Curriculum and Leadership Plan

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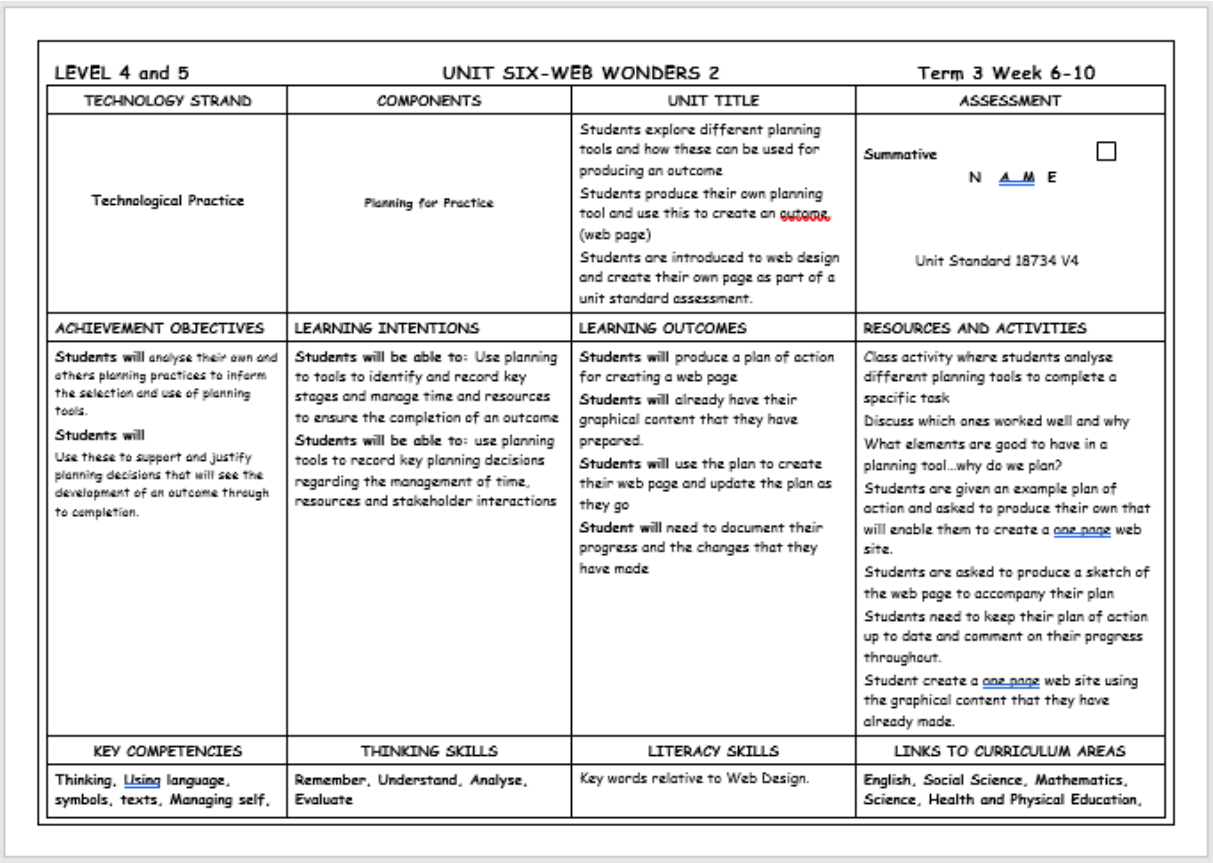
This leadership plan is developed following Kotter's eight-step process for leading change (Manktelow et al.).

Create a Sense of Urgency



LEVEL 4 and 5	UNIT SIX-WEB WONDERS 2		Term 3 Week 6-10
TECHNOLOGY STRAND	COMPONENTS	UNIT TITLE	ASSESSMENT
Technological Practice	Planning for Practice	Students explore different planning tools and how these can be used for producing an outcome Students produce their own planning tool and use this to create an outcome (web page) Students are introduced to web design and create their own page as part of a unit standard assessment.	Summative ☐ N A M E Unit Standard 18734 V4
ACHIEVEMENT OBJECTIVES	LEARNING INTENTIONS	LEARNING OUTCOMES	RESOURCES AND ACTIVITIES
Students will analyse their own and others planning practices to inform the selection and use of planning tools. **Students will** Use these to support and justify planning decisions that will see the development of an outcome through to completion.	**Students will be able to:** Use planning to tools to identify and record key stages and manage time and resources to ensure the completion of an outcome **Students will be able to:** use planning tools to record key planning decisions regarding the management of time, resources and stakeholder interactions	**Students will** produce a plan of action for creating a web page **Students will** already have their graphical content that they have prepared. **Students will** use the plan to create their web page and update the plan as they go **Student will** need to document their progress and the changes that they have made	Class activity where students analyse different planning tools to complete a specific task Discuss which ones worked well and why What elements are good to have in a planning tool...why do we plan? Students are given an example plan of action and asked to produce their own that will enable them to create a one page web site. Students are asked to produce a sketch of the web page to accompany their plan Students need to keep their plan of action up to date and comment on their progress throughout. Student create a one page web site using the graphical content that they have already made.
KEY COMPETENCIES	THINKING SKILLS	LITERACY SKILLS	LINKS TO CURRICULUM AREAS
Thinking, Using language, symbols, texts, Managing self.	Remember, Understand, Analyse, Evaluate	Key words relative to Web Design.	English, Social Science, Mathematics, Science, Health and Physical Education,

Above: Current Year Ten Digital Technologies Web Development Unit (Griffiths, 2018)

Papatoetoe High School is a school with a significant digital technologies curriculum, and a large number of courses that cover a diverse range of topics.

