

A critical evaluation and the identification of next teaching and learning steps focusing on a case study of an individual learner or a group of learners, based on an observed critical incident.

Essay submitted for module ECAD6007: Who am I teaching?

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Introduction

In this essay I will be exploring literature relating to a critical incident that I observed during a two day observation exercise at a Welsh comprehensive school. In this introduction I will explain the key concepts of the new Welsh Curriculum and the meaning of a critical incident. The next section looks at the role of critical reflection in teaching practice and will be followed up by a description of the critical incident I have focused on, including its links to the four purposes and what made it a critical incident. Following this will be a literature review exploring the themes of the critical incident. Finally there will be a reflection and evaluation that will include looking at my own professional development before a conclusion.

The term critical incident is potentially misleading. Tripp (2011) explains that a CI in society can lead to significant change. Tripp (2011) explains that in the classroom a CI is created and is “an interpretation of the significance of an event...a value judgement we make” (Tripp, 1993:8). Joshi (2018) gives the example of a teacher not just accepting a pupils routine lateness but asking and then investigating why they are routinely late with a view to changing their practice. Richards and Farrell (2010) also see CI as an opportunity to evaluate routine classroom habits and by doing so give the opportunity for teacher development, a factor very significant in the new Welsh curriculum.

In 2015 at the behest of the Welsh Government (WG) Professor Graham Donaldson published ‘Successful Futures’ which has brought about ambitious curriculum reform in Welsh education. Donaldson (2015) listed four equal purposes for what a learner in Wales should be:

1. Ambitious, capable learners, ready to learn throughout their lives
2. Enterprising, creative contributors, ready to play a full part in life and work
3. Ethical, informed citizens of Wales and the world
4. Healthy, confident individuals, ready to lead fulfilling lives as valued members of society

These four purposes will be referred to during the course of this essay. The next section will look at the role of critical reflection.

The role of critical reflection.

As Evans (2022) notes the curriculum's four purposes are intended to develop and promote high standards of professionalism within the workforce. Within the educational sector and teaching in particular there was to be "a strong focus on pedagogy...and a self-improving system" (Evans, 2022:380). Donaldson (2015) listed twelve pedagogical principles that should be embedded in teaching practice and consequently "...the formation and subsequent growth of teachers as reflective practitioners" (Donaldson, 2015:73).

As part of the ongoing curriculum reform WG published Professional Standards for Teaching and Leadership which featured six key areas, one of which was professional learning (Welsh Government 2019). This included continue professional development where teachers will be trained and commit to being research informed practitioners and use continuous critical reflection as part of their development.

There are various models of reflective practice but the one I shall briefly explain is Brookfield's four lenses. The reason I have chosen this is because it has strong connections to the new curriculum. Supporting this view is Fook (2015), who sees critical reflection as a sub section of reflective practice and one more geared to bring about transformation as "not all reflective practice will lead to critical reflection – that is, to fundamental changes" (Fook, 2015:442). Fook's (2015) view is that Brookfield's model can challenge power-based classroom assumptions in the pursuit of fundamental change. As Ndebele (2014) points out when using Brookfield's model, a teacher must "not be blinkered but be open and receptive to various forms of feedback on their practice" (Ndebele, 2014:534). Brookfield (1995) model incorporates four lenses for critical reflection and the first is the teachers own experience as both a learner and teacher. This allows a teacher to self-analysis their actions and their emotions. The reference to a learner as well as a teacher fits comfortably with the curriculums aim of teachers committing to professional learning. The second lens is the eyes of the pupils and requires pupil's voices to be heard, which in essence a form of research. The penultimate lens is using colleagues as critical friends and the fourth is familiarity with related literature. In regard to this final lens Ndebele (2014) points out that it is important to not focus solely on literature related to a specialised field, as outside reading may give greater opportunity for making relevant and effective change.

