1. Initial Requirements Gathering

Surveys and interviews focused on getting initial feedback on the proposal i.e. would the teachers and students be interested in such a product?
(interviews also used survey questions for more in depth responses)

It also focused on getting to know both the students and teachers e.g
- Understanding the level of technological skills the teachers and students have
- What's the class setup e.g. how many students and how many computers
- Do they have access to the proposed technologies.

The following shows a summary of the results gathered by the Google Surveys and interviews.

1.1 Summary of data gathered from teachers

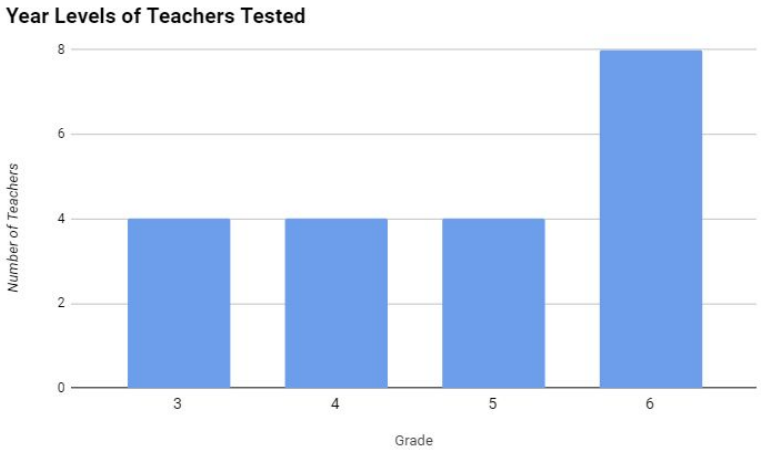

Figure 1: Grade spread of teachers that were tested

How many students are in your classroom?
23-27 students in about each classroom

How many computer do you have access to?
Most classes themselves don't have enough computers do the proposed solution. However teachers can book computer lab sessions at the library that contain on average from 35-40 computers .

What size of student groups works best in your class and why?
Groups of size 2-4.

Key comments:
"Any more than that usually then the class gets to out of hand/noisy, some students don't participate due to the lack of work and they get off track more easily."

" These sizes are best as they are intimate yet still allow a diverse range of approaches/opinions"

What's the best way to deliver learning content in your classroom? E.g. visually or more written material.

Students work best when using visual learning material.
Emphasis was made on presenting colour, interactive and creative forms of learning.
Teachers also said that learning visually off the whiteboard and big display screen were some of the best ways to deliver content to the entire class.

Do you currently teach programming within your classroom?

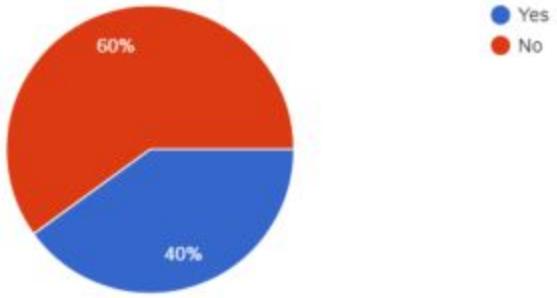

Figure 2: How many teachers currently teach programming

Yes - 60% → Are interested in continuing to teach.
No - 40% → 100% of those teachers said they'd be interesting in teaching programming within their classrooms.

Learning to code isn't a regular class activity.
However they have had exposure through:

- *Scratch*
  Key comment: *"There is a lot of restrictions. This also causes the planned activities to lack variety."*
- *Python Turtle*
  Key comment: *"I am teaching the students turtle (with python) by setting exercises myself and showing examples on my computer and individually helping kids when they run into problems/have questions. It's good that it allows me to address each of the students problems individually but it is a fair amount of work coming up with the problems myself"*
- *Robogals workshops (lego mindstorms)*
  Key comment: *"Students that have attended many workshops have said that the activities get quite repetitive and students lose interest to return."*

Would you be interested in introducing Codeverter within your classroom?
100% said yes they would. They all liked the social learning aspect of Codeverter.

