Learner-based Solutions

Jessica Petersen | 1503729

As a beginning teacher, I have found that no two learners are the same, and I think that the diversity of my classes is a strength.It allows us all to participate in ako and create a rich learning environment.

While the diversity in my classroom enriches our experiences, it also creates interesting challenges. When every learner has different goals, backgrounds, preferred learning styles, and experience in digital technologies, finding learning approaches that meet the needs of all twenty-seven children in the classroom can be a difficult task.

Instructivism

When I first started teaching, almost all of my lessons were created with the whole class in mind. Lessons were made in an “I do, you do” format, with me demonstrating the work and then the whole class attempting to the same task on their own machines. There were no extension activities for learners who were unchallenged by the in-class tasks, and no additional support available for learners who would have benefitted from it. This practice is based heavily on a combination of instructivism and hands-on learning (a branch of experiential learning).

35 minutes	**More Tags!** Continue ppt - https://www.teaching-materials.org/htmlcss/lesson2/slides#slide14 1. Formatted text - , , <i>, <b> 2. Hyperlinks <a> 3. Images <img> 4. Lists - ordered, unordered - , ,

Above: “I do, you do” in DTW2’s lesson plan for Wednesday 7 February, 2018 (“Jess Petersen - Planboard Lesson - Feb 7 2018 DTW2”, 2018)

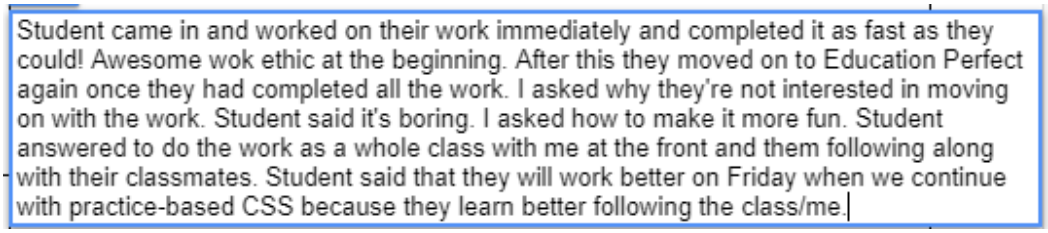
55 minutes	**Work Through and Demonstrate** 1. I have created a folder structure for my website 2. I have put html files into appropriate directories in my website root 3. I have linked my html files together 4. I have linked to an external style sheet

Above: “I do, you do” in DTW2’s lesson plan for Tuesday 13 March, 2018 (“Jess Petersen - Planboard Lesson - Mar 13 2018 DTW2”, 2018)

20 minutes	**We Do** As a class, use the "kiwihat" database to create a report that contains information about orders that a customer has placed.
10 minutes	**You Do** Use the Kiwihat database to create the following reports: 1. Daily Orders 2. All orders for the specified customer (LyoKat) 3. All customers

