of research methods helped me to plan the lab experiment.

My understanding of business and marketing was useful in assessing the market for revision apps and making proposals for a future app. A limitation was that I was unable to establish how much it would cost to produce and market a new app, but it is clear that it would be useful and popular with school pupils.

Research skills – analysis and evaluation

(Think about the research process. How did you plan, carry out, analyse and evaluate your research? You should evaluate your research methodologies, tools, resources and contacts, data recording and referencing, reliability and usefulness of data.)

A major part of this project was the initial background research into memory. I considered carefully how to access this information, and used a number of sources including articles, blogs and textbooks. I was given guidance from school staff as I went along, explaining to me how to access research using sites like Google Scholar rather than a basic Google search. I increasingly used the index of textbooks to help me find key information. At times my note-taking was not ideal, and I had to go back to look for references again, but I developed a strategy for

taking a note of references and sources on the first page of a ring binder. My research skills have certainly developed.

The data I gathered was reliable, but I realise that the participants were limited to a small group of school pupils, and it may not be possible to generalise the conclusions to other learners.

The laboratory experiment was successful but I learned that it is difficult to manage a large group of peers and make them all stick to the task. I hope that at university level the participant groups will behave more sensibly, but it provided useful experience for me as a researcher in terms of giving clear instructions.

Interpersonal skills – negotiate and collaborate

(Think about how you considered other peoples' views/feedback, discussed issues of concern, reached a solution where needed, adjusted your approach in response to a situation/environment, showed positive self belief and had the confidence to offer and ask for support.)

The feedback of teachers was useful throughout the research process, as it allowed me to identify what was going well and what I had to improve. I also had to be sensitive to my fellow pupils, both in the lab experiment and when giving the presentation. I discussed research that I didn't understand with my psychology teacher, and discussed ICT options for revision with the ICT department in school. I discovered that it is important to listen, as these people have more experience than me and can give good advice.

Approaching university staff was a little intimidating, but I realised that I will need to do this in my future studies. It also required confidence to approach the head of S5 and arrange to speak to his year group at assembly. Overall I think I have significantly improved my ability to approach staff, to discuss problems and to listen to feedback.

Planning – time, resource and information management

(Think about your time management. How did you set targets, monitor/record progress, consider any probable barriers to achievement and take steps to minimise them?)

I was aware before the project that my time management is not always effective, so I produced a detailed timeline, and in also set weekly targets. This was relatively easy to do, and although I missed one or two targets, it provided an overall picture which kept me on track for a February end point. The most difficult aspect was managing issues which were out of my hands, e.g. waiting for people to respond to my emails. I have certainly learned from this experience.

Another demand on my time was the volume of information on the subject. I realised that there is no limit to how long I could spend gathering information on the subject – the original deadlines I had set were helpful in forcing me to bring this process to an end.

One frustrating element is that some articles were very difficult to find online.

Although the librarian was helpful when I was at school, I had to manage by myself most of the time as I did a lot of the research at home. For the most part, I overcame this obstacle by finding alternative sources on the same topic.

I realised that I had not allowed for evaluation of my presentation itself, and therefore put together a simple evaluation sheet quite late on in the process. This problem was tackled reasonably well, but in future it is essential to consider feedback earlier on.

Independent learning – autonomy and challenge in own learning

(Think about how you used your skills to make things happen, took the initiative to establish links with other learning environments/opportunities and looked for challenges rather than taking the easy option.)

The background reading for this project was done independently, and although it was challenging, I enjoyed this much more than sitting in class taking notes. My teacher had advised me that I should complete this stage as early as possible, so I worked hard in the early part of first term to prepare a summary of the research on the area.

I was able to work independently to make an appointment with a university expert, and meet him for feedback on my proposed experiment. I also took the initiative to contact school staff on several occasions, including making an arrangement to give a talk to S5 pupils. It would have been simpler and less daunting to just give a talk to my form class, but I felt that talking to the whole of S5 would be more worthwhile.

Problem solving – creative approaches; critical thinking; logical approaches

(Think about your problem solving skills. How did you generate and explore ideas, use logical and creative approaches, analyse source materials in order to support findings, reflect on problems and possible contributory factors and think critically about possible actions/changes?)

Finding out about the background research and using it to devise an experiment was a logical process, but also required creativity in that I had to find an appropriate design for the lab experiment.

My timeline provided a logical challenge, as certain elements - such as getting feedback on the background research – were best completed before running the lab experiment. Using a table helped me to appreciate the connections between different steps.

