University of Portsmouth

School of Computing final year project

Charles Henry Wray

PJE40

Project Initiation Document

Developing a cross platform tool for learning in a classroom environment

Project Initiation Document

1.   Basic details

Student name:	Charles Henry Wray
Draft project title:	What will the future classroom look like?
Course:	Computing
Client organisation:	Park Community School
Client contact name:	Antony Crowther
Project supervisor:	Haytham Nakkas

2.   Degree suitability

One of the units I am undertaking this year is the Computer Science teaching placement. U26366, in this Unit I spend two days teaching at a school, this will give me the opportunity to get a fully in depth view on the current curriculum and teaching tools in the classroom.

During the second year of my degree I sat the INSE unit, this unit has taught and enabled me to learn about prototyping, testing and developing software and applications. This has given me a good basis for this project and taught me key skills I can carry forward.

During all three years of my degree databases and networking have been key units, this will allow me to collect and process data, during my testing stage and with programming the software project as I will need databases to store information.

Lastly after christmas I will be undertaking the computer interaction design, this will give me key skills in how humans interact with computers, it will teach me what I need to do to make my application more pleasing and give it good useability and workability.

3.   Outline of the project environment and problem to be solved

Who is the client?
Park community college
The client for this project will be teachers and students that want to improve their use of classroom technologies to improve the learning environment.
What do they do?
They Teach or work within the organisation.
What is their problem?
Their classroom tools and learning environments are outdated and a more modern and future proof solution is needed to give students the best opportunity for learning.
Why does it need to be solved?
Because systems are not keeping up with modern technologies and tools that would improve the environment in the classroom. This needs to be fixed. The application can be adopted by other schools or organisations that teach school aged pupils.

4.   Project aim and objectives

What is the overall aim of the project?
The overall aim of the project is to create a system that can be used in future classrooms to improve the classroom environment and enhance the learning of pupils using technology.
What are the objectives in meeting the aim?
Research Old, Present and future technologies.
Research Old, Present and future teaching methods and tools.
Create a link between them and predict what will be used in the future.
Find the limitations of old and present day, create a new model for use in the classroom.
Using that prediction creates a prototype or near working system that will fit the future prediction.

5.   Project deliverables

What information system artefacts will be developed/adapted?
During this project I will create the following artifacts:
- **Prototyping**
  - The prototyping document will include all of my prototypes, designs and iterations for my designs.
- **System**
  - This will be an executable file that is the working system, this is the application and will be handed in as a stand alone item.
- **Testing**
  - My testing for this application will be extensive, and will be a very large, therefore I will have every test done and every stage of testing logged, I will then evaluate and summarise all of the testing stages.
- **Thesis**
  - The thesis will be the main part of the report, this will include everything not already included in any other aspects, this will have information supporting the system.
- **Design specification**
  - Once the research and literature review and secondary research has been completed i will provide a design specification, this will be used throughout the project to go back and reference the current iteration of the design against the specification.

6.   Project constraints

What constraints are there on your solution to the problem?
Whilst I will be able to come to a suitable prediction about future systems that could be developed it will be hard to fully understand what will be used in the future and what other technological advancements would be discovered between now and the prediction, possibly changing what could occur.
Whilst doing the project I will also be working two days a week on placement, this will cut my spare time to work and develop my work in half. This will make the project a lot harder to complete within the given time frame. I will have to make sure my time management is really good and I will need to keep on top of tasks and deadlines.
Another constraint on the project would be my programming knowledge, this will mean that I will need to make sure I know what is needed in each taks and learn the proper way to complete the programming. Ensuring that every task is done well and to a high level.

7.   Project approach

What is going to be your approach?
Literature search
I will start by looking at a number of different classroom software that teachers and students currently use.
What background research do you need to do?
I will need to firstly research into the current and past curriculum within a classroom and any existing software that is used by teachers and students to improve the learning environment.
What methodologies are you going to use?
The Agile software development life cycle model is a combination of iterative and incremental process models with focus on process adaptability and customer satisfaction by rapid delivery of working software product. Agile Methods break the product into small incremental builds. These builds are provided in iterations. Each iteration typically lasts from about one to three weeks.

8.   Facilities and resources

What computing/IT facilities will you use/require?
I may need access to a computer in a computer suite whilst developing my application due to not having the proper applications software or licensing.
When testing my product I may want to use the usability lab to give me the most feedback I can get from my product, this will give me better testing and will allow me to
What other facilities/resources will you use/require? - programming language
I will need to find a suitable development environment to be able to develop a prototype of a future system using present day technologies.
Are there constraints on their availability?
There may be constraints on the useability lab. If I book in due notice and meet my targeted first development deadline then I won't have any constraints on time.