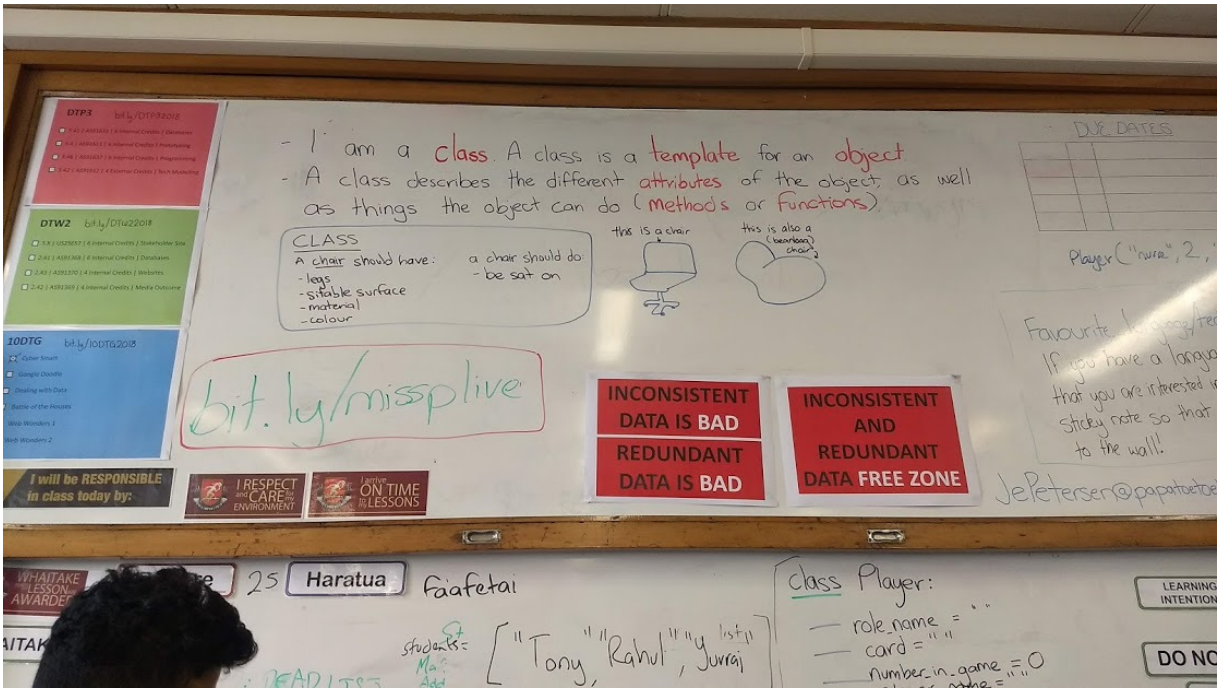
Above: “I do, you do” in DTP3’s lesson plan for Monday 19 March, 2018 (“Jess Petersen - Planboard Lesson - Mar 19 2018 DTP3”, 2018)

Instructivism is a learning approach where all knowledge is held by the teacher and distributes the knowledge to their learners, who receive the information passively (Gillies, 2015). In my experience, instructivism-based teaching approaches can be useful for initial explanations of content. Direct teaching gives my learners the opportunity to receive unfamiliar knowledge in a quick and direct way. Concepts that may be tricky, or are based on prior knowledge that the majority of my learners are unlikely to have, are easily explained in this way. I have found that some of my learners even prefer it and enjoy working as a class to follow instructions on the board.


Student came in and worked on their work immediately and completed it as fast as they could! Awesome wok ethic at the beginning. After this they moved on to Education Perfect again once they had completed all the work. I asked why they're not interested in moving on with the work. Student said it's boring. I asked how to make it more fun. Student answered to do the work as a whole class with me at the front and them following along with their classmates. Student said that they will work better on Friday when we continue with practice-based CSS because they learn better following the class/me.

Above: 10DTG student prefers direct instruction with the class following along as a form of practice and learning new skills (“8004 Student Tracking Spreadsheet (adapted from Nagy 2016)”, 2018)

In May, I spent some time using a knowledge-banking approach in order to initially teach my learners about classes. This included me drawing explanations on the board while I explained the application of classes and objects. My learners seemed to respond well initially to this approach, but on the whole, they struggled when I asked them to attempt to code it.



Above: (“DTP3 on Friday 25 May, written explanations of classes and objects on the whiteboard”, 2018)

I think that this may have been a result of one of the major downfalls of instructivism - focusing on rote memorisation instead of practice. In this scenario I was explaining the application of classes and objects and my learners were passively absorbing the information. They weren’t even writing it down. I was then asking them to create something entirely new based on the explanation I had given them.

