DEVELOPING STUDENT DIRECTED CRITIQUES TO BUILD

SELF-EFFICACY IN YEAR 10 BOYS

Monique Ellis-Martin

Christ's College, Christchurch, Canterbury, New Zealand

Abstract

The participants in this action research project were Year 10 boys in a Design and Visual class at Christ's College, New Zealand. The purpose of this study was to investigate whether the use of peer-led critiques could encourage the boys to have confidence in their design ability in order to drive their designs forward. I wanted them to think more openly and look at their designs from new and different perspectives. Traditionally, I have used individual teacher feedback to develop boys' designs in class. However, I have found that often, boys tend to settle on their first design idea and are reluctant to refine and develop their products. I aimed to investigate to what extent this scenario was driven by a lack of belief in their own ability and whether using peer-led critiques might lead to increased self-efficacy in the design technology classroom. I hoped to see that the boys would begin to have confidence to refine and develop their ideas. Whilst it is common practice to use peer-led feedback in university art courses, I had not attempted this type of feedback through class critiques in a Year 10 class. I intended to see if this would help my boys to be better designers and have more confidence in their ideas.

The study ran for four weeks. The boys were put into critique groups and met together once a week to discuss the progress of each student's work. During these critiques, the boys presented their designs to the group and each group member gave feedback on how to improve the design. They then spent the next three lessons reworking their designs before their next critique. The process was repeated three times over the course of the action research. Throughout the four-week study, I made teacher observations during the critiques, recording notes focusing on how the boys performed in this environment. I collected both pre- and post-action survey data and conducted final interviews at the end of the research cycle. There were 20 boys in the group and all boys participated in the study.

I analysed and coded the data into themes and overall the findings highlighted that peer-led critiques were hugely beneficial during the design process. The boys found that gaining feedback from peers, as well as their teacher, extended their thinking and improved their creativity skills. I also observed a significant growth in their confidence to present their work to others. The boys became less afraid to have their work critiqued and enjoyed working together to improve both their own and their peers' work.

Overall, the boys' self-efficacy grew and they became more confident about their designs. This improved confidence in their ability could not only affect them now, but it could help the boys to believe they can be successful in all aspects of their life.

Glossary

Self-efficacy: Self-efficacy, in the context of my study, refers to one's belief to succeed in a specific situation. For example, the student's ability to be able to develop their work to a level that they believe is successful.

Peer-led critique: Boys being put into groups of four or five and then working together to give feedback on each person's work helping them to identify possible alternatives and develop their designs.

Design Process: This term refers to the overall process of a student's design. Boys are required to think about different solutions and be able to work through the key stages which are: research, ideas, development, solution.

Design Development: This term refers to the stage in the design process where the idea is refined. Alternatives must be considered and factors impacting on the design need to be thought about.

Introduction

How important are peer-led critiques? Should feedback always come from the classroom teacher? In the Design and Visual classroom, I wanted to encourage boys to listen to each other to develop their design ideas and for them to have the confidence to bring ideas to the table, to learn from one another, and not just the teacher. I knew from my own experience, that stronger work can be produced when different viewpoints are offered: the ability to share ideas can help refine them. I have observed that boys do not always have confidence in their design ability and wanted to research the impact of peer-led critiques on their self-efficacy. Could their confidence in their ideas increase, leading to an improved design process? Could using peer-led critiques, instead of the usual teacher feedback, produce stronger designs? These questions led me to my research question: *How can peer-led critiques in the Design and Visual Classroom increase self-efficacy in the design process?*

Action research was an appropriate methodology for this research as it allowed the boys and their voices to be central to the findings. Gathering qualitative data provided me with the opportunity to reflect on their experience and closely observe their interactions in class. Although it can be challenging to measure self-efficacy in boys, this action research was an ideal opportunity to attempt to explore the impact of peer-led critiques on its development.