The subject area is split into the disciplines of general, multimedia, programming, and web development. In 2018, there were a combination of year nine and ten classes, along with one NCEA level one general digital technologies class, one NCEA level one programming class, one NCEA level two programming class, one NCEA level two multimedia class, one NCEA level two

web development class, one NCEA level three multimedia class, and one NCEA level three programming class.

Junior level classes are offered as “tasters” for senior level classes, and learners are encouraged to sample parts of each discipline as part of each junior level course. Multimedia is covered through learning Adobe Illustrator and Photoshop skills. Programming is showcased through the use of Scratch and robotics experiments. Website development is demonstrated by learning how to create websites using drag-and-drop editors such as wix.com, Google Sites, or Adobe Dreamweaver.

Throughout these examples, there is a natural progression of skills from the junior level classes to the senior level classes, and learners able to utilise their prior knowledge to inform their digital technologies journeys in later courses. This is not exactly the case with the website development portion of junior courses.

At the senior level, learners are expected to progress directly to using markup languages such as HTML and style sheet languages such as CSS. This means that there is very little connection between website creation in junior classes and website creation at a senior level.

The absence of HTML and CSS skill development in junior levels mean that learners are not exposed to any form of text-based “code” (the term “code” is used here loosely as HTML is formally known as a markup language) until they begin their NCEA studies.

This is a something that needs to be seriously considered as **learners are not currently being adequately supported in their learning journey from junior to senior classes.**