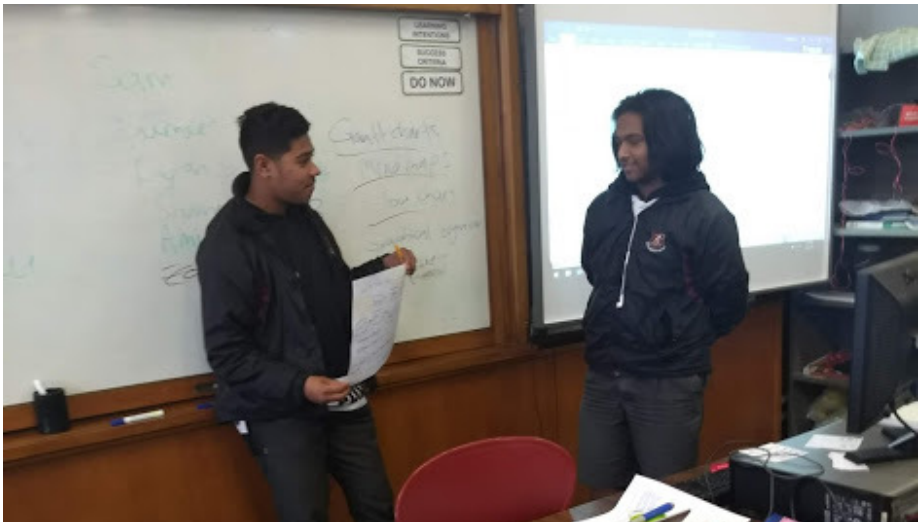
If we refer to Bloom’s taxonomy, we can see that I was jumping straight from the “remembering” and “understanding” sections, straight to the “creation” section. By doing this, I missed giving my learners the opportunity to better understand the content by progressing through “applying”, “analysing” and “evaluating” first. Completing these steps would have benefitted my learners, and they may have understood the content better if I had ensured that these were being carried out (Anderson, L. W., Krathwohl, D. R., & Bloom, B. S., 2001).

I learned from this experience by incorporating more tasks based on social constructivism, even (and especially) when the content is unfamiliar.

Social Constructivism

Social constructivism allows for learners to utilise their prior knowledge to build a shared understanding of a concept (Draper & MacLeod, 2013).This is related to the concept of ako, something that teachers in New Zealand strive to demonstrate in their practice. Ako is one of the

five major principles of Ka Hikitia, and is essential to growing as both a teacher and a learner in the New Zealand classroom (Ministry of Education, 2013).



Above: (“DTW2 on Thursday 2 August, presenting co-constructed informative posters about a new concept”, 2018)

My introductory activities around new concepts now often revolve around “making sense” of topics using prior knowledge, and research tools. I like to utilise research posters - an activity where learners explore a topic and then create a poster displaying their findings and present it to the class - as well as other “computerless” solutions like creating a gantt chart in the courtyard outside with sidewalk chalk.

Above: (“DTW2 on Tuesday 7 August, creating gantt chart for a web development project with sidewalk chalk”, 2018)

