

“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.”

INTRODUCTION

The purpose of this essay is to critically evaluate a self-chosen case study from a group of learners based on a classroom observation, where a typical incident was recorded, then transformed into a critical incident and later reflected upon to hopefully inform and improve teaching and learning practice.

As the critical incident forms the bedrock of this work, it is of great importance to create a clear definition of the term and its meaning. Typical incidents occur all the time in the classroom. It may be the way in which a teacher gives feedback to his or her pupils, or the way a teacher addresses different behaviours from pupils. These incidents only become critical when we observe them and attach significance or meaning to them and ponder its consequence and influence for learning (Tripp, 2011). As so many incidents occur throughout the course of one lesson, it is nearly impossible and impractical to focus on them all at once. Therefore, I will record a total of four incidents (see appendices 1-8) and subsequently narrow my focus down to one single critical incident of particular interest. Focusing on one critical incident, I will discuss three related key research areas using relevant literature to support my discussion.

Finally, I will use this information to identify the next teaching and learning steps. As teachers, reflective practice is a great diagnostic teaching tool which helps develop our understanding of how to create the right set of circumstances for effective learning to take place. Thus, with the application of critical incidents, it should help us focus on transforming the teaching practice by enabling critical reflection (Larrivee, 2000; Pollard and Triggs, 1997). This will ultimately improve both teaching and learning simultaneously.

OBSERVATION

The school used (School X) for this research shall remain anonymous for this study in accordance with BERA's ethical guidelines for education research (BERA, 2018), in that we should "respect the privacy and dignity of the school's community". However, we can disclose key contextual information regarding the school for which I can use for the purpose of this essay. As with any other research this information is important as it is not only used to evaluate and form part of the discussion, but also so it can be used in qualitative evaluation against other pieces of work.

The school is a secondary comprehensive English medium school based in South Wales, consisting of approximately 1250 students of mixed gender, with pupils aged between 11-19. The percentage of students receiving free school meals (FSM) has been recorded (3-year average, 2015-2018) over the whole school as 8.1%. The school has an estimated budget of £4,266 per pupil, a pupil teacher ratio (PTR) of 16.5, and an average pupil attendance of 94.5% (Mylocalschool.gov.wales, 2019).

For my research, I have focused on a case study. A case study is merely the focus on an 'instance in action' at a real point in time within a closed system (Cohen et.al. 2003). This focus is on one article, such as a particular individual, a group of learners, or a community. One notable strength of using case study to observe a critical incident in my research methodology is that it is a quick and in-depth technique to gather qualitative data for investigation (Angelides, 2001). However, as the 'case' is so narrowly focused, it can be difficult to use the findings in comparison to others, ultimately impacting upon reliability and repeatability.

For this case study, the lesson which was observed (see appendices 1 & 2) was a mixed gender, mixed ability year 9 art class, where all children were aged between 13-14. There was a total of 27 students within the class (12 male, 15 female), 1 teacher, and 4 observers. The teacher leading the learning had over 25 years of teaching experience, all of which was within the art department.

The evidence gathering technique employed to collect data for this piece of educational research was classroom observation. The observation method allows us to gain understanding into particular telling situations, and as methods and methodology form the very basis to any scientific study, they also are therefore of primary importance in educational research (Cohen et.al. 2003).

By observing a classroom whilst recording information, one can effectively and purposefully collect live and real-time data about the learning events and/or teaching practices in everyday circumstances. As there are different types of observational methods, a method of best fit must be used to make the research justifiable and the outcomes effective.

Observation methods can be structured, in that one goes into a situation with a pre-determined focus and hypothesis, and they can also be unstructured, where one observes and records the information as events unfold and later decides upon their significance (Cohen et.al. 2003). In relation to observation methods and critical incidents, it is worth pointing out that if you go into an observation with a planned incident in mind, you may miss an event that holds greater significance for learning than a pre-determined one. Therefore, this rationale justifies the choice for an unstructured observation in my methodology, where I observe the class as a whole and allow my critical incident to in a sense chose itself relative to my perception of significance. Although you could further argue that my observation method is semi-structured, as my field notes (appendices 1,3,5,7) follow a framework of general pre-set questions regarding the lesson (Fletcher Wood, 2016) to provide further information on learning. Also, I have followed a framework for reflection (ARC - Assisted Reflective Conclusions – see appendices 2,4,6,8) to help draw out information from the observation.