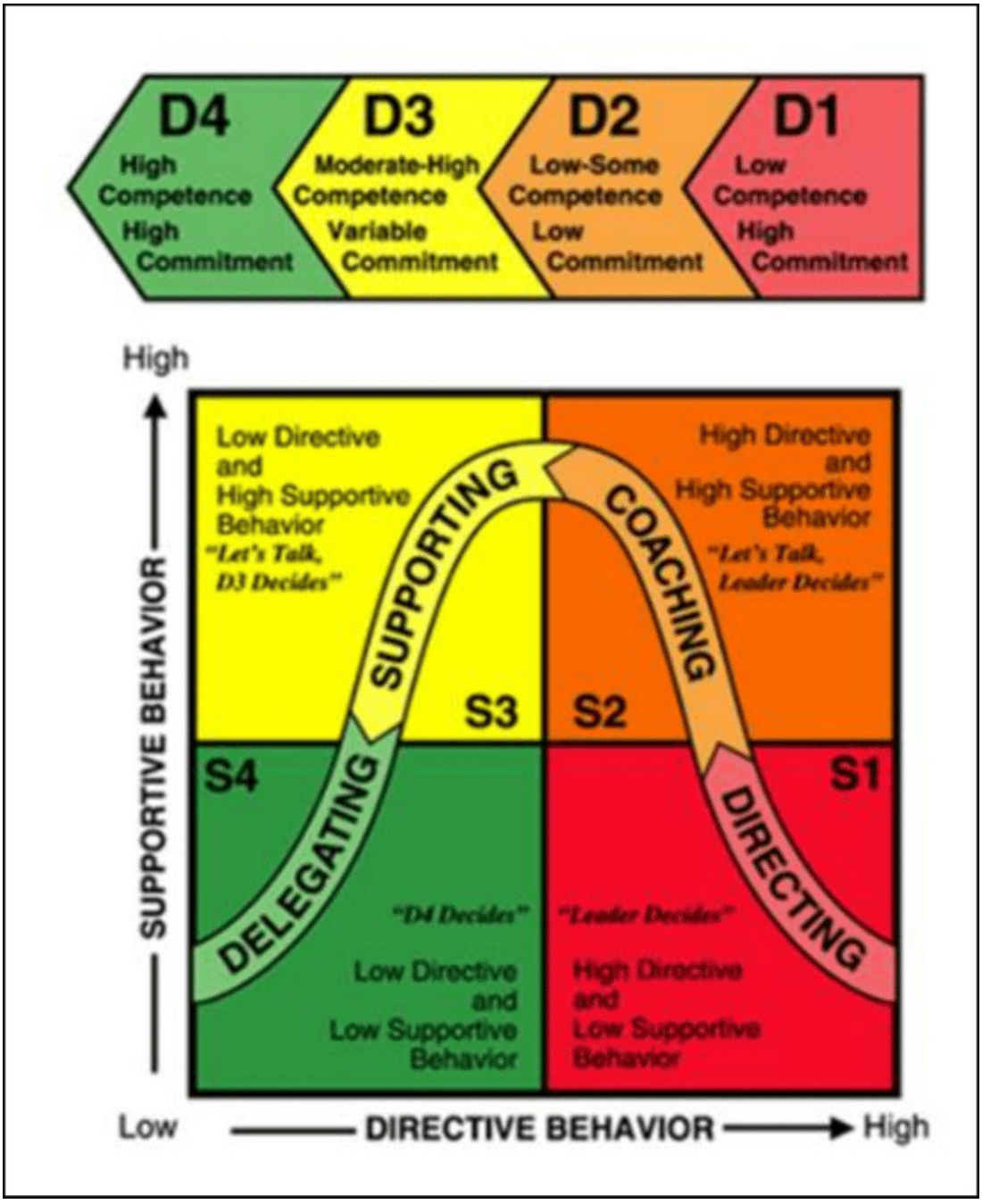
Build a Guiding Coalition

A strong collective of leaders is essential to solving this issue. I intend to work with other teachers in my learning area at Papatoetoe High School to initiate this change. We have worked together throughout the entire year, so group norms are already established, and respectful relationships have already been formed. This is a positive factor for the success of this project as it will have an impact on reducing group conflict in the future. The group has traditionally existed as a collective - not true distributed leadership, but as a working group of leaders who govern their own classrooms. There will need to be a shit into true distributed leadership in order to successfully implement this project. I have never taken a true leadership role within the group before, and this will be a challenge for the group as the dynamics will need to shift in order to accomodate me leading the change.

I have strengths in my own knowledge of HTML and CSS, so I will lead the development of a content-focused unit. My colleagues have strengths in leading innovative classroom activities and checking activities for clarity, so my colleagues will lead these initiatives as that is where

their strengths lie. In this way, we are best utilising the skills of each team member and the unit will be a shared undertaking.

I intend to utilise the theory of situational leadership in this situation to best implement the solution. My colleagues have a much greater amount of experience in teaching practice than I do, and therefore I need to make sure that I allow them to take the lead in these areas, but I have much more experience and knowledge around HTML and CSS, so I will need to lead these situations. The confidence of each teacher in regards to teaching HTML and CSS varies significantly in the department, and I intend to address each teacher in a different way.



Above: Situational Leadership Model (Zigarmi, Blanchard & Nelson 1993)

The first teacher is very confident and works hard to engage learners in his class. He is very open to trying new ideas and working with learners to achieve the best outcome. I intend to mostly use a “supportive” approach with this teacher (S3 in the model above). I feel that this approach is most suitable for the teacher as they will have the freedom to implement the learning in the way that they decide works best for their learners, but they have my support in understanding the content knowledge. This teacher strongly values freedom and exploration,

and by encouraging him to do this in the context of the unit, I am less likely to encounter conflict with him than I would be if I prescribed the teaching and learning activities for the unit.

The second teacher in the department that I intend to work with tends to work well from prescribed activities and instead focuses her teaching practice on ensuring that all learners succeed. She places less emphasis on diversifying classroom activities and prefers using class time to support learners who are especially challenged by the content. I intend to work with this teacher using a “coaching” approach. I believe that this approach will work well with this teacher as they will be provided with a complete unit of work that has self-directed capabilities. The teacher will be able to provide work to the learners and then focus on providing support, as is her preferred teaching approach. Using this approach means that the teacher will not have to focus on providing their own activities, which should reduce their stress and make them more open to implementing the unit. A potential challenge, however, is that the teacher will not have as much flexibility to change aspects of the unit in order to better meet her student needs. I intend to remedy this by providing regular support to this teacher when necessary.

Form a Strategic Vision and Initiatives

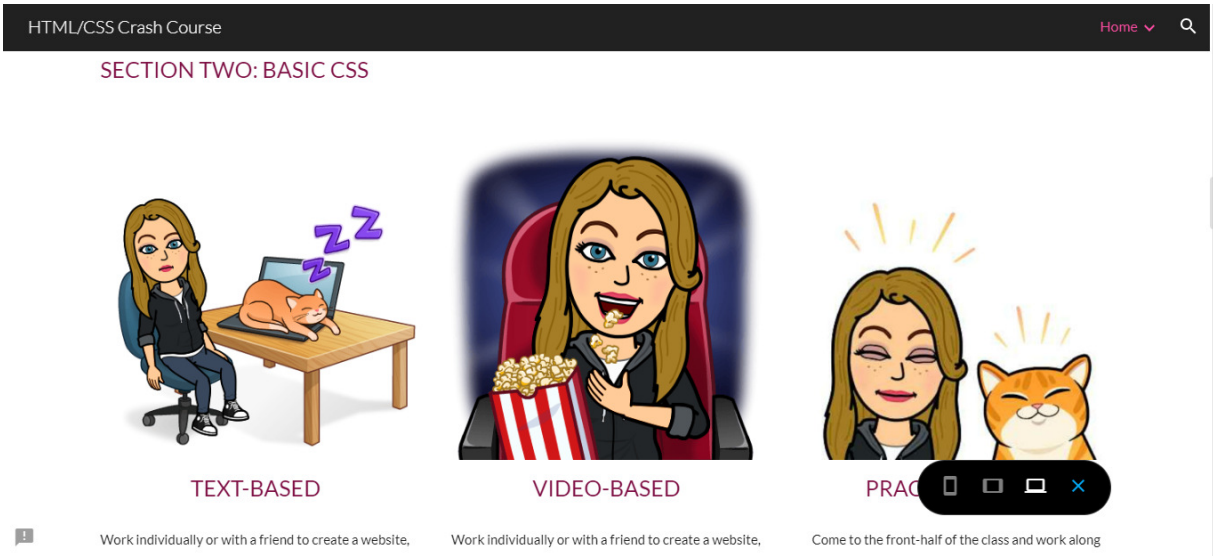
Two currently existing solutions to the lack of text-based computer language practice at year ten level are the use of a Massive Open Online Course aimed at low level HTML and CSS, or the use of existing paper-based resources in the school.