Literature Review

"Feedback is one of the most powerful influences on learning and achievement, but this impact can be either positive or negative" (Hattie & Timperley, 2007, p.81).. I am always looking for new ways to develop and motivate students. By changing my teaching style from teacher-led to facilitator in a creative classroom, I wanted to look at how this could positively impact work from my boys and potentially increase their engagement. As Hattie & Timperley (2007) note, "If feedback is directed at the right level, it can assist students to comprehend, engage or develop effective strategies to process the information intended to be learned" (p.104). Hattie & Timperley (2007) refers to feedback loops as an important way of advancing student learning. He asserts that effective feedback must answer three major questions: Where am I going?; How am I going?; and Where to next?" (p.86). It is, therefore, important that feedback needs to have clarity and purpose to help students know how to proceed, which will hopefully help them to feel in control of their learning.

Robertson (2017) explains the shift in pedagogy from teacher-lead to teacher-facilitator: "To be effective, feedback needs to be clear, purposeful, meaningful, and compatible with students' prior knowledge and to provide logical connections" (p.104). Clearly, boys need to be part of the feedback process for it to be effective. Robertson notes that teachers need to look at how their roles are changing to adapt to new teaching methods and need to be more open-minded and form positive partnerships with students. This can build trust and ensure that there is a safe and respected ground for the boys to voice their views which, in turn, can have a positive effect on engagement and outcome.

Gielen et al. (2009) explore how peer feedback, in particular, has a positive effect on student learning. Their research is broken down into feedback and performance, peer-feedback and performance, and peer-feedback quality and instructions, to foster feedback. They state that the quality of the feedback is important. Students need to be able to articulate their ideas and give considered suggestions. Gielen et al. also highlight that questioning skills hold a vital role in feedback. Students who can ask open-ended questions or give explanations for their feedback lead their peers to a deeper level of thinking. This suggests that peer-led feedback can have a highly positive impact on learning.

A report by Mitra (2018), found that when students had the opportunity to use their voices, student motivation and engagement grew, and by developing students' abilities to lead discussions and give feedback on peers' work, their results improved. This suggests that when teachers move to facilitators, they act as a springboard that allows students to develop their work more successfully, which in turn encourages them to take an active role in their own learning. I believe by supporting students to use their "voice," it could lead to improved academic performance. Also, by using student voice to strengthen critical inquiry, we are potentially extending and preparing our students for higher education. Mitra

(2018) concludes that, "Increasing student voice has often improved a school's culture. Respect and empathy levels have increased which develops positive relationships" and notes further, "students can improve academically when teachers construct their classrooms in ways that value student's voice" (p.476). It seems that valuing students' opinions and showing them that they can lead change through their voice can allow them to improve their work and become motivated learners. Toshails and Nakkula (2012) suggest student voice can also have an impact on future planning. They note:

> Promoting student voice can be of enormous benefit to the teacher's craft as well. When teachers open space for voice in the classroom, a unique window into what the student thinks and feels about her learning also opens. When a student's voice is facilitated, the teacher can observe how the student is making sense of things and where that student wants to go with that knowledge. Such information is valuable to the teacher designing instruction to meet individual needs. (p.25)

The concept of using feedback loops was key to my action. Carless (2018) notes: "Feedback is conceptualised as a process in which learners make sense of comments about the quality of their work in order to inform the development of future performance or learning strategies" (p.4), and notes also, "A characteristic of student feedback literacy is to revisit feedback comments and apply them in pursuit of improvement" (p.2). Carless also discusses the benefits of using single and double-looped strategies and investigates the effects on student engagement in the classroom. Seemingly, using both single and double-loops in the classroom allows students to critically think and interrogate their ideas. Double-looped feedback allows students to constantly re-evaluate their learning and enhance reflective thinking.

Throughout this research, I hoped to see how using self-efficacy as the vehicle could promote motivation and build engagement. I have found that boys often struggle to think "outside the box" in my classroom. They are often looking for quick solutions – the easiest path. I wondered, how I could get them to push boundaries and come up with alternatives.

Zimmerman (2000) links self-efficacy to academic motivation. He notes that, "self-efficacious students participate more readily, work harder, persist longer and have few adverse emotional reactions when they encounter difficulties" (p.86). It appeared that creating an inclusive environment, where boys can be themselves and feel comfortable sharing their ideas in front of their peers, might reduce anxieties and help them to improve their design work. Encouraging them to be open to change and giving them the belief in their ability to provide valued feedback could help increase their motivation and improve academic outcomes.

