Education Research Schools Partnership

Borden Grammar Research 2024-45

The following research efforts are provided by a dedicated group of teachers engaged in educational research at Borden Grammar. The research ideas reflect their ongoing work as part of the ERSP initiative.

Reflections on Practice: An Early Career Teacher's Exploration of Compromised Femininity

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In OECD countries, 70% of teachers across all education sectors are women. The number of female teachers is highest in early schooling and gradually decreases. In early years education, women represent 97% of teachers, 83% in primary, and 63% in secondary.

Concerns about the 'feminisation' of education have been raised by policymakers, who advocate for increasing the number of male teachers, especially in primary schools, to counteract the perceived educational 'delay' of boys (Cushman, 2010). Central to this idea is that male teachers might offer more balanced forms of masculinity, positively influencing students' attitudes toward school. However, empirical evidence seems to contradict this argument, with studies indicating that having same-gender teachers doesn't impact students' behaviour or cognitive skills, dispelling the notion of gender-specific teaching being beneficial (Neugebauer, Helbig, & Landmann, 2010).

Evidence shows teachers' perceptions of boys' 'learning styles' influence classroom practices. In studies by Lingard et al. (2009), some teachers justified creating 'boy-friendly' classes and tailoring the curriculum to suit boys' 'learning styles'. The result led to depicting boys as more active learners and simplifying the curriculum by assuming that boys have shorter attention spans. Carrington and McPhee (2008) noted changes in lesson content and delivery based on teachers' beliefs about boys' competitiveness and a perceived tendency to adopt a joking behaviour. Thus, while teachers might not recognise students' gender as affecting their pedagogical choices, research indicates that certain gender-related beliefs can and do influence how teachers adapt their teaching.

As a female early career teacher, I find myself grappling with the concerns raised in such studies. When reflecting on my practice, I am conscious of adjusting it to create a more "boy-friendly" classroom. Moreover, I worry that I am compromising my femininity in doing so and opening up the question of how detrimental this is to my students' educational development and my own professional identity.

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Quotation Retrieval: removing the abstraction

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In 2015, the government significantly altered GCSE English Literature exams, transitioning them from an open-book to a closed-book format. Michael Gove, the Education Secretary at the time, viewed this change as a means to elevate standards and bolster exam rigour. These reforms were grounded in the belief, championed by Gove and supporters, that memorising quotes through rote learning could amplify creativity, comprehension, and engagement with the entirety of the text (Guardian, 2012).

Marsh's study (2017) delves into teachers' reactions to the shift from open to closed-book exams, shedding light on their sense of diminished control over their teaching approaches. Several teachers voiced their disillusionment with teaching English literature, citing a decline in their enthusiasm as it became overshadowed by concerns about completing the curriculum within allocated timeframes. Moreover, teachers observed that the overwhelming emphasis on students memorising extensive quotations tended to divert attention away from exploring alternative interpretations, structural elements, and language devices in the texts.

Marsh's study seems to suggest an erosion of critical literacy and an actual cultivation of a lifelong engagement with books and poetry. Burgess et al. (2022), in a recent report considering the characteristics of effective teaching, conclude that the most important activities for English teachers to engage in revolve around fostering interactions and discussions among students with their classmates. Burgess et al. (ibid) argue that allocating more time to such practice correlates to higher GCSE results within English and holds the potential to instil greater enjoyment and sustain interest in literature.

This study aims to explore methods that broaden the scope for student engagement with literary texts, moving beyond mere exercises centred on retrieving quotations. Our goal is to shift from a somewhat abstract approach that is primarily focused on memorising and applying quotes in written responses to one that encourages students to establish more meaningful connections between the quotes and the text itself.

By facilitating deeper connections between quotes and their application, we aspire to cultivate a more comprehensive understanding and interpretation of the material among our students. What some argue is a richer and more enjoyable experience with the literature under examination.

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Does anyone care about the professional development of late-career teachers?

J Williamson (Science Department)

Teachers in the latter stages of their careers have been described in contrasting ways. Huberman (1995) portrayed them as entering a phase of emotional detachment and disengagement, a time to "survive, dissatisfied, in an alien climate" (Day, 2017, p. 49). Conversely, other perspectives suggest that late-career teachers exhibit positive attributes rooted in their strong sense of agency and professional identity (Lowe et al., 2019). In sum, some teachers transition contentedly toward a fulfilling career end as retirement approaches, while others grapple with dissatisfaction in an unfamiliar environment.

The question of their professional development further complicates the ability of late-career teachers to navigate their final years in education. While the professional growth of staff is increasingly regarded as essential, the specific professional development needs of late-career educators are frequently overlooked. Despite the significant attention directed towards early-career and mid-career educators, those in the later stages of their teaching journey also need opportunities for growth, fulfilment and support.

Professional development could encompass various elements tailored to these seasoned educators' specific needs. Late-career teachers possess extensive experience that should be utilised in mentoring others. Encouraging late-career educators to reflect on their teaching journey, document their experiences, and share their wisdom with others is a fulfilling part of professional development. As retirement approaches, guidance and resources for transition planning are essential but not considered relevant to a school's teaching and learning focus.

Late-career teachers might experience burnout or feel detached from the changing educational landscape. Supporting their well-being and acknowledging their contributions to the school community may be a necessary boost to their morale and motivation.

Investing in the professional development of late-career educators acknowledges their dedication and ensures their wealth of experience benefits the education community as they transition into retirement—a perspective often overlooked. This study aims to shed light on the unique professional development needs of late-career teachers, with the ultimate aim of better understanding how to sustain their engagement, satisfaction, and success in the profession.