The more complete of the two alternatives is the use of a Massive Open Online Course that already exists online. One of these courses, such as the Code Avengers or Free Code Camp courses, would be great for teaching HTML and CSS as they are already complete courses that have been used all over the world by other students already. This means that no additional resources would have to be created by the school and that any issues in the course are likely to have already been identified as the courses have already existed and been tested for quite some time.

Unfortunately, many of these solutions require payment in order to be used, and the courses have very little differentiated learning. Courses tend to be offered in only one format, with no options for consuming content based on existing learning preferences. There is also not a lot of room in these courses for differentiation based on skill level. Students will begin the course at a specified exercise and end at a specified exercise. There is no additional support for repeating similar tasks that help to solidify the same concepts, or conversely, an adequate “skipping” mechanism for students who are already fairly confident in their abilities.

Similarly, paper-based resources from previous courses within the school could be used, but there is a lack of differentiated tasks. Furthermore, the resources that exist within the school are fragmented and outdated. No complete unit (with instructions) exists, and the tasks themselves are little use without the learning resources to support them.

In this way, the best solution is to distribute my hyperdoc unit to the school as it is differentiated by learner skill level, learner interests, and learning preferences, is complete, and does not require any payment.

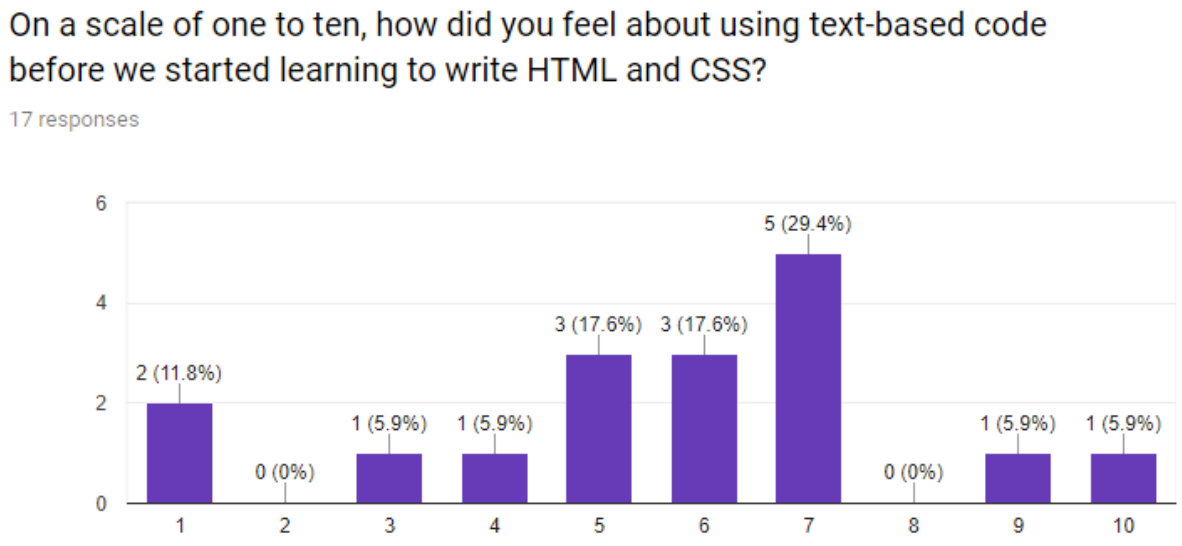


Above: A screenshot of the hyperdoc that I propose to roll-out to other digital technologies teachers at Papatoetoe High School (“Choose your own Website Adventure!”, 2018)

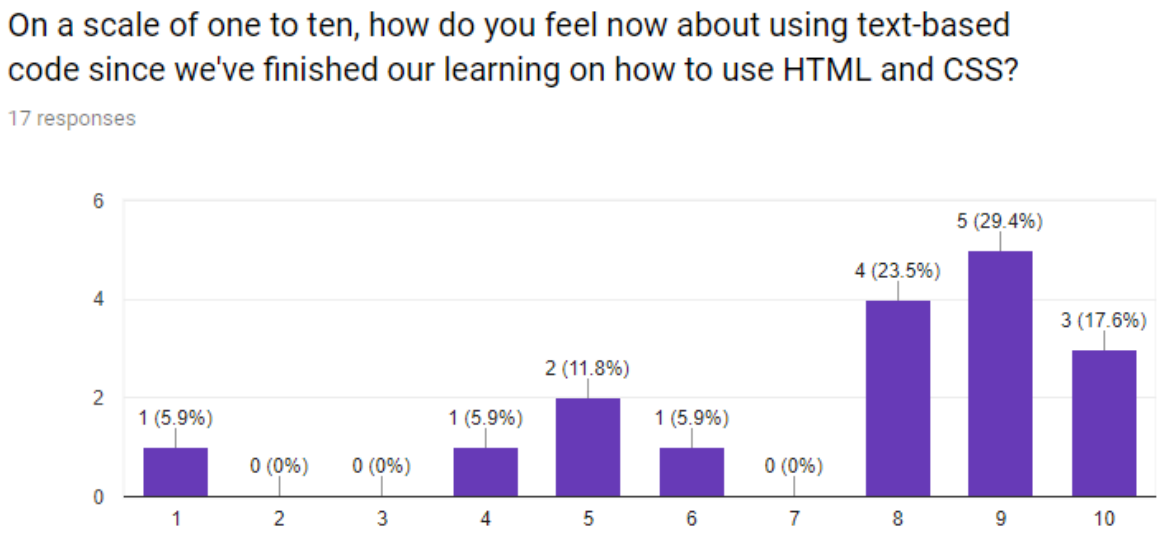
My solution to the lack of text-based markup language exposure in junior level general digital technologies classes at Papatoetoe High School is the roll-out of an HTML and CSS focused unit of work. This unit will be composed of a “hyperdoc” (central hub that contains links to activities and points of research, as well as formative assessment tasks) that is differentiated based on learning preferences, as well as comfort-level with existing content, and responsive to student needs.

