TEACH[R]

Let me do it and I will learn: Investigating three models of student-centred learning

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Abstract

Three techniques that foster student-centred learning were trialed in Year 10 English and History classes at a small Queensland school. These included the Socratic Seminar, the Graffiti Model and the Pirozzo Matrix. It was found that each of these methods created discussion, involvement, cooperation and learning at many levels. Ideas were shared by students, all students became involved and differentiation of learning was made possible. Overall there was a greater level of cooperation within the class.

> *be cognisant of the values instilled through the teaching strategies [you] choose*

Introduction

An effective teacher, as defined by the education ministers responsible for the *Melbourne Declaration on Educational Goals for Young Australians*, is one who has "the capacity to transform the lives of students and to inspire and nurture their development as learners, individuals and citizens" (Ministerial Council on Education, Employment, Training and Youth Affairs, 2008, p. 11). In order to achieve this aspirational ideal, a teacher must also take on the role of learner. They need to continually reflect on the principles of learning and the unique needs of their students, and to adjust their teaching strategies accordingly.

Background

Teaching practice must embrace differentiation, an intentional matching of the learner's style to strategies that help the learner to achieve their learning goals (Butler, 1993, p. 149). According to education researcher John Hattie (2012), differentiation occurs when the teacher knows "where students are in their learning so they can move them '+1' beyond this point" (p. 97). Although learning is paramount, the Melbourne Declaration proposes that effective teachers will also inspire students to develop something broader than learning goals; they should also instil "national values of democracy, equity and justice, and personal values and attributes such as honesty, resilience and respect for others" (Ministerial Council on Education, Employment, Training and Youth Affairs, 2008, p. 5). While striving to innovate their teaching strategies in order to differentiate the curriculum, a teacher should be cognisant of the values that are being instilled through the teaching strategies they choose. A study was conducted by a secondary teacher in a small Queensland school to intentionally apply these principles by trialing and reflecting on three innovative teaching strategies in a Year 10 class. The teacher reflected on the effectiveness of these strategies in meeting the individual needs of the students and the values that were imparted through them.

The first strategy trialled was the Socratic Seminar, a pedagogy developed by Mortimer Adler and Dennis Gray (Metzger, 1998, p. 240) but based on the ancient philosopher Socrates' position that "no idea can be taught directly... All that we know must be extracted from us through a series of questions" (Estes, Mintz, & Gunter, 2010, p. 190). In a modern Socratic seminar the teacher prepares a series of open-ended questions surrounding a 'big question' which students will be able to answer after considering the smaller questions. The teacher takes a background role and "uses questioning as necessary to help redirect or focus the discussion" (Coke, 2008, p. 29). To participate in the seminar

students are asked to complete a 'ticket assignment' which is typically to read and take notes on a passage that will be the focus of the discussion. The students are then arranged into an inner circle of students who participate in the discussion; and an outer circle of students who observe, take notes and give feedback to the inner circle. Students then swap places and roles. An important goal is for "non-competitive discussion" to take place "in order to gain deeper understanding of the text" (Metzger, 1998, p. 242).

The Graffiti Model was trialled next. It is a type of cooperative learning activity. Typically students will be assigned to groups where they will 'graffiti' the paper that has been allocated to them with drawings or words—questions, statements as issues or comment. This becomes the property of that group. An option sometimes used is for each piece of paper to be passed on to the next group where they tick the concept or idea the previous group had written and that they agree with, and then add their own ideas to the paper (Western Australian Department of Education and Training, 2008). Sometimes students at the final table are asked to synthesise all of the graffiti into a considered response to the question at hand. This means most levels of Blooms Taxonomy of Educational Objectives (Bloom, Engelhart, Furst, Hill & Krathwohl, 1956) have been utilised.

The third strategy chosen for trial was the Pirozzo Matrix. Devised by Ralph Pirozzo in 1997, it blends the rigour of Bloom's taxonomy with the capacity of Gardner's Multiple Intelligences (MI) to engage students (Coote, 2008, p. 14). Bloom's taxonomy identifies six levels of thinking, ranging from knowledge to comprehension, application, analysis, synthesis and evaluation (Butler, 1993, p. 171). Since its inception, Bloom's taxonomy has been widely used by teachers to create a hierarchy within learning activities; however, this approach alone does not account for the developmental states of students and therefore "often becomes the source of much frustration for students" (Butler, 1993, p. 172). Pirozzo proposed that Bloom's taxonomy would be more effective if the various learning styles of students were taken into account, and he created a grid that contrasts Bloom's taxonomy with Gardner's Multiple Intelligences. Gardner described eight 'intelligences' or capabilities as a "means of mapping the broad range of abilities that humans possess" (Armstrong, 2000, p. 1) - visual, kinaesthetic, musical, interpersonal, intrapersonal, linguistic, mathematical and naturalistic. In practical terms, Gardner's Multiple Intelligences are valuable because "if we can engage all intelligences through the instructional strategies we use on a regular basis in our classrooms, we reach each student regardless of his or her particular pattern of intelligence" (Kagan & Kagan, 1998, p. xx). By combining Multiple Intelligences with Bloom's taxonomy, the Pirozzo matrix is a model that "nurtures students' thinking skills and engages them through their preferred learning styles" (Coote, 2008, p. 15) for differentiation.