It is pertinent to state that there are also many other observational techniques that can be used for scientific research in educational study. There are quantitative methods where we take numerical data for analysis. This can take the form of recording time and sample events, tick charts, graphs, sociograms, and histograms for example (Kumar, 2019). With this in mind, I believe a qualitative written approach, whereby I deduce a narrative from a given event, provides me with a more detailed insight to my critical incident when compared to a quantitative observational approach (Kumar, 2019), and therefore allows for a greater and more in-depth discussion which may be more beneficial for reflection and pedagogical progression. However, a limitation of this technique is that it assumes the observer's prior knowledge is complete, where in reality this may not be the case. Also, observer bias can be of concern, as the observer may focus in on an event or area of learning which is more attractive to him or herself, or that they already have more understanding of than other areas. Nevertheless, I am confident that this technique is still best suited for the purpose of this research.

The critical incident that forms the basis of this research refers to the varying levels of engagement and achievement for boys and girls in education, specifically to KS3-4. My chosen critical incident stemmed from the clear divide in classroom seating arrangement,

which immediately caught my attention, where all the boys were sitting on the opposite side of the class to the girls. This became my primary focus during the lesson and within a few minutes of the class starting it was obvious that there was a clear gender divide. Firstly, the girls as a collective group seemed far more focused on the drawing task, which was being continued on from a previous lesson. The boys themselves seemed generally less on task, appearing mostly disengaged, many playing with their stationary and pencil cases on their desks rather than engaging with their task, particularly as the session drew to an end. Whilst the teacher was delivering their instructions the girls were clearly absorbing the information provided, questioning the teacher, discussing the task and seemed interested and ready to learn. This showcases one of Successful Futures four purposes where the girls showed themselves to be ambitious, capable learners who are questioning, enjoy solving problems and are ready to learn. (Donaldson, 2015). Contrarily, not one boy participated in the class discussion, with the majority of them keeping their heads down and avoiding eye contact when the teacher posed questions to the class. It was not clear if this was solely disengagement or also a lack of confidence for the boys, in a subject that may not have been one of their strengths, something which is highlighted in Successful Futures where individuals are hoped “to have the confidence to participate” (Donaldson, 2015). Furthermore, the girls in the class completed the task much quicker than the boys, they appeared to enjoy the challenging task assigned to them, taking care to complete their drawing to a high standard. According to Successful Futures, all learners should be able to “set themselves high standards, and seek and enjoy challenge” and moreover “overcome challenge”, which is particularly pertinent in regards to the boys in this class (Donaldson, 2015). Finally, another interesting element to my observation of gender differences within the lesson was that the teacher spent the majority of her time working with and encouraging the boys, helping them to complete the task at hand. Meanwhile the girls continued with their work confidently and without hesitation. It was clear that the teacher had formed a strong, positive relationship with the boys as they listened well when she worked with them individually. This was an excellent example of healthy learners who can “form positive relationships based upon trust and mutual respect”, as promoted in Donaldson’s Four purposes (Donaldson, 2015).

Taking this critical incident, of gender division within a classroom setting, into consideration, and utilising the different observations I collated over the course of the lesson, I am confident that I have been provided with an array of interesting and topical areas to research and discuss within this essay.

LITERATURE REVIEW

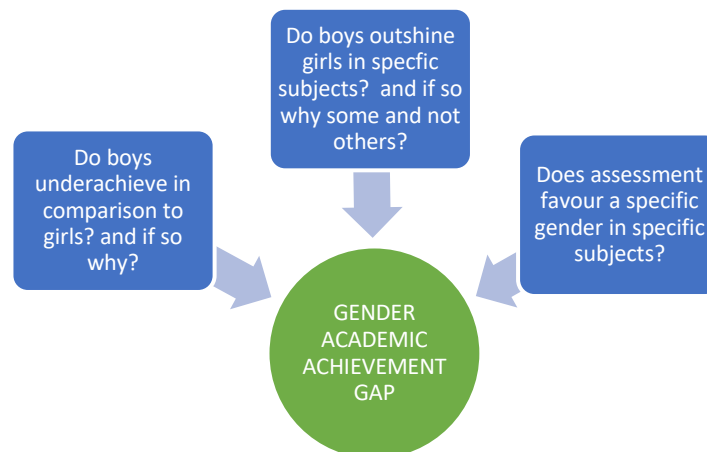


Figure 1. Key areas of research relating to the differences associated with gender and pupil attainment.