As part of my curriculum leadership journey, I will support other teachers in the digital technologies learning area to implement the unit in their own classrooms.

Enlist a Volunteer Army

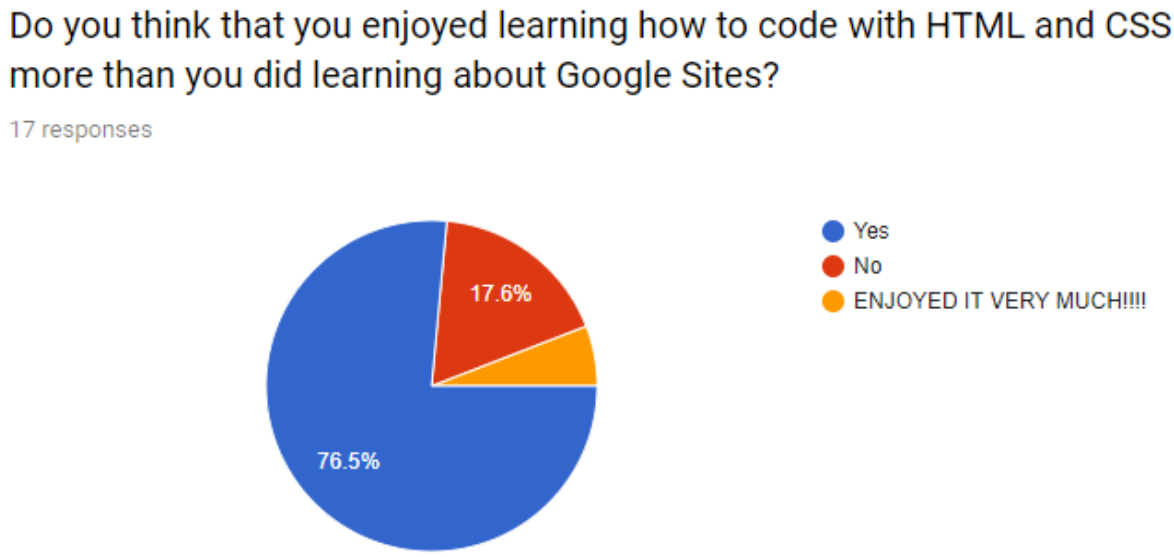


Above: Graph of student responses to the question “On a scale of one to ten, how did you feel about using text-based code before we started learning to write HTML and CSS?” (“Unit Review: HTML/CSS”, 2018)



Above: Graph of student responses to the question “On a scale of one to ten, how do you feel now about using text-based code since we’ve finished our learning on to write HTML and CSS?” (“Unit Review: HTML/CSS”, 2018)

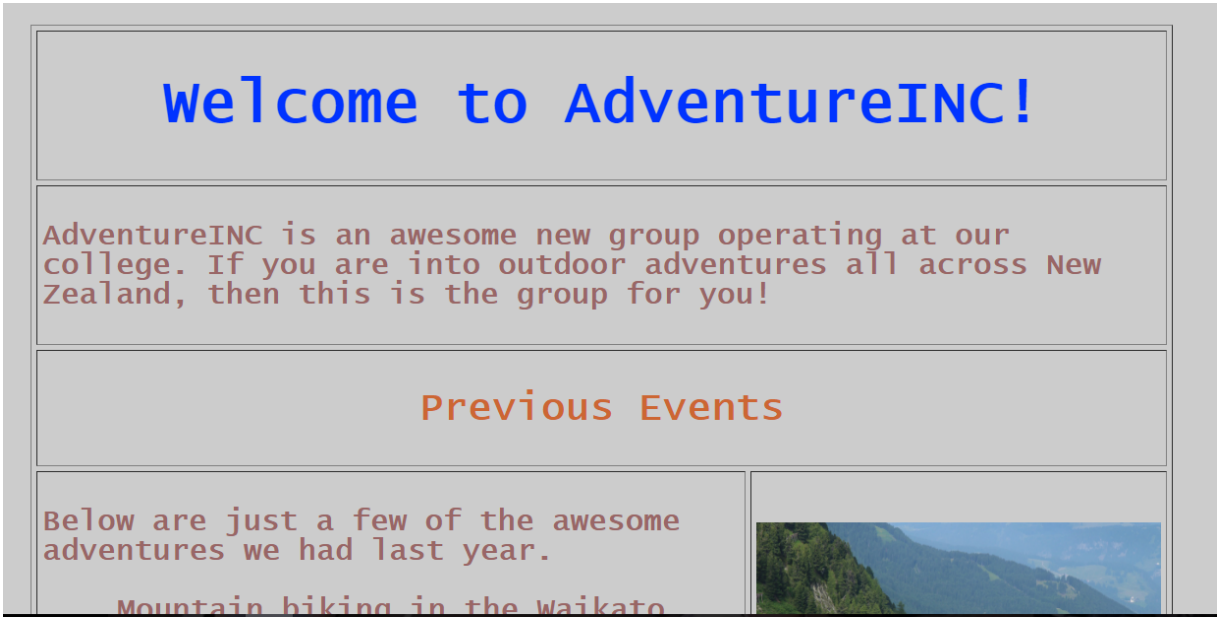
If implemented successfully, learners will be exposed to text-based “code” in a school setting earlier than they otherwise would have. This means that learners will be more familiar and comfortable with text-based computer languages by the time that they reach senior level courses that require students to work with them extensively. My research (above) confirms this based on the pilot of my own year ten class (“Unit Review: HTML/CSS”, 2018).