9.   Log of risks

Risk Description	Likelihood of the risk occurring	Impacty of the risk	Severity rating based on impact and likelihood	Owner person who will manage the risk	Mitigating action actions to mitigate the risk	Contingent action action to be taken if the risk happens
Subject Knowledge	Meduim	Medium	Medium	Charles Wray	The mitigation method to stop this would be to make sure that I know the task and have done enough prior research and reading and practice on the topic.	If I get stuck on the task then I will need to either research into methods to solve the problem or ask a peer for support on the task.
Data Loss	Medium	High	High	Charles Wray	the mitigation method to prevent this would be to regularly back up files. and always keep version copies to prevent data loss.	In the event of this happening I will restore the file to the previous version and redo what was lost.
Tracking Deadlines	Low	Medium	Medium	Charles Wray	To mitgate this risk I will keep a tracker of my deadlines and reference my current status against the Gantt chart.	If I dont manage to keep to deadlines I will have to Finish the piece of work that is takijg me a long time and start to focus on other areas.
Incomplete Software	Low	High	Medium	Charles Wray	The best way to stop this from happening is to make sure every module is completed seperately, this will allow the program to run with given moduled not included, allowijg the system to run but with some useability sections missed out.	If this happens then I will prioritise work on that one module until it has been completed.
Sickness	Medium	Medium	Medium	Charles Wray	To maintain a healthy active lifestyle and make sure that if something is to aoccur with health to visit the doctors and get it sorted early.	If ilness is to occur, email the appropriate people and make sure that I apply for an ECF if needed

10.   Starting point for research.

What are the starting points for your research?
The starting point of my research will be looking at past and existing systems used in the classroom environment, this will give me a good idea on the theme of my research and the most probable route I will take for the engineering project.

To do this I will look at the University library discovery website to find literature that would be useful in the initial secondary research. I will also use google scholar to find pieces of literature and reports previously done surrounding the topic, This will be useful as it will give me data and will lead me in what I need to investigate during my research.

11.   Breakdown of tasks - IMRAD structure

Secondary research:
In the research task I will research into the topic and find the best solutions and examples of previous software, I will then take the best and worst from these and develop my own application.

Search strategy:
The following PRISMA diagram was made searching through the university website for keywords, I then narrowed down my search changing the language and dates until i found a reasonable amount of records that I can search through manually, this will help me during my literature review as it will give me an insight into what papers and records I will read.
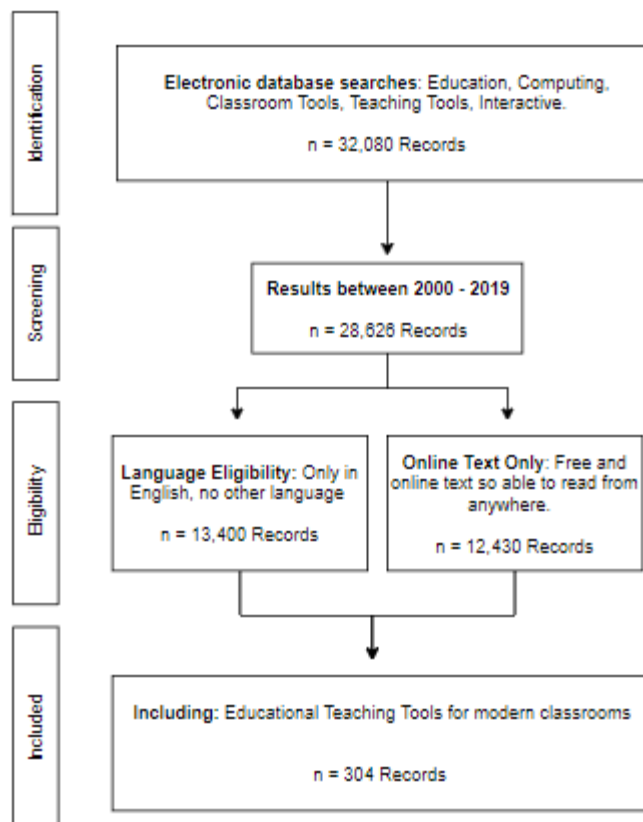
Research summary:
In this task I will recap on everything I discovered in my research and I will then summarise the most important parts and draw a prediction into what the future classroom will look like. Io will also create a design specification from everything researched.

Project Design:
In the project design I will design multiple different applications software, website, web applications and decide which best fits the design specification.

Project Prototype:
I will prototype the project through all stages of the agile modelling process, these prototypes will then be tested and developed on.

Prototype Testing:
Testing the prototypes will allow me to check if the project meets the specification created, each prototype test will be conducted as primary research, this will allow me to ask users what they think needs improving or changing about the program, these answers will then be used to develop the system further.

Project Development:
This will be done from the prototyping and testing of the initial project, the developments will be the improvements from testing at the