As my critical incident showed a clear divide of gender in school in terms of behaviour, engagement and potentially attainment, I have decided to look deeper into other difficulties that gender produces, which may carry more weight in terms of my understanding and reflective practices as a progressive teacher. Figure 1 shows the main research questions and key areas that I will delve into in order to open up possible implications of my observed critical incident.

It has been well documented worldwide that there is a gender academic achievement gap (GAAP) between male and female learners in education (Borgonovi, Ferrara and Maghnouj, 2018; Head, 1999; Moss, 2007; Jackson, Paechter and Renold, 2010). This divide of gender and attainment is a real social issue, and needs attention and research. To back up this GAAP with evidence, data shows that boys achieve less A*-C grades in GCSE examinations results taken in Wales, England and NI than that of girls the same age. 2006 GCSE results across the UK show that girls of white ethnicity who were not on free school meals (FSM) achieved more 5 A*-C grades than boys of similar background, 65.7% and 56% respectively. These percentages can be more or less halved for children on FSM (Jackson, Paechter and Renold, 2010). Coming back to the present day, this GAAP is still seen, and even though GCSE results across the UK have improved overall (academic year 2018-19: now approx. 72% of girls achieve 5 A*-C; 63% for boys), these results have been recorded to show a similar pattern in gender attainment even 13 years later, see figure 2 (Allen-Kinross, 2019; Joint Council for Qualifications, 2019). However, it must be noted though that the biggest differences in results found between girls and boys are seen in obtaining grades A*-C, and the achievement gap is less when solely comparing A grades (Head, 1999). Overall, this is obviously a cause for concern, and must be factored into the way in which lessons are being

planned and co-ordinated to maximise the learning outcomes and experiences equally for both boys and girls. To take this matter further in terms of research and educational improvement, we must firstly begin by trying to uncover the reasons for such a divide.

All human behaviours are ultimately governed by underlying biology, and there are obvious different physical biological characteristics between the sexes. These differences in physical biology give rise to the argument then that intellectual and cognitive ability and subsequent school performance is defined and potentially limited by our pre-determined genetic material (Head, 1999). This is something I find difficult to accept, as I have seen countless individuals achieve both extremely high and low in education, and in life, regardless of gender and age. Hargreaves, Homer and Swinnerton (2008) describe the view of that gender attainment differences as the result of cognitive abilities as outdated. To back this up, Gibb, Fergusson and Horwood (2008) concluded that the reason for this gender divide is not caused by cognitive ability or function, as their studied students, both male and female, achieved similar IQ test scores. Their results further show and acknowledge that boys in the classroom show clear differences in terms of behaviour than girls. Boys largely tended to be more restless, distracted and showed less attention to detail than their gender counterparts. Boys also generally group together to develop group cohesion, which further drive behaviour patterns (Head, 1999). Essentially these findings postulate that social factors could be more of the leading cause, and then these social factors lead to behavioural outcomes which have a knock-on effect for learning and exam results. This to me demonstrates that the issue of GAAP is much more complex than simple a biological reason, and that there are more varied causes in combination which lead to its result.

GCSE examination grade C or above (2019 results)

Theme	Subject	% of boys achieving	% of girls achieving
Close results	Chemistry	89.6	90.7
	Biology	89.0	90.3
Boys 'overachieving'	Economics	81.8	81.6
	Leisure & Tourism	65	53.5
	Maths	59.9	59.2
	Physics	91.1	90.8
Biggest gaps for 'underachieving' boys	Design & Tech.	59.1	75

	English	54.2	70.5
	Food prep. & nutrition	49.6	74.1
	Welsh: second lang.	67.2	83.4
	Overall subjects	62.9	71.7

Figure 2. A table of comparison showing overall UK male and female 2019 GCSE results in relation to subject and attainment gap (Joint Council for Qualifications, 2019).