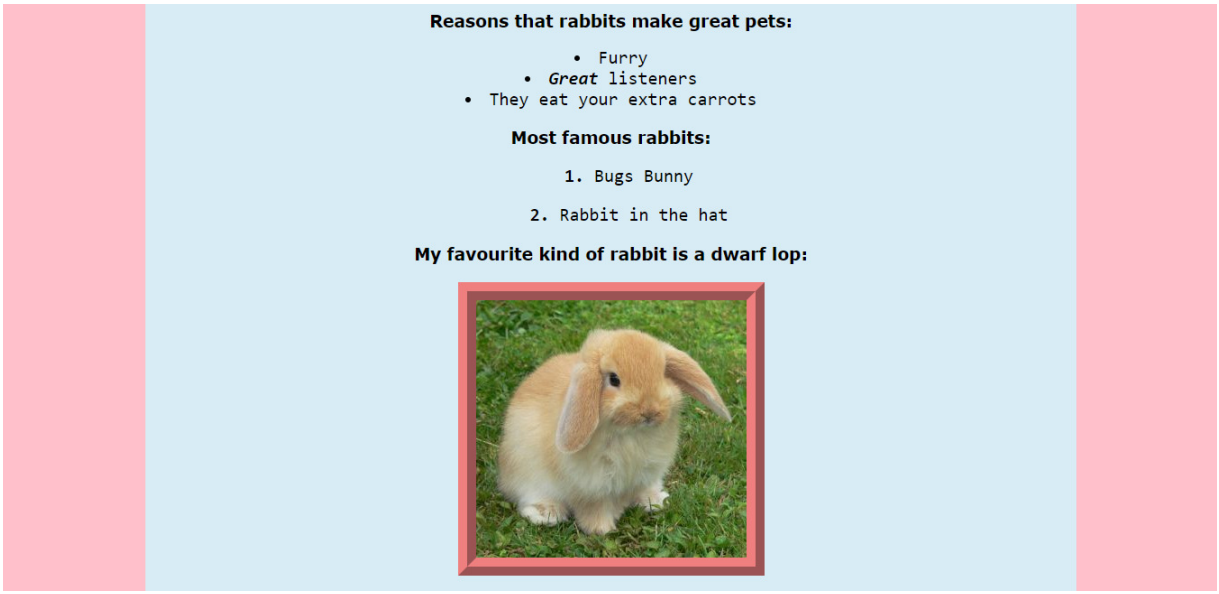
Above: Graph of student responses to the question “Do you think that you enjoyed learning how to code with HTML and CSS more than you did learning about Google Sites?” (“Unit Review: HTML/CSS”, 2018)

Above: Graph of student responses to the question “Do you think that you learned more from learning how to code with HTML and CSS more than you did learning about Google Sites?” (“Unit Review: HTML/CSS”, 2018)

Based on my own observations, learners are also very likely to enjoy and therefore engage with the content, leading to a richer learning experience overall when compared to a drag-and-drop-tool focused learning experience. My own research based on the pilot of my own year ten class seems to confirm this (“Unit Review: HTML/CSS”, 2018).



Above: Example of outcome from 10DTG’s Website Development unit in 2017 - created in Adobe Dreamweaver (Ansara, 2017)



Above: Example of outcome from my 10DTG pilot class - created with the support of my hyperdoc in 2018 (Nguyen, 2018)

Above: Example of outcome from my 10DTG pilot class - created with the support of my hyperdoc in 2018 (James, 2018)

In a more personal sense, I believe that the output of work from my year ten pilot class is of much higher quality on the whole than the work done in previous years with drag-and-drop based website editors.

Unfortunately, these findings did not provide further detail on learners who failed to engage suitably with the content, and as a result, further exploration into this area will be needed to ensure that the solution is best meeting the needs of our learners.

By running a pilot with my own class I was able to evidence my ideas about how the solution positively support effective teaching practice and learner-focused solutions.

Enable Action by Removing Barriers

My biggest challenge beyond creating the initial solution was modifying it to be appropriate for use by teachers who have little to no prior knowledge about building websites with HTML and CSS. I initially created the pilot site with myself in mind, and as a result, not all of the content was easily utilised by others. In order to be implemented within the department, and eventually within other schools in New Zealand, the solution had to be suited to teachers with a vast range of prior knowledge.