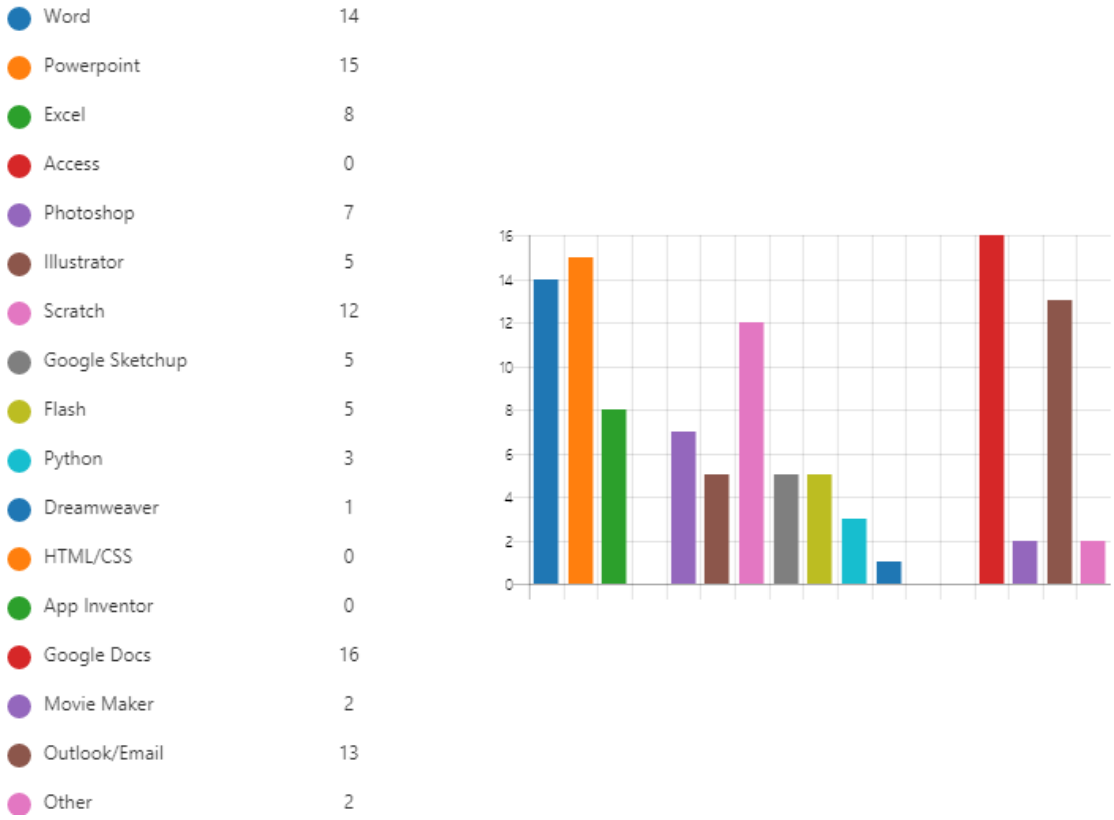
I chose to focus on the success of my learners instead of my own ease of instruction when implementing this change, and while I haven’t seen a huge change in learner achievement, I feel as though my learners are more engaged. It also gives my learners the opportunity to develop their social and collaborative skills, which are essential to success in adult life.

Differentiated Instruction & Learning Styles

I have been focusing on giving my learners opportunities to learn and succeed in ways that best suit them. I have made a conscious effort for my latest learning activities in my year ten class to have open outcomes. Learners are welcome to choose to make a website about any topic that they are interested in, and it has already resulted in a wide variety of websites being created.

Appealing to the differing interests of the learners in my classroom is a key component of the differentiation that is taking place. According to Carol Tomlinson, effective differentiation is made up of three key parts: learner readiness, learner interest, and learning profile (Tomlinson et al., 2003).

After reflecting on Tomlinson's ideas about differentiation, I realised how well it related to the learners in my classes. My year ten class has learners with a wide range of learning needs and level of experience with digital technologies. I have learners who are actively involved in special learning needs support classes, learners within mainstream classes for their year level, learners who are undertaking some NCEA level one courses in year ten, and even a learner who has moved from year nine to year ten during the year, and will commence year eleven classes at the beginning of 2019. In terms of digital technologies specifically, some of my learners had only had experience in one or two common pieces of software such as Microsoft Word or Google Docs, while others had experience working with eight or nine common options including Adobe Illustrator, Scratch, and Adobe Dreamweaver ("Beginning of Course - 10DTG PS", 2018). Within this, each of my learners have different interests including dancing, fashion, various games, anime, and various sports ("Slide Compilation", 2018). Each learner also has their own most suitable way of building their understanding of new knowledge, such as collaborating, reading and researching, and practicing ("Beginning of Course - 10DTG PS", 2018).



Above: Responses to the question "Which of these programs have you used before?" ("Beginning of Course - 10DTG PS", 2018)

It was from each of these different things that inspired a new teaching and learning approach that I have created and undertaken over the past few weeks. It consists of a website development learning "portal" that allows learners to focus on the same content in different

ways, as well as extend learners who would benefit from some extra challenge. It addresses each of Tomlinson's key principles in a different way (Tomlinson et al., 2003).