Despite the fact that girls do outshine boys in GCSE examination results overall, we consistently find that there are specific subjects where boys take the top spot and achieve higher than girls, see figure 2. These subjects are mostly notably, as of 2019, maths and physics.

Since the establishment of GCSE examinations, boys have traditionally yielded better results in mathematics and science related subjects (Head, 1999), and this imbalance is seen from primary aged children (Arnup *et al.*, 2013) through into adulthood. There is no doubt that STEM (scientific, technical, engineering, mathematical) related adult professions display major segregation of gender, where males dominate the workforce in these sectors (Thébaud and Charles, 2018). This is compelling evidence and offers food for thought, and the cause for this may also give clues to why we see boys achieving relatively higher in these subjects than others.

Specifically to science and mathematics, 2019 GCSE results show boys just edging past girls with A*-C grades in maths as a single subject and physics, with girls marginally (roughly 1% in both) taking the top spot in chemistry and biology (see figure 2). Hargreaves, Homer and Swinnerton, (2008) suggest one reason for boys achieving so well in mathematics in particular maybe linked to the perceived image of the subject. With maths being viewed as a 'masculine' subject, and even simply the already assumed opinion that boys are better than girls at maths may attribute some significance to these performance results, and they may further influence girl's confidence, self-esteem and motivation to succeed in the subject, and potentially even deter subsequent career pursuits (Hall & Hoff, 1988; Hyde and Linn, 2006). We can then assume that this view maybe held similarly for science. A UK based study of 3,000 KS3 pupils across 45 mixed gender secondary schools by Ireson, Hallam and Plewis (2001) looked at specifically the three core subjects (maths, English & science), and how self-perception and self-concept affected attainment against gender. Boys showed to have greater self-concept scores in both science and maths, but much lower in English than girls. This is consistent with 2019 English GCSE results, where boys fell far further behind

girls.

Why then, do boys achieve relatively so poorly in English, versus maths and science, to girls? This arguably may be the more pressing and important question when it comes to differences in gender attainment, as nearly all types of learning are based upon the foundations of literacy. One reasonable proposal to this is that girls engage in reading more frequently than boys at a younger age, and consequently their language and literacy develops to a greater extent (Head, 1999). Punter and Burchell (1996) looked at the actual English GCSE assessment for one examination board, and concluded that the question style for the majority of the paper, such as extended writing, open-ended questions and awareness of audience, favoured girls. Whereas the questions where boys excelled made up the minority of the paper, and included styles such as factual writing, short closed questions, and the interpretation of data. It is with no wonder then that boys are more naturally suited to mathematics and science assessments based fundamentally on the very nature of these topics, which are heavily focused on concise fact and reasoning. This further links with compelling evidence that boys and girls do potentially differ in spatial ability (McGuinness, D.,1993), and as a consequence may adopt different mental strategies for learning, ultimately favouring particular subjects over others.

There is no doubt that gender plays a prominent role in governing student achievement in specific subjects. In summary, all of this research shows that there is not a single standalone reason or answer to why the GAAP exists, but instead that it exists due to the combination of differing social factors, behaviour, learning styles and potentially even assessment bias. (Gibb, Fergusson and Horwood, 2008; Head, 1999; McGuinness, D.,1993; Punter and Burchell, 1996).

REFLECTION / EVALUATION & NEXT STEPS

Implementing continuous reflective practice and self-evaluation into my professional development is key for not only my PGCE year as a student-teacher, but also for my future success as a competent and effective educational practitioner in the many years to follow. The systematic approach of investigation, reflection and discussion/collaboration is arguably the most practical and tangible way in which to benefit teaching in the classroom (Pollard and Triggs, 1997), by making evidence-based informed decisions to improve the learning experiences of my pupils. The success of reflective practice depends heavily on an attitude of open-mindedness, and a willingness to accept that all teaching provides us with an opportunity to learn and to take something away from it. Reflective practice to me makes

complete sense in the process of personal and professional development, and understanding its value, importance and effectiveness early on in my career is something that I will no doubt profit from. To emphasise my point even further, ways and styles of teaching may become stagnant through the natural routine of teaching, and therefore reflective practice allows us to break this pattern by providing a critical evaluation of the learning methods that we use in the classroom (Pollard and Triggs, 1997).