I had to put aside additional time to recreate the video resources, as the ones I had used were already-existing resources that did not necessarily cover the content in sufficient depth. My guiding coalition of teachers agreed with this. The newly created resources were more appropriate to the unit and contextualised to the audience. It would have been more beneficial for students to create these resources and share them, as the learners would have an opportunity to share their skills and what they have learned throughout the course. I chose not to do this as a result of time constraints and as this solution did not allow for any quality-control mechanisms. I think in the future I would prefer to encourage learners to contribute to these resources, and build in quality control by asking learners to critically evaluate submissions.

I came across minor issues in the chosen content, especially in the “extended HTML” section where students are presented with a number of options to choose from. These resources were sourced from the internet and were not thoroughly tested before being added to the unit. As a result of this, some of them were lacking detail, were out of date, and did not contain clear instructions to implement different concepts. These resources had to be replaced. This would have also been a great place to enable student contribution.

My personal biggest barrier to implementing the project was my inclination to feel intimidated by people who I see as having authority over me, and people who I see as being more knowledgeable or experienced than me. This obviously does not lend itself well to a situation in which I take on a leadership role, but it was a great opportunity for me to develop my skills in a situation where I am with people I trust and are less intimidated by than others. I developed a few personal strategies to help me combat this during the project. First, I focused on the goal of supporting students to learn more effectively than other units have supported students in the past. Keeping a firm grip on my goal helped me to maintain my courage as the goal was worth something much greater than myself. In this way, part of me was focused on servant leadership.

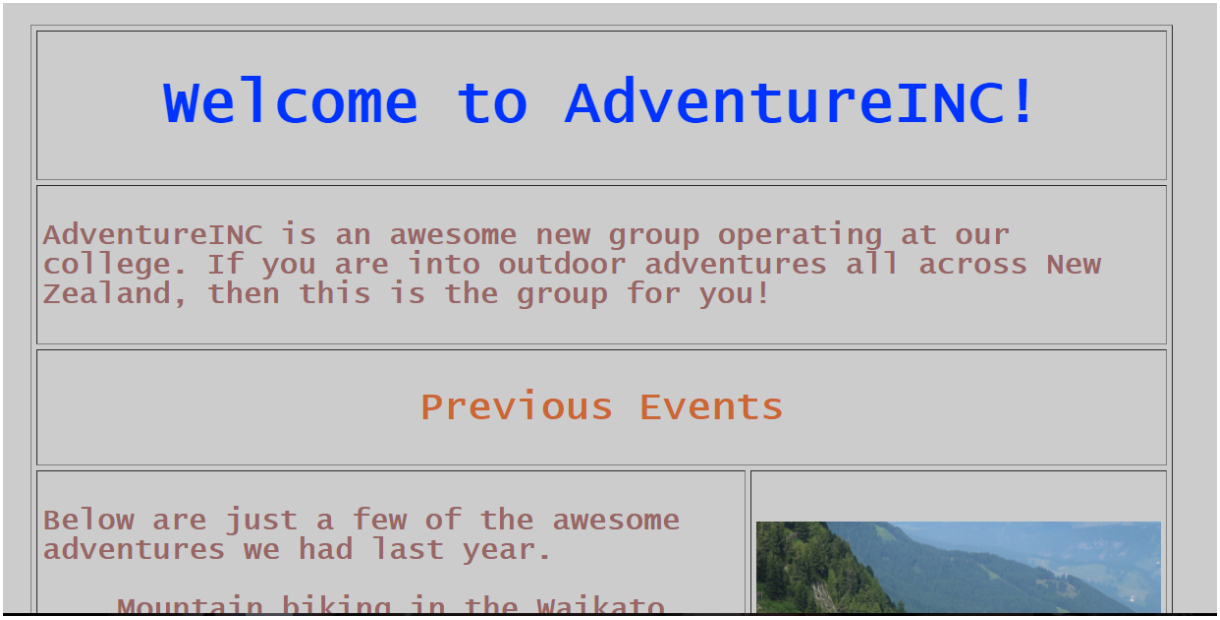
The other strategy that I utilised was trying to lead as a collective. Instead of an “expert” approach, I emphasised ako and collaboration in the project, so that it wasn’t as much about me

leading as it was about us best utilising our existing skills - distributed leadership. I think that I could have done this significantly better as I have an inclination to take on extra responsibilities for myself, rather than burden others with extra work. I should have utilised the talents of the leaders around me, and asked one of my colleagues to moderate the provided resources. This would have been a great use of a distributed leadership model, and lessened the pressure on myself to complete the resource alone. In the future, I will consider better distributing responsibilities to promote collaboration and teamwork within the group.

Generate Short-Term Wins

The most clear short-term “wins” were seeing the outcomes that the learners were developing over the course of the unit. When compared to the outcomes of previous website development units in year ten, I believe that the outcomes from this year’s cohort were superior in regards to aesthetics, complexity, and creativity.

After discussions with the other teachers, it is my understanding that they also find the outcomes from this cohort to be particularly impressive. All three teachers are proud of their student’s progress and consider their outcomes to be great motivations for working on the unit in the future.