My portal incorporates learner readiness in what I feel is a fairly unique way. For the "Intermediate HTML" section, each of the nine tasks are allocated a colour, either green or blue, based on their difficulty. Learners are then each allocated a combination of blue and green tasks to complete, based on their readiness for the content (decided based on previous work in the class and progress with other modules). Learners allowed to choose any of the tasks that match the colour that they need to complete. In addition to this, learners are welcome to complete additional tasks regardless of their colour if they wish. This means that learners are not limited to tasks that they should be able to complete according to their perceived readiness, and this process serves to differentiate the task even further, allowing learners to choose the tasks they complete, as well as number of tasks that they choose to work on.

NAME	COLOUR ONE	COLOUR TWO	COLOUR THREE
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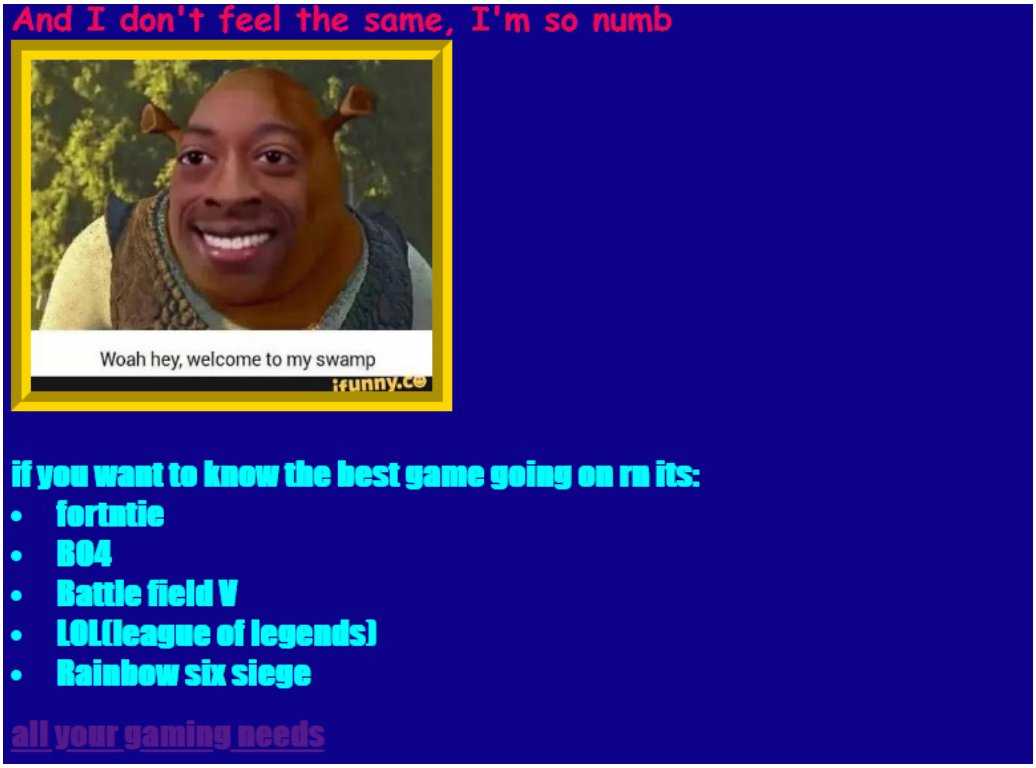
Above: Students and their differentiated colour allocations for their "Intermediate HTML" work ("10DTG - Intermediate HTML Colour Sheet", 2018)

In order to best meet the interests of each learner, website contexts are open and free to be chosen by each student as they complete their learning activities. In this way, each learner is creating their own website based on things that interest them.