Project Testing:
Once I have finished developing the spurt of the project I will then test it against the specification, this will see if what is developed is similar to what is required and initially intended. This testing will be used to go forward into another stage or to summarise the software development stage.
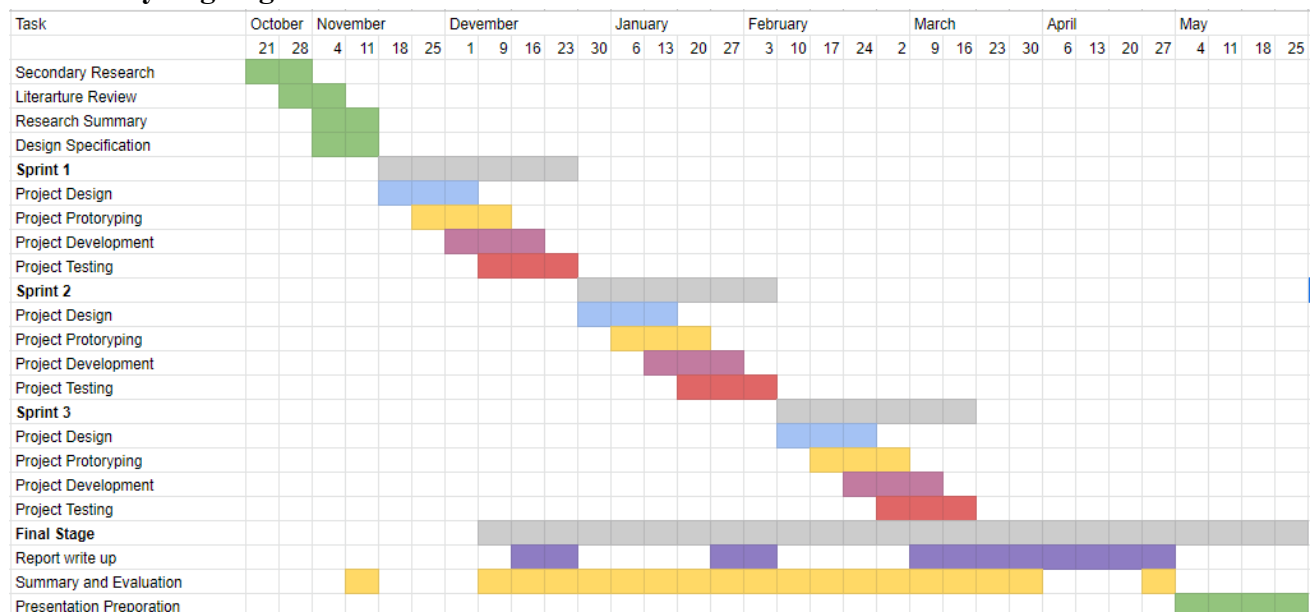
Report Write up:
In this stage I will accumulate everything developed in the project and put it all into one document and write up the conclusion and support text for the development of the project.

Presentation Preparation:
In this stage, I will prepare for the presentation at the end of the project, I will abstract the most important development testing and findings from the project to present the whole of my project.

12.   Project plan

What are you going to do when?

Task	October	November					Devember					January				February				March				April				May			
	21	28	4	11	18	25	1	9	16	23	30	6	13	20	27	3	10	17	24	2	9	16	23	30	6	13	20	27	4	11	18	25
Secondary Research																																
Literarture Review																																
Research Summary																																
Design Specification																																
Sprint 1																																
Project Design																																
Project Protoryping																																
Project Development																																
Project Testing																																
Sprint 2																																
Project Design																																
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Project Development																																
Project Testing																																
Sprint 3																																
Project Design																																
Project Protoryping																																
Project Development																																
Project Testing																																
Final Stage																																
Report write up																																
Summary and Evaluation																																
Presentation Preporation																																

What risks to the success of the project have you identified?
The risks to the success are described in the Risk Analysis section of this report, there are mitigation methods and a contingent action.

What steps can you take to minimise them?
The main steps to minimise the risks are to be fully prepared for anything that may disrupt progression or will stop me being able to complete a task. Good time management will enable me to keep on tasks and make sure that all tasks are completed and a good amount of time was spent on the tasks.

13.   Legal, ethical, professional, social issues

Referencing

I will use many different resources to gain research for my project. These will include the library website, google scholar, google search engine and the library catalogue. Any references I include in my project will be in APA 6th edition style.

Ethical certificate UoP

In order to conduct primary research for my engineering project I will have to identify any ethical considerations that will arise from my research. For each of these ethical considerations I will look at how they can be minimized. I will then submit my idea in order to gain ethical approval. I will not be able to undertake any primary research until I get ethical approval.

Ethical Considerations

One ethical consideration I will have to address is informed consent. I will be getting participants to test every development of my project. This will not be an issue as I will make sure I have informed consent of the participant before they take part. The participants will be given information about the purpose of the research and what their involvement within the research involves. They will be made aware of their right to refuse to participate.

Another ethical consideration is voluntary participation. I will use no incentives to get participants to take part in my research. Once I have contacted the participants I wish to interview it will be their choice whether they take part.

GDPR

When conducting primary research, I will need to make sure I follow the rules set by GDPR and allow for confidentiality within the data collection process. The identity of all the participants who take part in my research will be protected at all times. The research will be kept entirely confidential as only myself as the researcher will have access to their personal information and this information will not be shared in any way which would allow individuals to be identified. The anonymity of the participant will be kept as the participants will not have to state their name, however there may be some demographic questions regarding gender, age and whether they are a student or a teacher, which will be asked at the beginning of the interview. All the individuals who take part in my research will be respected along with their rights regarding privacy and the use of information about them. All of the research gathered will be kept secured and will not be kept longer than it is needed.