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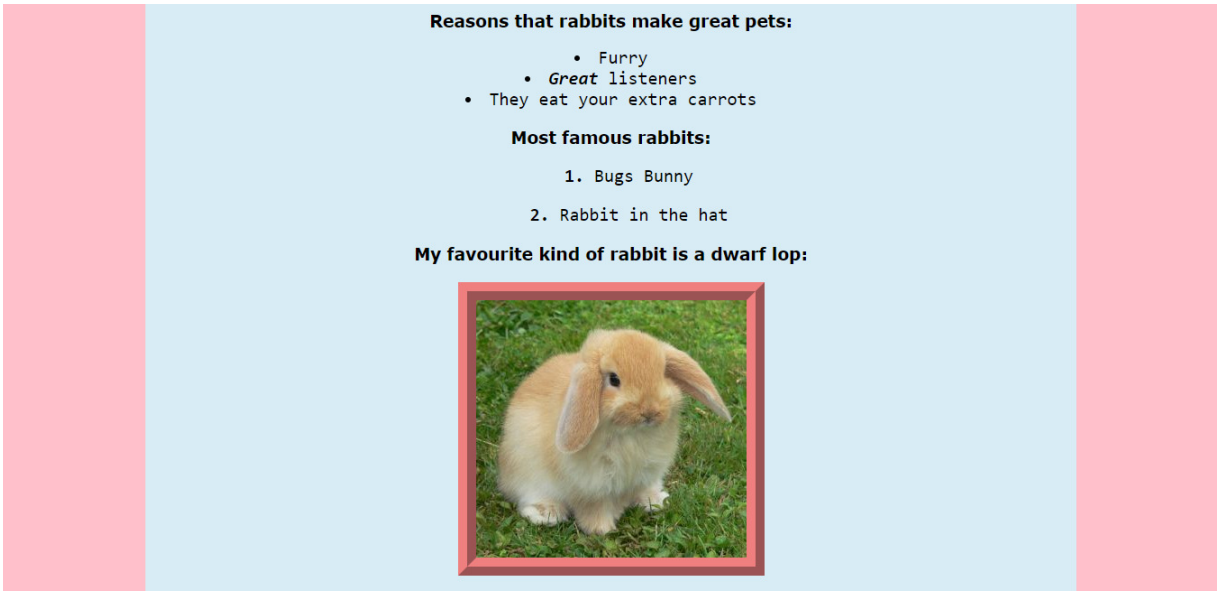

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Another benefit of implementing the unit this year is that it has been aligned with an NCEA assessment, which allows learners to gain NCEA level one credits for their websites. This is a great motivational factor for students, and has encouraged them to complete their assessments when they might otherwise lost interest.

Sustain Acceleration

In order to sustain the implementation of the project, I needed to ensure that the unit was best meeting the needs of all students who undertook it, not just my own students. As a result of this, the feedback that I received from the other teachers in my department was extremely valuable.

The teacher in my guiding coalition who especially values exploration worked with his class to find an alternative to repl.it - the tool that I had initially chosen to teach the students to use. Our leadership relationship had shifted to an “S4” on Zigurami’s situational leadership model (Zigarmi, Blanchard & Nelson 1993). This stage is “delegating” and takes place when the requires low support and low direction in order to implement the project of the group. This was significant as it lead to me shifting my personal leadership strategy from being the “project expert” to enabling discussion and open collaboration in the content of the solution. In this way, he was comfortable with the material and begun to experiment with modifying it to suit the needs of his own classes and enable more effective teaching.

The teacher spoke with me about how he found Thimble by Mozilla to be substantially more user-friendly as it provides contextualised tips and hints within the editor. His students had preferred using it over repl.it as it was more beginner-friendly than my chosen editor. I found this feedback to be especially helpful, and as a result, with his support, I intend to implement Thimble by Mozilla as a the core teaching tool in the future. In this way, I will shift to an “S3” on Zigurami’s situational leadership model (Zigarmi, Blanchard & Nelson 1993). Instead of being the leader, I will be supported by my colleague to institute the changes that he is an expert in, in order to ensure that the unit is as effective as possible for all of our students. This is, at its core, an effective implementation of distributed leadership.

I think that collaboration is incredibly important in leadership, and that sustaining the acceleration of a project is only possible with the support and collaboration of key stakeholders.

Institute Change

As a result of this leadership project, the unit has been deemed very effective by the teachers and students who undertook it, and has now been formally integrated into the curriculum for all year ten digital technologies classes from 2019. The unit will need to continue to be refined and built on according to feedback from teachers and students, and a collaborative, student voice-based approach will be necessary to ensure that this is done effectively.

I intend to show the unit to other teachers within the school as an example of what can be accomplished with a hyperdoc, and hopefully inspire them to create their own. I would like to utilise the concept of hyperdocs next year in my MTEL 9000 leadership project where I work

with teachers in other curriculum areas to co-teach and support them to integrate digital technologies into their own teaching practice.

The most significant change that needs to be instigated within the next month is the creation of new CSS videos for the Basic CSS section of the unit. This will bring the content up to the same standard as the Basic HTML video section and allow the unit to be much more self-guided and effective for teachers who lack confidence with HTML and CSS. With this change, the unit should be suitable for a wide variety of educational contexts as it is easily accessible via the internet, utilises differentiation in a way that caters for a wide variety of learners, and is easily modifiable by those who wish to change it to better suit their context. After this change has been completed, I intend to release the unit on the Digital Technologies Teachers Aotearoa forum and Teachers Pay Teachers website for use by other digital technologies teachers in New Zealand and throughout the world.

I think that the unit could be very effective among different context because of the aforementioned reasons, but it’s true effectiveness remains to be seen.

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