What kind of support would you like Codeverter to provide you? E.g. would you like Codeverter to provide learning material for teachers too?

Key comments:

“My level of programming knowledge is not the best, however I feel comfortable with the level I am teaching to students. I would love to have a tool that had ready-made lessons as it would save me a lot of time in planning the sessions”

“It would be really great for it to give teachers a bit more in-depth material to prepare with before a lesson. I have very little programming experience and think it would be good to be taught by the same tool as the students”

What level of control would you want Codeverter to have? E.g. how much teaching do you want the Codeverter system to take over?

Key comments:

“I enjoy being able to help the kids individually when they having problems but it would be great to have the bulk of the teaching prepared for me.”

“Considering my lack of expertise on this topic it would be great if it could have a high level of control in terms of teaching the content.”

“I'd still like to be an active part of the students learning. I think it would be great if Codeverter acts more of as a tool to support me deliver the content.”

How long and often do you want the programming lesson to be?
On average users said 40-60mins per week.

Would you like Codeverter to provide homework material to students?
100% of teachers said “yes”.

What reward system do you believe would work best in Codeverter?

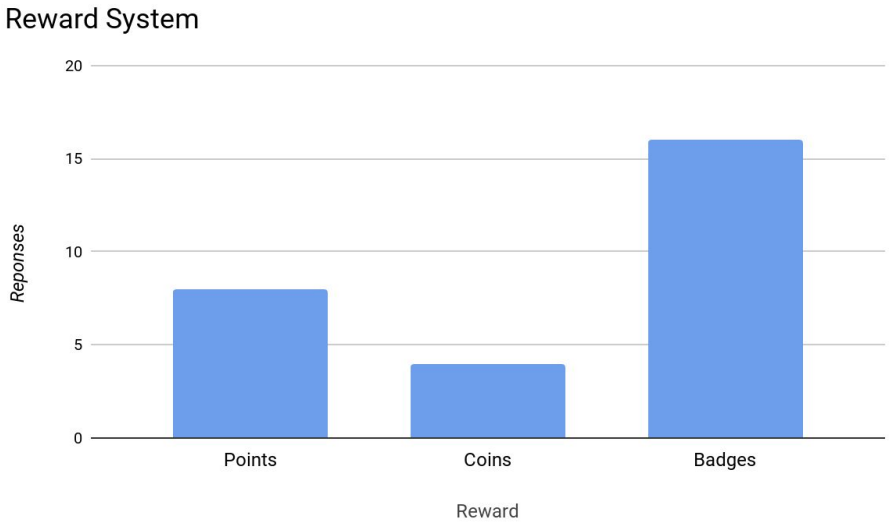

Figure 3: Testing what reward system would work best

Interviews agree with survey results. Teachers/students liked the idea of a combination of points and badges.

1.2 Summary of data gathered from students

What year level are you in?

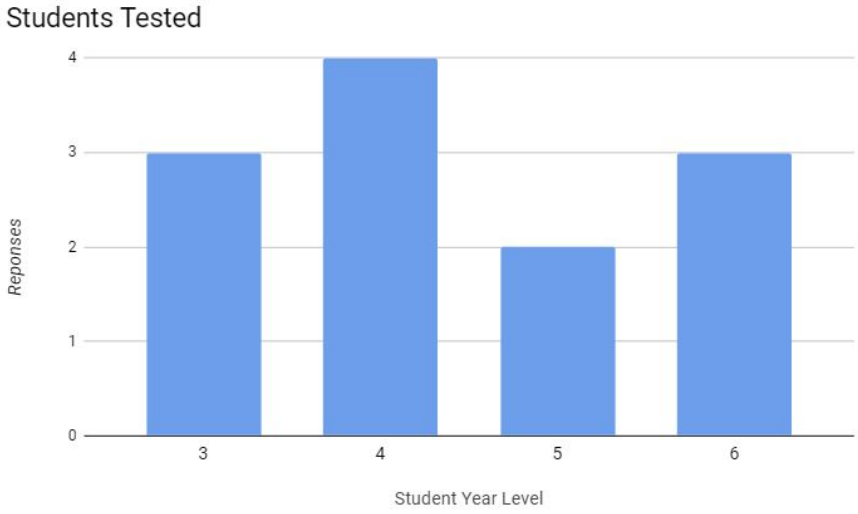

Figure 4: Students tested

Are you already learning how to code?