Ndebele (2014) used this model to reflect on an action research model and found that the first lens was “one of the most effective strategies for improving teaching skills” (Ndebele, 2014:540). The reason for this was because without it the feedback from the other three could be disregarded or ignored. As mentioned earlier Fook (2015) sees Brookfield’s model as critical reflection rather than reflective practice but does say that the former cannot occur without the latter and I would argue that the analysis of the autobiographical experience represents the embrace of reflective practice that acts as a gateway to the other lenses. Therefore to be an effective reflective practitioner a teacher must be prepared to accept criticism or, conversely, as Flaman and Johnson (2012) consider when a colleague is unwilling to take the difficult step of criticising a peer. This indicates that teachers should also consider their role within the third lens and be comfortable with how to use appropriate language to navigate being a critical friend. In this essay though it is not my place to be critical of a teacher but instead to consider a CI from the perspective of my professional development as a critical and research led practitioner.

Observation school and class context

In keeping with BERA guidelines I cannot name the school, but it is an English medium comprehensive school in a small town in Carmarthenshire in September 2022. The schools last Estyn inspection took place in 2019 and stated that there were 922 pupils aged 11 – 19 on the school roll. Estyn (2019) noted that the school is based in a semi-rural area and its pupils tended to come from West Carmarthenshire and East Pembrokeshire. The number of pupils who receive free school meals was 8%, which is half of the national average but 30% were considered to have special educational needs, a number that exceeds the national average of 23% (Estyn, 2019). While educational delivery is predominantly through the English language an estimated 20% of pupils speak Welsh and there is a bilingual class in each year (Estyn 2019). In the summary of Estyn’s (2019) report it describes the school as “a warm and inclusive school which is at the heart of the community it observes” (Estyn; 2019:3).

The Critical Incident and the four purposes

The critical incident (CI) that I will be analysing in this essay occurred during the first lesson of the first day of my visit and is the second CI in my appendixes. It was a year 7 mixed ability and mixed gender class of 28 pupils and the subject being taught was Welsh as a

second language. The lesson lasted one hour, and the CI and its build up took place in the first ten minutes. I will now describe the critical incident and then link it to Donaldsons four purposes that I explained in my introduction. The class came from their whole year assembly and when I arrived at the classroom they were lined up outside the door. This was the beginning of year 7s fourth week in the school and I got the impression that the teacher was keen on reinforcing behavioral standards and subject expectations whilst spending time getting to know his students. He began asking if anyone had played sports that weekend, first asking girls as a forest of boys hands shot up. He kept the questions and interactions short and sharp but always ended with a 'good job' or 'well done' but didn't let any pupil monopolise his time by describing in detail the try saving tackle they had made on Sunday. He interjected this by sequestering two pupils to hand out the text books. As they were doing this he switched up the dialogue to having the pupils repeat the Welsh for the days of the weeks and the months of the year, using classroom displays to scaffold this exercise. In the middle of this two pupils arrived later and quietly came in, sat down and joined in. He maintained his mantra of saying 'good job' and interspersed the work with explaining that this was about reinforcing the basics of the Welsh language. There are several potential critical incidents including pupil engagement, behavioral management and how to start a lesson. However, I will be focusing on the use of repetition and specifically rote learning and memorization.

In discussing this in relationship to the curriculums four purposes it is pertinent to not just consider the concepts but also the context in which the teacher was practicing. The Welsh Government has set a target of a million Welsh speakers by 2050 in its Cymraeg 2050 document (Welsh Government, 2017). Therefore in this lesson the CI learning could be related to a number of purposes. Firstly under purpose two the pupils will be ready to play a full part in life and work, under purpose three they will be knowledgeable about their culture and ready to become citizens of Wales. In regard to the fourth purpose they will have the skills and knowledge to manage everyday life independently. I believe it is in the first purpose of being ambitious, capable learners that this C.I. has the strongest links to as the teacher is attempting to support pupils in building up a body of knowledge, solving problems and communicate effectively using the Welsh language. We know from the 2019 Estyn report this school is predominantly an English language one and the challenge of

learning a new language and solving problems could make pupils more ambitious and capable learners.