Why might boys respond to the introduction of peer-led critiques? Reichert and Hawley (2013) report that "boys like to work together" (p.77). In one case study they conducted, boys became effective problem solvers when they were allowed to work with peers, which suggests that the peer feedback method might appeal to the boys. Furthermore, their findings suggest that giving the boys greater agency in the design process as a whole might bring success. In summary, the potential of peer critique to enhance self-efficacy can be summed with the following comment from Reichert and Hawley: "Tell me and I will forget it; show me and I will remember it; involve me and I will understand it" (p.110).

Research Context

Christ College is a private boys' high school in Christchurch, New Zealand and is well known across the country for its competitiveness in a broad range of sports, from traditional team sports to more recreation-based activities. The school has day and boarding houses, where lifelong friendships are formed, a solid work ethic is nurtured, teamwork is fostered, and leadership is promoted.

For my action research project, I used my Year 10 Design and Visual Communications class, comprising 20 boys. The boys were very open to trying new things and the classroom atmosphere was mature and supportive. They were a mixed ability group that I felt suited my research aim. The boys were honest and I thought they would take the research seriously and enjoy the responsibility of leading critiques and empowering both themselves and their peers.

I saw these boys four times a week for 50 minutes. Permission was gathered from parents and students. A form was filled out, signed, and returned to me for filing. Both students and parents were supportive of the research. The confidentiality of the boys' identities has been preserved by coding. They were each given a letter to identify themselves from A-T. They then labelled their work with their corresponding letter. This system was used throughout all surveys, reflections and interviews.

The Action

This exciting topic, *Developing Agency: Boy Voice and Choice,* was well suited to a design environment. I set aside periods where boys worked in smaller groups to discuss their designs. They then gave feedback and suggestions to further improve the ideas. Each boy reflected on the feedback, taking on suggestions to develop their designs. I hoped that by allowing them to develop their skills in a "safe" classroom environment, they would feel more confident and "lead" their learning.

To begin with, boys watched "Austin's Butterfly: Building Excellence in Student Work," (EL Education, 2016) a film that explained the critique process as well as showing how student work improved through this intervention. Then as a group, we discussed how to use questions to give constructive and applicable feed-back.

The boys were then asked to design three ideas for a new product. They had complete choice over the type of product. The boys brainstormed ideas before we started and developed ideas such as speakers, shoes, clocks, guitar, suitcases, and lights. At the end of week one, boys were put into groups of five. They then critiqued each other's designs, with boys offering two suggestions for improvement. Once the critique was over, each boy reflected in their online journal, noting down the suggestions that had been given, how they might act on them, and then used these suggestions as a springboard to refine their ideas. Prior to the action, the boys often struggled with the development stage of design, where the purpose was to look for alternatives. The peer-led critiques, however, helped them reflect on different ideas for future modification and thus allowed them to further develop their idea.

The boys struggled after the first critique as they did not want to hurt anyone's feelings and were reluctant to give suggestions. It was clear that I needed to "teach" them how to articulate their thoughts and lead discussions. Therefore, I slightly adapted the action by giving each group a scaffolded question sheet to use as a guide. It had a list of key questions that related to the form, use, and materials of the design. Giving the boys key points to talk about, such as the shape of the product, how the product could work, and suggestions for alternative materials, helped them make suggestions to their peers to further the design development. This ultimately helped the boys to be more constructive in their critiques.

Over the next two weeks, the boys repeated the process. Each week their design on paper was photocopied so that we could see the design development before they started to modify their design again on paper. They spent three periods using the suggestions from the peer critiques, working on improving their designs, before presenting their work back to the group.

Data Collection

I used a mixed-method approach, collecting qualitative data through surveys, interviews and teacher observations. This variety of data allowed for polyangulation (Mertler, 2017) which helped strengthen the integrity of my findings and allowed for themes to emerge. Mertler notes that using triangulated mixed methods, "leads to greater credibility in the overall findings to the extent that the two sets of data have converged and indicated the same or similar results" (p.107).