I had previously learned that an experiment can be useless if it is either too easy ('ceiling effect') or too hard ('floor effect') and for this reason I conducted a pilot study. This showed that the test was too easy, so the logical steps were either to reduce the task time or to increase the number of items. The latter option was chosen.

I confidently approached the problem of how to implement the psychological principles via ICT, and used a focused discussion with school staff in order to come up with some appropriate ideas. Part of creativity involves selecting among a group

of possibilities, and I was able to choose the suggestions which were most suitable for the audience.

Presentation skills

(Think about how you presented your findings. Evaluate your presentation method(s), choice of audience(s), layout, structure, degree of formality and choice of content. Did your presentation include information/ideas/reflections with supporting detail in a logical order and reach a reasoned conclusion?)

In presenting the findings of my project, it was important to consider the limitations of my audience, as they were only in S5 and hadn't yet done their Highers. However, it was helpful that they were motivated to find out more about revision methods, and for that reason the material was very appropriate for the audience.

The presentation started with several slides explaining the theory of the 'spacing effect', and although this was already simplified, it would have been better to make this bit even shorter. Some of the terminology may also have been a bit too complicated, especially for pupils who have not studied any psychology. It would have been helpful to have a handout, and also to have a more hands-on part of the presentation, allowing them to try it out for themselves.

The information was presented in a logical order, with my own background research followed by my experimental results, and then suggestions for using ICT to improve revision. I think from the response of the audience and teachers that the presentation made sense and was reasonably easy to follow.

Overall, the presentation was an effective way of getting the main ideas across to a large number of pupils.

Self evaluation – recognition of own skills development and future areas for development

(Think about how you have developed throughout your project. How did you deal with feedback, praise, setbacks and criticism and their impact on your own development of knowledge, skills and understanding? To what extent did you ask for feedback, learn from experiences and how will you use these to inform future progress?)

I asked for feedback on my background reading from both my teacher and from the university lecturer who I contacted. This was useful – both were very positive, and I learned that background research is a skill that takes time to master. The most useful aspect of this stage of the project was the hands-on experience of finding research, and dealing with obstacles such as not being able to access some sites.

Conducting a lab experiment with student participants was a difficult task, and although I was concerned that the participants may not have taken it entirely seriously, I realise that this is a typical problem. In future the presentation of the instructions at the start could be improved, giving much more emphasis to how important the research was to my project and my education as a whole. If I study psychology next year at university, I will have a better idea of how to run an experiment.

My thinking skills were developed, as I needed to draw logical conclusions from theory and background research, and also analyse the results of my experiment. I began to appreciate how complicated research can be, as there are so many possible ways of running an experiment.

I also developed my presentation skills, and it was the first time I had given a talk to such a large audience (the audience was the whole of S5 at their morning assembly). I felt some anxiety about this, but focused on trying to speak clearly. If anything let me down it was that some aspects of the powerpoint presentation could have been simpler/shorter, and I will be more aware of this in future.

This section is not mandatory. It has been included to allow you the opportunity to undertake an overall reflection of your project.

Reflection on my experiences throughout this project (*eg things you feel you have achieved, things you have done that you feel particularly proud of, anything you would do differently were you to do something similar in future*)

I am really pleased that I took an area of the study of memory which is not part of one of my courses, and used it to help younger pupils with their revision strategies. Hopefully their improved understanding of memory will help them not just in their studies but in their future careers as well.

If I was to do further research on this area in future, I would like to run short, practical sessions where pupils could try out the technique of spacing their revision, and perhaps follow up on their progress after they sit their exams. I think that this would be a more effective way to check that they are actually using the technique, whereas a presentation simply gives them the information but doesn't encourage them to use it.

Skills that I have used in this project that I would like to develop further (*eg using skills in even more challenging situations, more working on your own, more team working*)

I am pleased that I have begun to develop my research skills, but I realise that there is a long way to go before I have the kind of skills necessary for university-level research.

It will also be a challenge in future to work in a group (as most university researchers do, at least in psychology) because there would be a communication and organisation challenge to doing research as a team – with each person responsible for one part of the background reading, for example. I think I would enjoy doing research in a group, though – communication with school staff during my bacc has shown me that I work well when I put my head together with others and try to come up with ideas.