Introducing a written framework for critical reflection is important as it gives us guidelines to which we can use to create structured feedback from our teaching. The framework or model that was used for my particular classroom observations was the ARC (Assisted Reflective Conclusions), which was developed by lecturers at the University of Wales Trinity St. David (see appendices 2,4,6,8). This focused format of identifying, analysing and evaluating what went well and what didn't, gives us the very information to act on, transforming the experience and improving it.

In relation to reflective practice and my critical incident, the literature on the topic of gender attainment is extremely extensive and compelling. This evidence should then have huge ramifications for the way particular subjects are taught to equally benefit both genders. As a teacher of secondary science, components of literacy and numeracy are featured heavily throughout the science curriculum in ways such as the descriptive writing of concepts to the use of tables/graphs, respectively. The implications then of the GAAP in these underlying themes should be visible when teaching my subject. This previously obtained knowledge will equip me with understanding, and therefore I can use strategies in my classroom to hopefully improve it. For example, if I can see some boys are struggling with their use of language when answering particular questions, I can provide constructive feedback and identify where they can improve. The origin of words is extremely prominent in science as many of the terms come directly from Latin, and by focusing on particular themes of words, such as the prefixes "uni", "bi", or "mono", students will further develop their literacy in a subject other than English, boosting cross-curricular activities. Also, by identifying what questions best suit boys will allow me to prepare task differentiation to enhance learning across the classroom, which is the key priority.

The use of AfL (Assessment for Learning) as a formative and constructivist approach in my teaching would provide me with instant feedback from the whole class as individual learners, whilst allowing the pupils themselves to recognise their own strengths and weaknesses (Black et al., 2007; Wallace, 2015). With the use of this in my class, I could identify areas that need further work and development for particular participants, which will help extremely

well in showing the gaps of knowledge for different sexes, and will allow me to adjust my teaching style accordingly.

Another practical solution would be to introduce a seating arrangement of boy-girl-boy-girl. School X does have this in their policy, however this proved to be relatively flexible and non-compliance was frequently accepted by senior management. The classroom I observed did not follow this arrangement. This showed me that ultimately the teacher is in charge of the class, and for the purpose of the observed lesson and subject the teacher did not feel this was necessary. However, I may suggest that the arrangement of mixed-sex seating could improve focus and behaviour by reducing distraction. As mentioned earlier that the work of Gibb, Fergusson and Horwood (2008) showed that boys generally seemed more distracted and restless than girls on classroom observation, then this seating arrangement may be a practical behavioural strategy that may improve classroom behaviour that has the potential benefit of increasing attainment. Maybe this in combination with having students work in pairs of mixed gender for some tasks, using their strengths and weaknesses together, may even lead to greater success in narrowing the gender attainment gap.

CONCLUSION

In conclusion, the use of critical incidents in educational research is an excellent tool that provides us with in-depth and circumstantial evidence that can be further applied to reflective practice, to finally improve teaching and learning in parallel (Tripp, 2011). My approach and classroom observational method was a practical way of researching an area of learning in a real-life situation successfully. By focusing upon one specific incident, this enabled me to understand and investigate a variety of key research topics within that one area, providing more information for reflection. By relating this then to Successful Futures, the new curriculum for 2022 in Wales, we can then see the overarching aims of the learning, and implement strategies which can hopefully fulfil it.

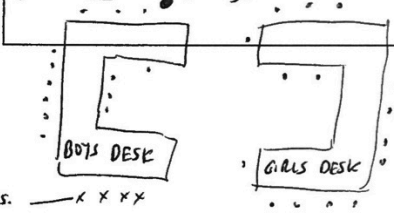
Gender inequality is seen worldwide throughout life, from primary schools to adulthood, and as educational practitioners we must address this in our schools and teaching classes so that all individuals do as well as the next. Following on from my own observations and gaining of understanding through research of literature, I feel that I can now take reflective action in my own teaching practice to address the issue of differences in gender attainment with my pupils. This reflective teaching practice forms a huge part of the professional development of any teacher, myself included, and is something I must strive towards in becoming a successful and effective teacher. The Professional Standards for Teaching and

Leadership, within the QTS descriptor for professional learning, highlights that “the ongoing critical reflection and learning of the teacher” prompts “further professional growth” (Hwb.gov.wales, 2019).