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Enhancing writing proficiency via discourse and cognition in Biology?

C Aldam (Science Department)

The complexity of specialised vocabulary and abstract concepts often poses a significant challenge for students learning biology. The subject's extensive range of specific terms, unfamiliar in everyday language, is crucial to the learning process and the accurate grasping of topics such as cellular processes and genetic mechanisms. In brief, mastery of scientific communication stands at the core of effective biology education.

The Royal Society of Biology emphasises that a biology curriculum should extend beyond mere memorisation of facts. It should expose students to biologists' methods, thinking processes, and reasoning, enabling them to construct a comprehensive scientific explanation (RSB, 2020). However, due to stringent government control over the science curriculum, there's been an overwhelming emphasis on factual knowledge. This focus on knowledge has significantly reduced the time for hands-on investigation and in-depth discussions of biological concepts. Moreover, there's a prevailing emphasis on school performance measures, with schools increasingly held publicly accountable based on test outcomes. As a result, it could be argued that a culture of "teaching to the test" has emerged, prioritising memorisation over discursive and explorative learning opportunities.

In such a high-pressure context of achieving results, I intend to consider my approach to teaching and cultivating students' scientific writing abilities within this study. While I model, structure, and offer support in scientific writing tasks, I am left questioning whether I allocate enough time for students to actively exchange ideas and collaboratively develop concepts through discussion. The result is to ask whether, as Biology teachers, we might lean too excessively towards students achieving correct written answers rather than fostering their oral and written expressions to construct more well-rounded scientific explanations.

Although my classroom is a collaborative environment already, fundamental to this study is to explore and substantiate further opportunities for collaboration amongst my students. As Gillies (2019) suggests from his extensive research review, collaborative learning significantly enhances problem-solving, particularly through discussions, aiding scientific communication and enhancing cognitive understanding.

While I consider my classroom already collaborative, this study aims to delve deeper into and substantiate additional opportunities for collaboration among my students. As part of the investigation, I will consider the 'think talk write' approach initially suggested by Huinker and Laughlin (1996). The approach offers a simple but effective cooperative learning method for application in biology lessons. Stemming from a constructivist approach to provide students with processing time (thinking), a collaborative discussion phase to establish collective comprehension (talking), and finally, concluding with a written summary reflecting the students' thoughts (writing). Applying this method to extend scientific writing exercise, it is hoped that it empower students to effectively communicate scientific ideas, reducing the barriers they may have to engage in and successfully build articulate, scientifically sound answers.

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Navigating the Shift from GCSE to A-Level Chemistry: An insight into Students' Experiences

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While secondary education acknowledges the substantial increase in challenge from GCSE to A-level, there needs to be more research exploring the transition of students into A-level studies, particularly from a student viewpoint. This study, primarily focused on Chemistry, attempts to delve into the feelings and experiences of a group of students in a boy's grammar school as they transition from Year 11 into their initial year of A-level studies.

As an enthusiastic A-level chemistry educator, I can't help but feel disheartened when students, for various reasons, struggle to engage with their A-level studies. I am driven to understand better these reasons to support my students more effectively. As outlined in government subject comparability studies, the shift to A-level Chemistry presents a significant hurdle for most students. Scott (2012) suggests that the heightened demands of A-levels revolve around increased conceptual understanding and subsequent workload. This is in line with Powell's (2017) findings, where participants reflected on how they had been surprised by the scale and complexity of their workload, which made it more difficult for them to remain organised. On the other hand, as Stubbs (2023) concluded, it seems that there are multiple aspects of studying A-levels that can support or frustrate the satisfaction of students' basic psychological needs for autonomy, competence and relatedness.

From our own experience at Borden, and in line with previous studies, A-level Chemistry students find the course's academic demands more challenging than GCSE and must grapple with time management and applying themselves to the required study. However, attributing students' successful transition solely to their application and heightened academic demand seems overly simplistic. Open to consideration also has to be the greater emphasis that is placed on critical thinking, analysis, and application of knowledge in A-levels. In addition, we also need to consider the social, emotional, and psychological adjustments that students have to make.

Addressing these challenges should involve:

- Providing adequate support, guidance, and resources to help students adjust to the increased demands.
- Fostering a supportive learning environment.
- Assisting students in developing the necessary skills for success at the A-level stage.

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But how we best do this can only really be arrived at by better understanding the students' thoughts and feelings. Stubbs' study (2023) highlights that, although studying A-levels can be difficult, stressful and overwhelming (Nash *et al.* 2021), it can also help students to develop healthily by presenting them with opportunities for agentic behaviour (autonomy); the development of their academic and organisational abilities (competence); and the cultivation of meaningful relationships (relatedness). Stubbs' study (2023) provided strong foundations for future research in this area, and suggested that educational practices that provide explicit guidance on how to adapt to, and cope with, the demands of studying A-levels, and allow students to feel included, listened to and supported, are critical to promoting positive learning experiences and smooth transitions into and out of this stage of education.

In order to better address the challenges and implement the strategies above, *i.e.* creating a nurturing learning environment and helping students develop the requisite skills for success at the A-level stage is crucial, it's essential to rely on a deeper understanding of students' thoughts and emotions. Hence, the basis of this study is to examine the perspectives of a group of A-level Chemistry students at two key junctures: initially in Year 11 when they are deciding to pursue A-level chemistry and later during the midpoint of Year 12.

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