Literature review

To begin with it is important to define rote learning and place it within educational theories. Mayer (2002) defines rote learning as “knowledge acquisition in which students seek to add new information to their memories” (Mayer, 2002:228). According to Ng’andu et al (2013) rote learning consists of drill or repeat learning and is situated within a behaviourist pedagogical approach. Ng’andu et al (2013) refer to the work one of the founders of the behaviourism school, John B Watson, and his view that learners were passive, blank slates and learned in response to stimulus. In rote learning the stimulus is the information provided by the teacher and the repetition by the students is done with the aim of remembering the information. Kirschner, Sweller and Clark (2006) define teaching and learning “...as a change in long term memory” (Kirschner, Sweller and Clark, 2006:75). Watson (2017) sees learning as a gradual process of which the first two laws are frequency of the information and recency of its teaching, both of which will prevent it falling out of a pupil’s memory. It is easy then to see how rote learning could have been mistaken for reinforcing memorisation and creating learning through recency and frequency.

Donnelly and Witshirek (2014) believe that the prevailing pedagogical narratives of the 21st century in countries of the global west is one of constructivism. Indeed, behaviourist techniques such as direct instruction and rote learning are frequently see as “old fashioned and ineffective” (Donnelly and Witshirek, 2014:131). Bodner (1986), foreshadows this by discussing the increasing relevance of constructivism in future curriculum design. Bodner (1986) discusses the theories of one of the founders of constructivist approaches, Jean Piaget, referencing the contention that “knowledge is constructed in the mind of the learner” (Bodner, 1986:135). In a constructivist school rote learning is seen as surface learning and while the element of repetition might aid memory, it is the what and not the why the pupil is remembering and recalling.

Hammond (2022) believes repetitive, rote learning is a negative experience because it creates passive students who develop a dependency on the teacher as they only have to repeat what they are told to say to achieve success. Hammond (2022) points out that repetitive rote learning is a one size fits all approach that cannot accommodate the range of

abilities, personalities and countless other complexities that exist in a room full of school children whereas a constructivist approach can. Bird and Dale (2022) are in support of this view, describing rote learning as “memorisation by repetition without explanation of principles” (Bird and Dale, 2022:274). They liken it to remembering the lyrics of a song but not understanding their meaning and as a pedagogy it promotes performance rather than knowledgeable understanding. Supporting this is Ng’andu et al (2013) believe that behaviourism and by extension rote learning is “not appropriate for all subject matter” (Ng’andu et al 2013:71) as it is unable to teach complexity.

Two counter arguments that speak out in favour of rote learning are Wu et al (2020) and Battino (1992). Wu et al (2020) researched teaching maths in Southeast Asia and found that teaching by rote was both common and successful. From their research they concluded that rote learning was an effective form of memorisation that allowed the retention of knowledge and one which did not require unnecessary mental exertion in the retrieval of this knowledge. They found that the knowledge established through rote learning provided the foundation that would support other teaching techniques that focused on understanding. Battino (1992) was a chemistry lecturer, and he wrote his article in a chapter of a journal titled ‘Provocative Opinion’ where he spoke in favour of rote learning. The year and title are further evidence of the move away from behaviourist and direct instructional approaches in education as suggested by Donnelly and Witshirek (2014). Battino (1992) begins by asking, “we try to teach critical thinking and reasoning, but is all this effort necessary?” (Battino: 1992:135). He supports this argument in two ways. Firstly, he discusses the Otto cycle in relation to learning to drive, explaining that you do not require full understanding of the internal combustion engine to drive a car. From his own practice he explains that he has first year university students learning the chemical elements of the periodic table by rote and chanting the PH scale and its definitions. He justifies the use of rote learning by saying that this foundation of chemical knowledge may be all some students need or want to learn. This view relates to the earlier proposition by Bird and Dale (2022) around educational performance rather knowledge and could be seen to support Ng’andu et al (2013) who believe that rote learning is limited. However, Battino (1992) has a final and compelling argument for rote learning which is it embeds in the minds of his learners the key vocabularies, or “specialist language” (Battino, 1992:136).