I used the following methods of data collection:

- ∉ Researcher observations

- ∉ Teacher field-notes

- ∉ Video recording and photos

- ∉ Student interviews

∉   Student Journal

I collated the data from student interviews, field notes, videos and student journals to enhance the validity of the findings. The boys completed an initial survey exploring their views on peer reviews and how they valued them in the classroom. At the conclusion of their work boys completed a final survey followed by an interview.

As the boys gave their critiques, I took notes and also filmed some of their discussions. All boys in the class were involved in the action and took part in all the critiques and reflective journal writing. At the end of the action research, the boys were interviewed. Alongside this, I took photocopies of their work at the end of each week to monitor how the feedback impacted on the progression of their design.

Data Analysis

I used a process of colour coding whilst analysing the data to identify emerging themes. I labelled findings with different code names and then grouped findings of similar codes from the various data sets, which included entry and exit surveys, individual video interviews, classroom observations, field notes and written reflections. To ensure the research had validity, I compared interviews with post-research class surveys using the same colour coding method.

The four main themes that emerged from my analysis of the data were as follows:

∉   The boys need to use a scaffold for effective peer-led feedback

∉   Peer-lead critiques developed the boys' design creativity

∉   The boys became more confident in sharing their designs for critique

∉   The boys reported increased motivation to improve their work

Discussion of Findings

My research aimed to see if boys increased their self-efficacy as a result of peer-led critiques. At the end of my research project, it was clear that the boys' approach to design had improved, leading to more successful product creation. Through analysing the data, it was clear that the process had resulted in increased self-efficacy.

Peer-lead critiques increased the boys' design creativity

The boys embraced the critique process and benefited from the constructive feedback that their peers had given them. Fifteen out of 17 boys reported that having their peers comment on their work gave them more ideas and developed their creativity. Boy R commented, "I think the class critiques have been better than what I have had with the teacher critiques because there are more minds so more ideas" and Boy B

reflected, "My work definitely improved and I got more ways to improve it." Boy F went further commenting, "My work improved because everyone is willing to give constructive and honest feedback" and reflected in an interview, "the benefits of having more people giving you ideas mean there are lots more different opinions that you can consider which significantly improves your work because you are getting so many people's views and perspectives." Boy S found it beneficial to his project to have multiple suggestions. He reflected that, "it's changed my work because it's not just based on what I think is best, but a variety of opinions to help me attract a wider audience."

Having peer feedback seems to have helped the boys increase their design creativity, leading to an improved final product. Boy B reflected: "I think that receiving feedback is very good as some people can see ways to improve the design that you cannot." A common statement from the boys in the post-action interviews was: "It made me use ideas that I wouldn't normally think of." It is clear that the peer-led critique process helped each boy generate more ideas for their design and crucially, it appears that they were prepared to act on these suggestions. There was only one boy out of the group of 20 that reported he did not find the critiques helpful.

The boys needed a structure for effective peer-led feedback

An informal observation from my teacher field notes in the first two critiques revealed that, to begin with, the boys were reluctant to give suggestions. Their confidence in giving feedback to others was lacking and they were reluctant to make suggestions to their peers as to how to improve their work. They were, however, very good at saying positive things about their peers' work. However, this did not lead to significant improvement in the boys' designs. It was clear that there needed to be a more structured approach to the peer-led feedback for it to have a significant impact on the design process.

The use of the scaffold was an important adaptation of my action. The boys noted in their reflective journals that this helped them structure the critiques and they preferred using the scaffold as they felt like they were not criticizing their peers' work. Boy K reflected, "I found with the scaffold I received better, more helpful feedback on how to improve my product."

The boys became more confident in sharing their designs for critique

The boys reflected that the critique method had increased their confidence in discussing their designs and saw this as a positive aspect of the project. In my field notes, I noted that the boys showed a more mature outlook in class and took the critiques very positively. They also reported that they felt their critiques were sincere, professional, and kind. Boy F reflected, "I felt like the comments were really genuine and good," while Boy M reflected, "I have become more confident discussing work in a critique group." In

the post-action surveys, the boys also recorded that they found their confidence grew because of these critiques.