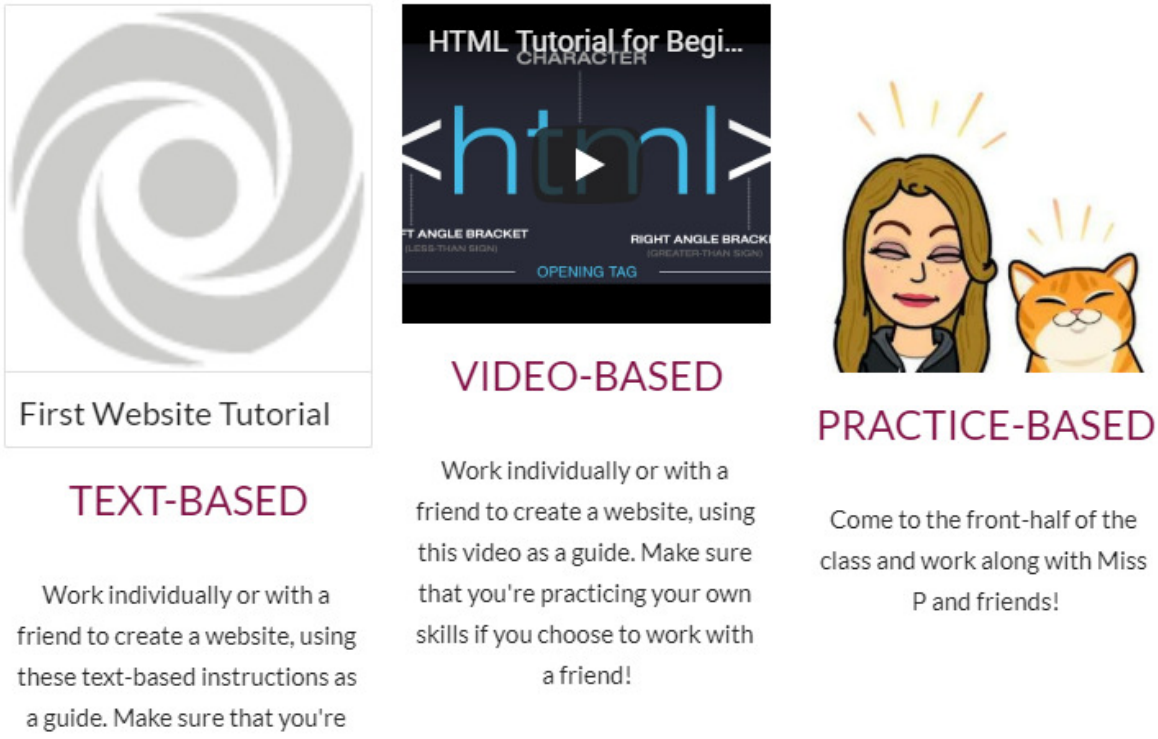
Above: Student work from a learner with interests in clothing trends (Narayan, 2018)

Above: Student work from a student who has been editing a website about rabbits (Nisha, 2018)



Above: Student work from a student who has chosen to create a website about their interests and popular memes (Kumar, 2018)

My approach combines several different styles of learning as suggested by Visual, Auditory, and Kinesthetic (VAK) theory. While research has not actually proved that the use of different learning styles in learning new concepts makes much of a difference when it comes to the success of understanding the new content, I decided to incorporate it anyway as many of my learners identified at the beginning of the year that they had different preferences for ways of learning (Clark, 2011). For the major learning components of Basic HTML, and Basic CSS, learners are able to choose from whatever learning style they feel is most suitable for them - text-based instructions, video-based instructions, and practice-based instructions.



Above: A screenshot from the portal (Petersen, 2018)

I am very grateful for the opportunity to reflect on my practices and expand on my approaches in order to best suit the learners that I am privileged to work with. My practice will continue to evolve over time, and I am excited to incorporate differentiation into it more readily in the future.

References

Anderson, L. W., Krathwohl, D. R., & Bloom, B. S. (2001). A taxonomy for learning, teaching, and assessing: A revision of Blooms taxonomy of educational objectives. New York: Longman.