Rosenshine (2012) presented his 'Principles of Instruction' for classroom practice based on extensive research that explored cognitive support techniques, the actions of teaching experts and cognitive science including the acquisition and retention of information and it is this part of his work and his first principle of instruction that relates to questioning and memory retrieval. His first principle of instruction is:

"Begin a lesson with a short review of previous learning: Daily review can strengthen previous learning and lead to fluent recall" (Rosenshine (2012:20)).

Rosenshine (2012) conclusion is that there exist basic skills and that these should be practiced until they become automatic. Repetition in the form of daily review is one way to do this with the desired result of basic skills, in this case days of the week in Welsh as defined by the teacher, becoming "automatic, thus freeing working memory capacity (Rosenshine, 2012:20). This free memory capacity can now be used for the learning of new and complex material.

Rosenshine (2012) promotes the importance of repetition but does not overtly support rote learning but his focus on basic skills becoming automatic does have some symmetry with Wu et al (2020) on retaining basic knowledge and Battino (1993) of learning subject specific language. Donnelly and Witshirek (2014) themselves believe that rote learning has a place in teaching techniques and should not be completely dismissed out of hand, particularly in respect to language and memorisation.

Bird and Dale (2022) explain that the more links between teaching practices and the cultural context they take place in the more likely it is that a student will learn. Brookfield (2015) tells us that "skilful teaching is teaching that is contextually informed" (Brookfield, 2015:25). This is to say that where education it is taking place can determine what techniques may work the best. Wu et al (2022) do discuss that the cultural and social structures of Southeast Asian societies may allow rote learning to take place more effectively than in other parts of the world. It could also be inferred that students in university have a history of academic achievement, are voluntarily engaged in their studies so may be more accepting of Battino's (1992) rote teaching.

At this stage it would not be presumptive to conclude that rote learning has little or no place in modern pedagogy. However, even those who are against its use will highlight that it is far

from obsolete. Bird and Dale (2022) are critical of western education proud, but misleading, perception of having done away with learning by rote. They cite evidence from trade-based environments, medical training for anatomy and primary schools which still teach times tables by rote. Supporting this is the work of Steffansson, Jonsdottiri, Jonmundssen et al (2022). They discuss how rote learning is used in the trade-based environment of drill instruction across several countries. The same equipment and same teaching were used in countries as diverse as Iceland and Kenya and traditionally relied heavily on rote, repetitive learning which build operational understanding in learners. This may suggest a between theory and practice and an explanation for this comes from Hammond (2022) who believes that it is curriculum designers and not practitioners who promote a constructivist approach.

. Indeed, it might be that behaviourism thrived in an industrial age when work such as on assembly lines was repetitive. What is interesting is that in areas where there is support for rote learning, e.g., languages, context and meaningfulness exist prior to the learning as pupils have already grasped the understanding of what days of the weeks and months of the year are.

Much of the debates around the merits of rote learning and to a certain degree behaviourist versus constructivist pedagogies is the relationship between knowledge or information and knowledgeable understanding of said information. Battino (1992) provocatively (of course) calls the focus on constructivism as 'a sacred cow' (Battino, 1992:135), beyond criticism. More recently and amicably Ng'andu et al (2013) suggest that behaviourism is present in constructivism as it supports the establishment of what becomes prior knowledge used to gain new knowledge, and repetition and rote learning has a part to play in this. Mayer (2002) and Stein, Carnine and Dixon (1998) may offer some way through this pedagogical chicken and egg maze. Mayer (2002) criticism of rote learning is saved for "when the teachers concentrate solely on rote learning" (Mayer, 2002:229) In this scenario a pupil may have knowledge but not understand how to use it, but, if rote learning is treated as educational scaffolding it can provide a launchpad for meaningful learning. Stein, Carnine and Dixon (1998) found that rote learning, including whole class repetition, to be an effective technique for memorisation, if the context of the information is clear and cite learning a language as an example as a pupil already understands the concepts being taught. In conclusion there is a reasonable argument that rote learning does still exist and should

not be completely disregarded as a component of a teacher's tool kit, however if it is to be used then its role is as a part of repetition to aid memorisation and not as stand-alone teaching strategy.