In a post-action survey question looking at developing confidence through presenting their work to their peers, 14 out of 17 boys reflected that this has improved their confidence and felt that they could show their work in front of a group without thinking it was not good enough or that someone might say something negative about it. Boy T noted that he was more confident sharing his work and having other boys work with him to improve his work as a result of the action. He commented, "It gave me the chance to talk about my designs and this has helped me get better at speaking in a formal group situation." They were more open to sharing their work with others.

Fourteen out of 17 boys said that they felt that suggestions for improvements had been clear, specific, and focused on improvement – they did not make a boy feel bad about their work. The boys also noted they enjoyed helping their classmates improve their work, making the learning environment calm, caring, and positive. They reflected that having critiques where other boys gave them new ideas and ways to improve their design kept them engaged in the project, instead of feeling like they did not know how they could improve their work. Consistently gaining reassurance from their peers about their design, led the boys to being more confident with their work. Having peer-led critiques appears to have also given the boys self-belief in their ability - that they could do the work and that they were good at it. To sum up, Boy S reflected, "I have become more confident and more open to showing my work because all the boys are positive, and it helps me to improve my work."

The boys were more engaged in the design process and motivated to improve

In the post-action surveys, the boys reported that this was a very enjoyable way to work. In their reflective journals, they reported that they enjoyed spending three periods working on their project then having one period a week on critiques. Boy H reflected, "I was engaged more as I got to see what other boys are doing and it can help me and others to develop our work." Supporting this was Boy F, who reported, "Critiques definitely built my engagement. This is because we are able to share our honest opinion with each other, which is extremely constructive." It also appeared that motivation was increased in those boys that may have been stuck and struggling to find direction. Boy Q reflected, "I was more engaged because I could see what others were doing and work off them. I let them work off my work too." The experience helped them move in the design process as it provided them with so many suggestions that they always had a plan or an option. A word of caution, however, was noted by Boy A: "If the group giving the critique was engaged then he felt more engaged but if they were not on board that it decreased his engagement." This was an interesting point and indicated that it is important to have group buy-in for the process to be successful.

Conclusions

Ultimately, I wanted the boys to become more confident in their design ability and I was delighted with the results from using peer-led critiques. Through this journey, the boys became more comfortable sharing their work and more confident in giving and acting on suggestions. By taking the lead in the process, the boys really did appear to increase their self-efficacy.

This project centred around boys being able to lead critiques and use feedback from their peers. They controlled the feedback and helped shape and improve each other's work, which was a huge responsibility. Mitra (2018) states, "The more boys can assume agency in the initiatives, the more opportunities they have to learn and grow" (p.474) and this was evident in the way boys took control and led their own learning.

The critiques helped the boys develop their critical thinking skills, allowing them to drive their designs forward. By continuing to feedback throughout the process, the boys had a greater belief in their ability and a better understanding of potential modifications to their work. It has certainly led me to consider how I can use this technique throughout all of my Design and Visual classes. It was a successful model to use in my classroom and I feel that it would be very useful to adapt moving forward.

The peer critique process could be transferable to other subjects. I plan to implement peer-led critiques every fortnight for my senior classes. The boys in the project clearly gained confidence in sharing work and were able to cope with suggestions and feedback given about their work, so I am interested to see how it works in different classes. I believe that using peer-led critiques across Design, Art, Drama, English classes would be beneficial to the boys. The critique model could also help boys that may feel lost or stuck and are not sure what to do to move forward. Having the opportunity to use this technique may give them new ideas as to what they could develop their designs towards a more successful outcome.

In conclusion, this study did improve the boys' self-efficacy; they were more engaged and motivated to improve their work. They grew in confidence and achieved their goals in developing their work to a higher standard.

Reflection

I think that many teachers struggle to let go and give boys the opportunities to lead their own learning. In this study, the boys worked together and I took a step back and acted as a facilitator helping them to ask questions and take the lead. Being able to step back, allowing them to take the lead, and share their thoughts to critique other boys' work, may be a challenge for some teachers. It means relinquishing control and handing it over to your class. However, as a result of this action, I have seen the boys grow in their self-

belief and prove to themselves that they are talented young men capable of working together to help improve each other's projects.