Clark, D. (2011, July 12). Visual, Auditory, and Kinesthetic Learning Styles (VAK). Retrieved September 26, 2018, from http://www.nwlink.com/~donclark/hrd/styles/vakt.html

Draper, S., & MacLeod, E. (2013, April 12). Social Constuctivism. Retrieved September 26, 2018, from http://www.psy.gla.ac.uk/~steve/courses/archive/CERE12-13-safari-archive/topic3/webarchive-index.html#Index

Gillies, D. (2015). Instructivism. Retrieved September 20, 2018, from http://www.dictionaryofeducation.co.uk/i/i/instructivism

Kumar, A. (2018, September 25). WELCOME TO MY MEME PALACE. Retrieved September 26, 2018, https://repl.it/@AvinKumar/PristineKnowledgeableDaemon

Ministry of Education (2013). Ka Hikitia: Accelerating Success 2013-2017, the Maori Education Strategy. Wellington: New Zealand Government. Retrieved September 24, 2018 from https://www.education.govt.nz/assets/Documents/Ministry/Strategies-and-policies/Ka-Hikitia/KaHikitiaAcceleratingSuccessEnglish.pdf

Narayan, J. (2018, September 25). H Y P E. Retrieved September 26, 2018, from https://repl.it/@JoshuaNarayan/H-Y-P-E

Nisha, S. (2018, September 25). All About Rabbits. Retrieved September 26, 2018, from https://wrathfulcruelsnake--shawanah.repl.co/

Petersen, J. (2018, May 25). DTP3 on Friday 25 May, written explanations of classes and objects on the whiteboard [Digital image]. Retrieved September 21, 2018, from https://photos.google.com/photo/AF1QipNI2wkxP5HvcGlVA2rVusHnq9fYwdUlMRaBUmsH

Petersen, J. (2018, June 6). Slide Compilation [Google Slides Presentation]. Retrieved from https://docs.google.com/presentation/d/1-BIzLygL3RwNCwP4q4yIhbwvaaFDTJP2bQS8py2WJsw/edit#slide=id.p1

Petersen, J. (2018, August 2). DTW2 on Thursday 2 August, presenting co-constructed informative posters about a new concept [Digital image]. Retrieved September 21, 2018, from https://photos.google.com/photo/AF1QipNs1LkqNbLS0ale_PLCSAaU05jTLGFdc_nCM7dU

Petersen, J. (2018, August 7). DTW2 on Tuesday 7 August, creating gantt chart for a web development project with sidewalk chalk [Digital image]. Retrieved September 21, 2018, from https://photos.google.com/photo/AF1QipMCR7y1Zoc54sE7y9QkELzJ4aprR2WGLxQ-DAea

Petersen, J. (2018, September 10). 10DTG - Intermediate HTML Colour Sheet [Google Sheet]. Retrieved from https://docs.google.com/spreadsheets/d/1FBL5MCbKdjOd6Q-DnFPehobgo5CqtZZOiJofDlrD8y8/edit#gid=0

Petersen, J. (2018, September 24). 8004 Student Tracking Spreadsheet (adapted from Nagy 2016) [Google Sheet]. Auckland.

Petersen, J. (2018, September 25). 10DTG Website Crash Course. Retrieved September 26, 2018, from https://sites.google.com/view/10dtg-website-crash-course/home

Petersen, J. (2018). Beginning of Course - 10DTG PS [Microsoft form]. Retrieved from https://forms.office.com/Pages/DesignPage.aspx?origin=shell#Analysis=true&FormId=_N-98IPXDUec2GVFogw2lYh2D6FPfpRLnnsIwAw0rVNUMDA0S0xUQVY4VFI3NDNINEQwM1o1R0ZLNi4u

Tomlinson, C. A., Brighton, C., Hertberg, H., Callahan, C. M., Moon, T. R., Brimijoin, K., Reynolds, T. (2003, Winter). Differentiating instruction in response to student readiness, interest, and learning profile in academically diverse classrooms: a review of literature. Journal for the Education of the Gifted, 27(2-3), 119+. Retrieved from http://link.galegroup.com.libproxy.unitec.ac.nz/apps/doc/A167253934/OVIC?u=per_unit&sid=OVIC&xid=36e6d9a1