Reflection

Following on from the considerations of the penultimate paragraph of my literature review it may well be that the rote learning I witnessed was not in fact rote learning as it was not a sole teaching approach. Obviously, it did have the element of repetitive drill training, a definition of rote learning as suggested by Ng'undu et al (2013) but it was only a small fraction of a lesson which involved other activities. There are also valid points around the context of when and why it happened. In keeping with Rosenshine's (2012) first principle it was a recap of previous learning which took place at the beginning of a lesson. The class are year 7 who had not completed a half term in their new school, if this subject was new to them then how they were learning could be considered in step with what they were learning. If they had been in key stage four preparing for assessment then this repetitive rote exercise may not have been appropriate. Another, and slightly more contentious, contextual issue echoes the suggestion by Bird and Dale (2022) that rote learning may still be used in primary education settings. If these pupils had used rote learning previously then it might be a familiar, comfortable and effective learning technique. A third and final context could be that as it was the first lesson of the week it actually gave the pupils a useful and successful, albeit easy five minutes in which to warm themselves up to learning because like Hammond (2022) suggests success in rote learning comes from repeating what the teacher says. In respect of this point the all pupils participated and the two late pupils entered a classroom fully engaged in learning and immediately joined in the activity

My learning experiences of rote teaching harks back to chanting my times tables in the 1980's. I eventually remembered them but it was only in the 1990s that I understand that 7×3 could also mean $7 + 7 + 7$. Therefore I had the information but not the knowledge, although this did not stop me getting a B in Maths GCSE. Obviously the repetition meant I also learned when to use them, in the same way I know when to change gear when driving with only a vague understanding of the engineering involved. As I researched this essay I particularly honed in on the idea of rote learning to teach subject specific knowledge or language. As an aspiring geography teacher there are many key terms which pupils will be

required to learn. I am interested in how to impart these key terms into pupil vocabulary so, in keeping with Rosenshine first principle, their minds are freed up for further learning. This identifies an area of professional development, namely how I might ensure memorisation and understanding is in place for future learning, this includes areas around dual coding, cognitive overload and memory elasticity I had no space to explore in this instance.. This is more of a constructivist view but I believe repetition could have a part to play and by extension an element of rote learning. One of the reflections I will take away from this essay is to not be too dismissive or equally too precious about approaches I might use in the classroom.

In the introduction I explained the importance of a CI by discussing Tripp (2011) view that it should bring about significant change and Richard and Farrell (2010) call for it to be used by teachers to evaluate routine classroom habits. I am not a teacher and therefore this is an exercise in establishing good practice in regard to critical reflection. Critical reflection models such as Brookfield's (2015) four lenses provide structure to do this. Certainly my own experience in this essay of exploring a controversial subject in a balanced way has begun to create a familiarisation with literature, but it has only been the smallest tip of a large iceberg. This demonstrates the value of being a research based practitioner. This has also been a good exercise in being a critical friend and understanding that this is not the same as criticism. Going forward understanding the difference will be important when professionals begin to feedback and be critical on my own fledgling practices.

Conclusion

As discussed in the section on the role of critical reflection the WG identified six key areas for professional standards for teaching and leadership including the ongoing professional development of teachers resulting in a workforce trained and committed to being research informed practitioners who use continuous critical reflection. In this essay I believe that I have begun my training to do this by identifying a CI and then engaging with a range of literature sourced from both academic and government. Through this I have a basic roadmap of how to take a routine occurrence and critically reflect on it, including models which can be used. In the literature review Bird and Dale (2022) discussed performance rather than knowledge. Performance has inescapable links to space and place, citizenship and through them children's geography. Bauman (1991), a leading thinker in these areas

describes performance as action and that the execution could be done for many reasons. A pitfall of using critical reflection models could be perceiving them as a requirement to give lip service to and merely performing them. This is an approach that has elements of rote learning – I must do it, so I will do it and do it by repeating the answer I am told. Real critical reflection means going beyond the performance and embracing the structure of the models that will allow the creation of a developmental space for the deep and sincere critical reflection that can bring about real change.