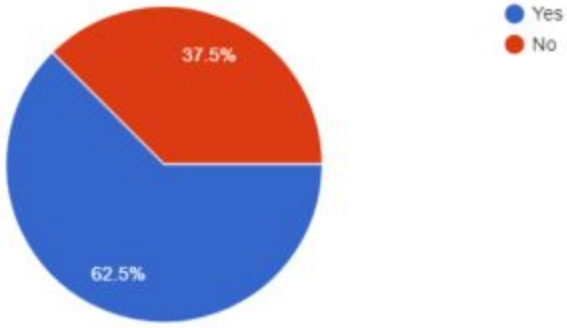

Figure 5: Students who are/aren't learning how to code

Do you enjoy working with computers?

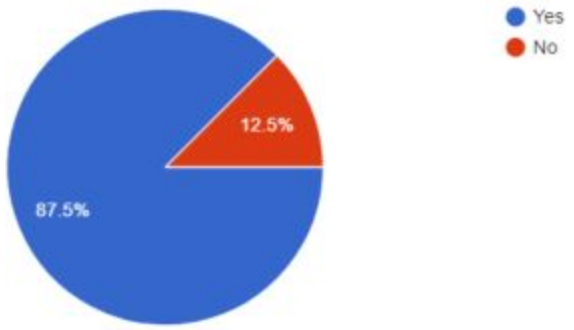

Figure 6: Students who do/don't enjoy working with computers

Do you have access to a computer and internet at home?

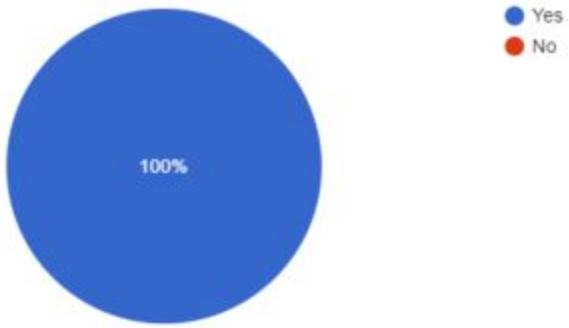

Figure 7: Students who do/don't have access to computer at home

Do you like working in groups or by yourself?

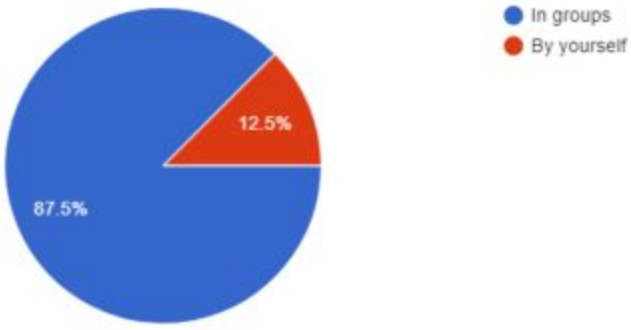

Figure 8: Students opinion on group work

Do you enjoy competing against classmates?

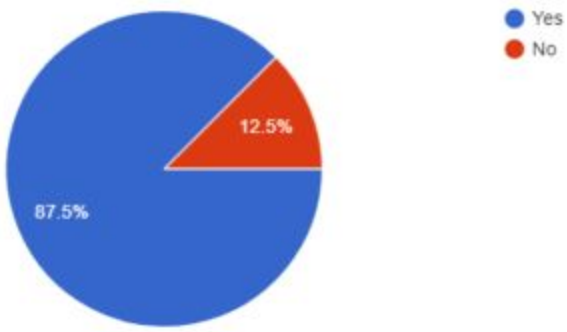

Figure 9: Students opinion on competing