Method

A case study approach was used to determine the effectiveness of three different learning strategies in one Year 10 class. This methodology was adopted because the objective of the study was to answer questions of "how" and "why" (Yin, 2003). For example, the teacher was trying to establish how different pedagogies may impact the learning, understanding, adoption of values and socialisation of students and why student-centred learning enhances educational outcomes.

A classroom scenario is a microcosm of society that has complex organisational systems in place and intricate teenage relationships at play. According to Easton (2008), this type of combination is difficult to work with and "a case study of a single, or a small number of such entities can provide a great deal of largely qualitative data which can be written up as a case study, offering insights into the nature of the phenomena" (p. 118).

The Socratic Seminar was chosen for a Year 10 English unit on the Shakespearean text *Romeo and Juliet*. Since Shakespearean language typically creates a barrier to understanding, students often reach fairly superficial levels of cognition when encountering Shakespearean texts. It was hoped that a Socratic Seminar would deepen their understanding of the ideas that work beneath the surface of the story of forbidden teenage love. The teacher composed a big question: "Who was to blame for the deaths of Romeo and Juliet?", and prepared a series of open-ended questions relating to character roles and the concept of fate versus fortune in the play. Due to the complexity of the language, the play had been read in class, then as a ticket assignment students were asked to re-read Act III Scene ii, where a distressed Romeo blames 'fortune' for his predicament. The following day the classroom was arranged in the required concentric circles and the process was explained to the students. The teacher posed the big question and prompted discussion with the open-ended questions.

The Graffiti Model was chosen to check for understanding early in the Year 10 History unit on World War II. As several lessons were spent at the start of the unit teaching background information with teacher focused methods, it was felt that a cooperative activity would help the teacher check

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for understanding and identify areas of need. It was also hoped that the cooperative activity would help to move students beyond knowledge to deeper critical understandings of the topic; the teacher therefore prepared question sheets that required some interpretation and critical analysis such as the reasons for the rise and success of Nazism. Two short interactive online quizzes were prepared on 'Kahoot' (Kahoot!AS, 2015) with comparable knowledge questions in order to evaluate knowledge building. One quiz was taken online as a pre-test for comparison.

Campbell and Campbell (1999, p. 63) observed that while Multiple Intelligence theory has for some time been embraced by elementary schools, it is rarely utilised in secondary schools. It was decided to trial the Pirozzo Matrix with the Year 10 History class, and since after some initial teacher focused lessons and the Graffiti activity, the teacher observed some interest in the experiences of Australian prisoners of war, a Pirozzo Matrix based on this topic was created. The tasks varied according to the Multiple Intelligence learning styles, while each column progressed through Bloom's taxonomy with similar content, starting with facts and figures about POW camps and progressing through to specific POW experiences and finally an evaluation of a camp according to the Geneva Convention. The students were prepared by completing a Multiple Intelligence quiz online, and then given the Pirozzo Matrix to choose the learning style they preferred.

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Findings and discussion

1. The Socratic Seminar

As Metzger (1998) admits "Socratic Seminars don't work perfectly at first" (n.p.) and can even be a disaster until the process becomes more familiar to the students. This Socratic Seminar was no exception with students in the inner circle unsure of how to sustain a discussion without being led by the teacher, and the outer circle unsure of what they should be observing. There was, however, some promising discussion and the teacher was pleased with the student focused nature of the pedagogy. Coke (2008) notes that the Socratic Seminar "presents multiple opportunity for differentiated instruction" (p. 29) since it encourages students to participate at varying levels in non-competitive discussion and develop their own ideas and opinions. It is an ideal strategy to encourage students to think deeply about values, in this particular case personal social responsibility. The strategy itself also "foster[s] social cohesion and social inclusion" (Department of Education, Employment and Workplace Relations, 2011, p. 2).