References

Battino, R., 1992. On the importance of rote learning. *Journal of Chemical Education*, 69(2), p.135-138

Bauman, Z. (1991), *Modernity and ambivalence*, Cambridge, Polity Press

Bird, C.H. and Dale, M., 2022. Education and discipling in a performance-based or rote learning context. *Missiology*, 50(3), pp.273-289.

Bodner, G.M., 1986. Constructivism: A theory of knowledge. *Journal of chemical education*, 63(10), p.873.

Brookfield S 1995. *Becoming a Critically Reflective Teacher*. San Francisco: Jossey Bass

Brookfield, S.D., 2015. *The skillful teacher: On technique, trust, and responsiveness in the classroom*. John Wiley & Sons.

Donaldson, G., 2015. *Successful futures: Independent review of curriculum and assessment arrangements in Wales*. Welsh Government.

Estyn, 2019

Evans, G. Back to the future? Reflections on three phases of education policy reform in Wales and their implications for teachers. *J Educ Change* **23**, 371–396 (2022).

<https://doi.org/10.1007/s10833-021-09422-6>

Flaman SE, Johnson SM 2012. Teacher evaluation: What's fair? What's effective? *Educational Leadership*, 70(3): 20-25.

Fook, J., 2015. Reflective practice and critical reflection. *Handbook for practice learning in social work and social care: Knowledge and theory*, 3.

Hammond, L., 2022. Attitudes toward Direct Instruction in Western Australian primary and secondary schools. *Teaching and Teacher Education*, 112, p.103651

Joshi, K.R., 2018. Critical incidents for teachers' professional development. *Journal of NELTA Surkhet*, 5, pp.82-88.

Kirschner, P.A. Sweller, J., and Clark, R.E., 2007. Why minimally guided teaching techniques do not work: A reply to commentaries. *Educational psychologist*, 42(2), pp.115-121.

Mayer, R.E., 2002. Rote versus meaningful learning. *Theory into practice*, 41(4), pp.226-232.

Ndebele, C., 2014. Using evaluation as action research: Reflections on teaching practice using Brookfield's Four Lenses Model. *The Anthropologist*, 17(2), pp.533-541.

Ng'andu, F.H., Haambokoma, N. and Tomaida, M., 2013. The Contribution of Behaviourism Theory to Education. *Journal: Zambia Journal of Education*, 4(1), pp.58-74.

Richards, J. C., & Farrell, T. S. C. (2010). Professional development for language teachers. Cambridge: CUP

Rosenshine, B., 2012. Principles of instruction: Research-based strategies that all teachers should know. *American educator*, 36(1), p.12-19,39.

Stefansson, G., Jonsdottir, A.H., Jonmundsson, T., Sigurdsson, G.S. and Bergsdottir, I.L., 2021. Identifying rote learning and the supporting effects of hints in drills. *arXiv preprint arXiv:2108.12288*.

Stein, M., Carnine, D. and Dixon, R., 1998. Direct instruction: Integrating curriculum design and effective teaching

Tripp, D., 2011. *Critical incidents in teaching (classic edition): Developing professional judgement*. Routledge.

Watson, J.B., 2017. *Behaviorism*. Routledge.

Welsh Government, 2019, Professional standards for teaching and leadership. Pdf [professional-standards-for-teaching-and-leadership-interactive-pdf-for-pc.pdf \(gov.wales\)](https://gov.wales/professional-standards-for-teaching-and-leadership-interactive-pdf-for-pc.pdf)

Welsh Government, 2017, Cymraeg 2050: A million Welsh speakers. PDF. [WG37249 \(gov.wales\)](#)

Wiltshire, K. and Donnelly, K., 2014. Review of the Australian curriculum final report. eaching practice. *Intervention in School and Clinic*, 33(4), pp.227-233.

Wu, Y.J., Carstensen, C.H. and Lee, J., 2020. A new perspective on memorization practices among East Asian students based on PISA 2012. *Educational Psychology*, 40(5), pp.643-662.