Through this continuous self-reflection and evaluation of my teaching methods, my practice will become dynamic, and will improve not only my teaching, but will also improve the experience of my learners in a positive and impactful way.

APPENDICES

Appendix 1 – Classroom observation notes, lesson 1.

 Prifysgol Cymru Y Drindod Dewi Sant University of Wales Trinity Saint David	Yr Athrofa Addysg a'r Dyniaethau Education and Humanities
OBSERVATION / FIELD NOTES	
(Questions adapted from Fletcher Wood (2016))	
Date: 26th September 2019 Lesson details: ART - YEAR 9 (27 pupils, 1 teacher, 4 observers)	(12 boys, 15 girls)
Classroom culture (Are the students focused on learning?) KIDS MADE TO STAND WITH COATS AND BAGS OFF. SOME MORE FOCUSED ON LEARNING THAN OTHERS.	
Objectives (Is there a clear purpose to the lesson? How do the lesson activities promote that purpose?) • LEARNING OBJECTIVES Laid DOWN AT THE START. (POSITIVE/NEGATIVE SPACE). • OTHER INFO RELATED TO THE TASK PUT ON THE BOARD SO STUDENTS CAN CHECK BACK. * DEVELOPING DRAWING SKILLS	
Direction (Are the students clear about what they are doing and how to do it well?) TEACHER SHOWED STUDENTS AN EXAMPLE OF ACTUALLY HOW TO PREPARE THE WORK/TASK, AND THE BEST WAY TO DO IT. * KEEP THE PENCIL SHARP. TEACHER SHOWS AN EXAMPLE OF HER WORK	No structure as such to the task, quite a few pupils wandering.
Access and challenge (Are all students able to engage in the lesson? Are all students challenged?) SOME ABSORBING THE INFORMATION PROVIDED, OTHERS PLAYING WITH PENCIL CASES/PENS. * SOME STUDENTS APPARENTLY DISENGAGED AND POSSIBLY BORE TOWARDS END OF SUBJECT.	
Homework given research a keyword for the subject. Then apply it in your work	Assessment How does the teacher assess student understanding before, during and after the lesson? How is this used in their teaching? THE TEACHER HANDED PAST WORK TO STUDENTS FROM PRIOR LESSONS TO COMPLETE.
↓ clear objectives in homework + how to do it well.	Specifics / Critical Incidents Are there particular telling moments and examples which it would be helpful to discuss? BOYS LESS ENGAGED THAN THE GIRLS. CLEAR DIVISION BETWEEN BOY AND GIRL SEATING ARRANGEMENT. BOYS ALL ON ONE TABLE, GIRLS ON OTHER. GIRLS COMPLETED TASK FAR QUICKER THAN BOYS. TEACHER SPENT MOST OF LESSON WHICH BOYS ONLY.
GREAT PLenary!	 observers. — x x x x

Appendix 2 – ARC notes, lesson 1.

Model Beirniad Wedi Adfyfyrio (BWA) Assisted Reflective Conclusions (ARC) Model

Dyddiad/Date: 26/9/19

Digwyddiad critigol (Ffocws)/Critical Incident (focus): Male and female student engagement.

Profiad/ Experience	
Feelings "What are your feelings regarding the experience?"	• Children given their own space and time to develop drawing skills. Used their own creativity. • Great feedback to pupils, instant visual and oral feedback. Pupils know where they are in their development.
Remember and Understand "Can you list the aspects of the learning experience that went well?" "What were the elements of the learning experience that were disappointing?"	• Boys grouped together, definitely less productive than girls. • The teacher gave individual feedback to every student, identifying strengths and weaknesses. • Good resources to sketch off. • Teacher focusing on boys more than the girls.
Evaluate and analyse "What will you keep the same to ensure effective teaching and learning in the future?" "What was the cause of the most important disappointing element?"	• It may be the case in Art that giving the students more room for freedom in their work. • All students given the same task, maybe vary this? • School policy stipulates boy, girl seating arrangement. Maybe the children ~~less~~ learn less in this way according to teacher.
Conclusions and actions "What are your possible solutions to the disappointing issues identified?" "What will you do next?"	As male and female student engagement varied greatly within the class, I feel this is a worthy topic to explore. The variation of engagement may ultimately lead to some pupils not achieving their potential over the course of an academic year/full education. I will research around this topic to see if this can be a common theme throughout education.
Y profiad newydd / Transformed experience	

Appendix 3 – Classroom observation notes, lesson 2.