Social Sciences: Interdisciplinary Project

Assessor Report

Candidate name _____ Amina Kundi _____

Candidate number _____

Centre _____ McLeod Secondary School _____

Project proposal	Tick as appropriate
Grade C criteria	✓
The title and aims of the project.	✓
Clear aims and reasoned arguments to support the relevance and practicability of the project.	✓
Identification of opportunities for:	✓
• own skills development	✓
• collaborative working	✓
• accessing less familiar learning environments	✓
• application of subject knowledge in a broad context	✓
• use of knowledge and skills across different disciplines	✓
• making connections between subject knowledge and the wider world	✓
Evidence of the ability to communicate clearly and concisely in advocating the proposal.	✓
Grade A criteria, includes all of above plus	
Well conceived proposal which sets creative and challenging goals which are at the same time realistic, achievable and practicable.	✓
Robust and carefully argued justification of the proposal.	✓
Substantial links and understanding of possible connections across disciplines contributing to the project.	✓
Comments	
Clearly fulfils all criteria.	

Project plan	Tick as appropriate
Grade C criteria	
Development of clear project objectives in line with the project proposal.	✓
Relevant and detailed planning strands to enable the project to be implemented, monitored, presented and evaluated.	✓
Realistic timescales and achievable milestones for each stage of the project.	✓
Clear identification of resources needed, research methodologies to be used, opportunities for support and feedback.	✓
Grade A criteria, includes all of above plus	
Careful selection and effective use of research/investigation techniques.	✓
Anticipation of probable and possible factors which may impact on the project.	✓
Clear identification of dependencies or reliance on the success of other strands of work and of necessary adjustments to the plan.	✓
Outline the process for achieving own identified development needs.	✓
Comments	
Clearly fulfils all criteria.	

Presentation of project findings/product	Tick as appropriate
Grade C criteria	
Evidence of effective and critical use of — resources, research methodologies, information and time management, prioritisation, problem solving approach to reach objectives, feedback, collaborative approaches, self monitoring.	✓
Application of specialist and interdisciplinary subject knowledge to establish meaningful connections within the broad context.	✓
Clear presentation of main findings/outcomes.	✓
Grade A criteria, includes all of above plus	
Critical thinking, analysis and reflection used at key stages in the project to construct rigorous arguments, draw convincing, well supported conclusions, identify and resolve issues.	✓
Skilful and creative use of resources, including people, information and learning context to progress the project.	✓
Accurate and deepening of understanding through application of subject knowledge in the chosen context, with meaningful connections well established.	✓
Comments	
Showed considerable independence of thought and action during the running of this project.	

Evaluation of project	Tick as appropriate
Grade C criteria	
A critical and justified evaluation of all stages of the project process — planning, implementation and findings/outcomes in terms of strengths, weaknesses and learning points.	✓
Effective use of chosen communication method(s).	✓
Grade A criteria, includes all of above plus	
Incisive, well balanced evaluation of the project outcome against project aims, supported convincingly by well selected evidence.	✓
Careful choice and skilful use of communication and presentation methods(s).	✓
Comments	
Tackled a complex research area with impressive commitment.	

Self evaluation of generic/cognitive skills development	Tick as appropriate
Grade C criteria	
A critical evaluation of own skills development against the list of specified generic/cognitive skills.	✓
A reasoned evaluation of own strengths and key goals for development in the specified list of generic/cognitive skills, which takes account of feedback sought and evidenced from others throughout the project.	✓
Grade A criteria, includes all of above plus	
Insightful, balanced and well structured self evaluation of own development.	✓
Assertive and justified use of feedback from others in evaluation and identification of development areas.	✓
Comments	
Very insightful consideration of strengths and weaknesses, and how skills have been developed.	

The overall grade will be:

- A indicative of a highly competent performance which meets the additional Grade A criteria and consistently demonstrated a high degree of autonomy, initiative and effective information management across the five pieces
- B indicative of a competent Grade C performance across the five pieces, but with some aspects of work meeting the criteria for highly competent performance (as outlined by the Grade A criteria)
- C indicative of a competent performance across the five pieces, with all aspects of the work meeting the criteria identified for Grade C performance

Overall Grade Awarded	A
Additional Comments/Overview <p>I believe that this quite clearly achieves 'A' standard in all the selected areas. The pupils has worked independently throughout, and shown a high level of commitment and motivation in tackling background reading and discussing it with school and university staff. She has considered contingencies with great care, and been meticulous in planning the key stages of the project. Despite her anxiety over presenting to an audience, she has arranged and delivered a very good presentation. Her conclusions were insightful, and will be of genuine practical use to other pupils. She has requested little support.</p>	

Assessor signature _____ **Date** _____

Internal verifier signature _____ **Date** _____