From the teacher's point of view, she was prepared from her reading of the literature for the process to be quite anarchic and that is what she found. It was necessary for the students to become more familiar with the process and develop more confidence in verbalising their thoughts in a structured discussion. The main issue she had with the seminar was the students resorting to heated argument in a superficial way, rather than proper debate/discussion. Again, this is not surprising as this is a learned skill. From observation however, despite the bickering they were actually being forced to express their opinions and appeared to quite enjoy the challenge. There was 100% participation and engagement, which was a good outcome with this particular class.

Formal evaluation of the impact of the Socratic Seminar was not feasible, however, students were asked to self-evaluate their participation, and demonstrated deeper understandings of the text. It was felt that future use of the Socratic Seminar may be a valuable way of encouraging students to develop and express their understanding of literary texts as they become more familiar and comfortable with the process. Students did comment however, about how heated the process became. When asked whether they saw any potential in the strategy as an ongoing tactic, their answers included:

> *It could work with the right people.*
> *I think the group was a bit too big and it might work better with a smaller group. [R5]*

> *It was interesting to see how some people thought about the question and gave their opinions but other people just fought over it.*
> *It was fun and it made us think about the reasons for our opinions. [R10]*

2. The Graffiti Model

The students responded enthusiastically to the cooperative nature of the activity, engaging positively with the questions, while the teacher circulated to help direct the discussion where students were struggling. It was observed that the activity encouraged students to share information and develop understandings. At the end of the activity students were able to share responses, although some groups needed assistance with consolidating all of the responses into a summary. The teacher then administered the second knowledge quiz with all students achieving a higher score. While a quiz only assesses knowledge questions, deeper levels of understanding were observed during the final discussion. Additionally, as a cooperative activity, there were positive observable effects such as increased collaborative behaviour. Studies

show cooperative activities such as this not only encourage learning but also affect "acceptance of and tolerance for diversity" (Arends & Kilcher, 2010, p. 310), which are important values for students to cultivate.

3. The Pirozzo Matrix

An immediate rise in enthusiasm was noted as the students were presented with a wide choice of options, but it was also noted that some students, unaccustomed to such autonomy, had difficulty narrowing down their choices and required assistance with this. It was noted that seven of the 21 students selected the 'intrapersonal' column as they were reluctant to move beyond the normal boundaries of a research task; however, it is possible that with future similar opportunities they may have greater confidence to choose less traditional options. The unit culminated in an afternoon where students presented their research, including some speeches, role-plays and an interpretive dance. Students completed a feedback survey that indicated most students had greater engagement with the material and embraced the level of autonomy they had in their research. Assessments were graded and found to be of a high standard. The teacher also observed throughout the learning process a greater level of cooperation between students, discussing and assisting each other with research, and deeper class discussion due to the way the tasks led to analysis, synthesis and evaluation. It was observed that the learning process fostered values of cooperation and knowledge sharing, in addition to the national values of justice that are inherent in the research topic.

Future research directions or recommendations

The study and reporting of different student-centred learning techniques is a rich area for further research. This paper reports on just three techniques. More work needs to be done on other methods such as card clusters, one minute challenge, KWL (know, want to know, learnt), brainstorms, circle talk, jigsaw method, head talk, placemat, mindmaps, 90 degree thinking, Venn Diagrams—and even more. By trialing these methods and reporting the results, other teachers will benefit and be inspired to use student-centred learning in a broader smorgasbord of learning activities.

Conclusion

At the end of the trial period it was noted that the Year 10 class was working more cooperatively and responsibly together. The teacher was confident that involving the students in differentiated, cooperative strategies was a factor in this positive growth, since "Celebrating the diversity of others gives students an appreciation of the wonderful qualities other individuals possess" (Kagan & Kagan, 1998, p. 12.1). The Pirozzo Matrix revived enthusiasm for research and motivated students to work together; the Socratic Seminar deepened textual understandings, encouraged value-based judgments of the text, and fostered cooperative discussion; the Graffiti Model activity encouraged sharing of ideas and collaboration as well as contributing to the students' personal values. These student-focused strategies provided observable opportunities for students to participate in learning activities in non-threatening ways, thereby encouraging them to move ahead with learning at their own pace. As a result of the trial, the teacher concurred that "By honouring the uniqueness of every student, we establish a nurturing classroom atmosphere in which our students are free to blossom" (Kagan & Kagan, 1998, p. 12.1). TEACH

> *"Celebrating the diversity of others gives students an appreciation of the wonderful qualities other individuals possess"*

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