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OBSERVATION / FIELD NOTES

(Questions adapted from Fletcher Wood (2016))

Date:	2-10-2019
Lesson details:	HISTORY - YEAR 9.
Classroom culture (Are the students focused on learning?)	Boys seemed slightly less engaged than girls. Great opener by the teacher to create a theme for the lesson (Topic Jack the Ripper - class entrance music !!).
Objectives (Is there a clear purpose to the lesson? How do the lesson activities promote that purpose?)	Clear purpose from the start - activities are ~~no~~ mainly focused on ~~the~~ writing skills within the topic being taught (Jack the Ripper)
Direction (Are the students clear about what they are doing and how to do it well?)	Feedback orally from teacher consistently throughout the lesson.
Access and challenge (Are all students able to engage in the lesson? Are all students challenged?)	Teacher focuses questions around the classman to attempt to include all students, and get them all engaged.
Assessment How does the teacher assess student understanding before, during and after the lesson? How is this used in their teaching?	Brief introduction relating to previous taught topics
Specifics / Critical Incidents Are there particular telling moments and examples which it would be helpful to discuss?	→ Boys and girls sitting in clear ~~segmented~~ segmentation. → Same class observed as before in week previous, with same seating arrangement. Does this affect learning in different gender groups??

Appendix 4 – ARC notes, lesson 2.



Model Beirniad Wedi Adfyfyrio (BWA)

Assisted Reflective Conclusions (ARC) Model

Dyddiad/Date: 2-10-2019

Digwyddiad critigol (Ffocws)/Critical incident (focus): ~~Feedback~~ Male + female engagement

Profiad/ Experience	
Feelings "What are your feelings regarding the experience?"	• Great engaging introduction - gripping from the start. • Teacher questioning students on their thoughts on the subject being taught - great for developing their views.
Remember and Understand "Can you list the aspects of the learning experience that went well?" "What were the elements of the learning experience that were disappointing?"	• The children were, mostly, gripped by the topic. Some boys staring into space, not listening. • Heavy use of ICT by playing video on screen, some children zoning out. • Girls seemed fully focused and on task.
Evaluate and analyse "What will you keep the same to ensure effective teaching and learning in the future?" "What was the cause of the most important disappointing element?"	• The learners loved the sensory environment. • It helped them understand in the topic in a way words would struggle to describe. • Great use of literacy however to help describe the city of London in the 1800's. • Heavy use of ICT allowed some pupils to switch off.
Conclusions and actions "What are your possible solutions to the disappointing issues identified?" "What will you do next?"	• Different seating plan eg. Boy-girl-Boy-girl. may allow for greater overall pupil engagement. • This may bring the ability of the class up. • Use of less ICT could keep the pupils 'fresher', allowing for more thinking and self input.
Y profiad newydd / Transformed experience	

Appendix 5 – Classroom observation notes, lesson 3.



Prifysgol Cymru
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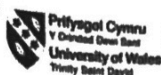
Yr Athrofa
Addysg a'r Dyniaethau
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OBSERVATION / FIELD NOTES

(Questions adapted from Fletcher Wood (2016))