When I was a student, I remember not enjoying sharing my work for fear that it was not good enough. From my post-survey interviews boys reflected that this was still one of their fears, so this is something worth considering for the future. However, I have enjoyed seeing the boys grow in confidence through this process and more particularly the enjoyment they have derived from the experience.

On reflection, when implementing critiques in future, I think it would be better to have one every two weeks. The boys would then have the opportunity to explore their design in more detail as they tended to only have time to focus on the exterior elements of the project. I am going to implement it into my senior classes every two weeks and into my junior course twice during a course project. Not only has it made their thinking more lateral and helped them problem-solve and articulate their suggestions, but it has been great seeing them work together. I have learnt that despite their initial hesitation about receiving feedback, once boys get into the routine of doing critiques, they see it as a positive experience that they will enjoy and that will help them produce better designs overall.

I would really like to thank the IBSC and my school, Christ's College, for giving me the opportunity to take part in the action research. Also, thank you to Miss Nicole Billante and Ben Vink from Christ's College who have given me feedback throughout helping me to shape my research into this report.

References

Alber, R. (2012). *Deeper learning: A collaborative classroom is key*. www.edutopia.org/blog/deeper-learning-collaboration-key-rebecca-alber

Carless, D. (2018). Feedback loops and the longer-term: towards feedback spirals. *Assessment & Evaluation in Higher Education, 44*(5), 705–714. doi: 10.1080/02602938.2018.1531108

EL Education. (2016, October 4). *Austin's Butterfly: Models, Critique, and Descriptive Feedback* [Video]. YouTube. https://www.youtube.com/watch?v=E_6PskE3zfQ

Gielen, S., Peeters, E., Dochy, F., Onghena, P., & Struyven, K. (2010). Improving the effectiveness of peer feedback for learning. *Learning and Instruction, 20*(4), 304–315. doi:10.1016/j.learninstruc.2009.08.007

Harackiewicz, J. M., Smith, J. L., & Priniski, S. J. (2016). Interest matters. *Policy Insights from the Behavioral and Brain Sciences, 3*(2), 220–227. doi: 10.1177/2372732216655542

Hattie, J., & Timperley, H. (2007). The power of feedback. *Review of Educational Research, 77*(1), 81–112. doi: 10.3102/003465430298487

Manurung, K. (2012). Creative teachers and effective teaching strategies that motivate learners to learn. *Indonesian Journal of Science Education, 2*(1), 1–8. https://www.researchgate.net/publication/323915278_CREATIVE_TEACHERS_AND_EFFECTIVE_TEACHING_STRATEGIES_THAT_MOTIVATE_LEARNERS_TO_LEARN

Mertler, C.A. (2017). *Action research: Improving schools and empowering educators* (5th Ed.). Sage Publishing.

Mitra, D. (2018). Student voice in secondary schools: the possibility for deeper change. *Journal of Educational Administration, 56*(5), 473–487. https://doi.org/10.1108/JEA-01-2018-0007

Reichert, M., & Hawley, R. (2013). *For whom the boy toils*. International Boys' Schools Coalition. https://www.theibsc.org/uploaded/publications/IBSC_For- Whom-the-Boy-Toils_MEMBERS-ONLY.pdf

Robertson, J. (2017). Rethinking learner and teacher roles: Incorporating student voice and agency into teaching practice. *Journal of Initial Teacher Inquiry, 3*, 41–44. https://ir.canterbury.ac.nz/handle/10092/14638

Toshalis, E. & Nakkula, M. (2012). Motivation, engagement, and student voice. *Jobs for the Future*. https://www.howyouthlearn.org/pdf/Motivation%20Engagement%20Student%20Voice_0.pdf

Viands, T. (2014). The essential characteristics of a boy-friendly environment. https://www.boardingschoolreview.com/blog/the-essential-characteristics-of-a-boy-friendly-learning-environment

Zimmerman, B. (2000). Self-efficacy: An essential motive to learn. *Contemporary Educational Psychology, 25*, 82–91. https://acmd615.pbworks.com/f/SelfEfficacyMotivation.pdf