Date:	26-9-2019
Lesson details:	ENGLISH - YEAR 8. WRITE AN ESSAY ON THE CIRCUMSTANCES OF PRINCESS DIANA'S DEATH. ACCIDENT OR MURDER?
Classroom culture (Are the students focused on learning?)	SPLIT IN THE CLASS. SOME LEARNERS ARE MUCH MORE INTERESTED IN PROSPESSING THAN OTHERS. MAYBE A PRE-DISPOSITION? • subject doing
Objectives (Is there a clear purpose to the lesson? How do the lesson activities promote that purpose?)	TASKS GIVEN AT THE START OF THE LESSON. → IMPROVE VOCABULARY AND IMPROVE WRITING SKILLS. → INFORMATION GATHERING FOR ESSAY.
Direction (Are the students clear about what they are doing and how to do it well?)	STARTER TASK GIVES CLEAR INSTRUCTIONS ON HOW TO FOLLOW IT. IF THEY COMPLETE IT, THE TASK IS DONE WELL. FEEDBACK GIVEN BY TEACHER WHO IS TRAVELLING AROUND THE CLASS.
Access and challenge (Are all students able to engage in the lesson? Are all students challenged?)	SIMPLE TASK. SOME ENGAGED → OTHERS STIRLING! Questioning uttered all around the classroom! ← full spectrum of children.
Assessment How does the teacher assess student understanding before, during and after the lesson? How is this used in their teaching? TEACHER ADDRESSES KNOWLEDGE FROM PREVIOUS LESSONS, QUIDS UPON THAT.	Students critiquing a paragraph from the teacher! (ESSAY GIVEN!)
Specifics / Critical Incidents Are there particular telling moments and examples which it would be helpful to discuss?	ALN Students present (approx. 4) → different tasks given ONE CHILD EXTREMELY WELL BEHAVED, SMASHED THE TASK VERY EARLY. SHOWED HIS WORK, NO PRAISE GIVEN. BEHAVIOURAL ISSUES IN THE CLASS — TEACHER ADDRESSING ON 1 CHILD FAIRLY FREQUENTLY — MAYBE LEARNING DISABILITY? QUESTIONS DIRECTED TO STUDENTS AT THE END OF THE SENTENCE i.e. what is a synonym for ^{the word} orchestrate tom? INEFFECTIVE PLENARY → BROKEN BY ANOTHER TEACHER — TOPICS NOT RE-VISITED. IS THE TOPIC ENGAGING? could we use a more engaging or topical issue to explore to improve spelling/writing skills

Appendix 6 – ARC notes, lesson 3.



Yr Athrofa
Addysg a'r Dyniaethau
Education and Humanities

Model Beirniad Wedi Adfyfyrio (BWA) Assisted Reflective Conclusions (ARC) Model

Dyddiad/Date: 26-9-2019

Digwyddiad critigol (Ffocws)/Critical Incident (focus): Differentiation for ALN students.

Profiad/ Experience	
Feelings "What are your feelings regarding the experience?"	- Teacher was great as she involved all pupils in her class during discussions + questioning. - Conspiracy topic was a great hit with the students, even if it was long ago.
Remember and Understand "Can you list the aspects of the learning experience that went well?" "What were the elements of the learning experience that were disappointing?"	- great pace of teaching, not rushed or too slow. - Questions were aimed to everyone, covering all abilities. - Lots of focus on child with behavioural issues possibly affecting the self esteem of higher ability students. <i>(*) ALN students given different worksheets but same task.</i>
Evaluate and analyse "What will you keep the same to ensure effective teaching and learning in the future?" "What was the cause of the most important disappointing element?"	- more use of praise for better behaved students may encourage higher ability learners. - learning objectives were a little lazy. The tasks were clear with instructions but students may be unsure of the overarching aim of essay (which was to improve descriptive writing skills).
Conclusions and actions "What are your possible solutions to the disappointing issues identified?" "What will you do next?"	- Better plan, not existent in lesson. - learning objectives given at start for students to understand purpose of tasks. - ALN students were given work to suit their needs, but maybe more integration and time spent with them.
Y profiad newydd / Transformed experience	

Appendix 7 – Classroom observation notes, lesson 4.



Prifysgol Cymru
Y Drindod Dewi Sant
University of Wales
Trinity Saint David

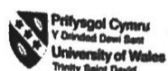
Yr Athrofa
Addysg a'r Dyniaethau
Education and Humanities

OBSERVATION / FIELD NOTES

(Questions adapted from Fletcher Wood (2016))

	Date: 2-10-2019	
	Lesson details: Welsh - Year 9. (24 students.)	
→	Classroom culture (Are the students focused on learning?) Students given tasks from the start! well behaved and little talking. Teacher very bold and in control of class environment.	
	Objectives (Is there a clear purpose to the lesson? How do the lesson activities promote that purpose?) Title given at the start!	
→	Direction (Are the students clear about what they are doing and how to do it well?) Students given task related to spelling mistakes in Welsh. Teacher gives feedback straight after the children have completed the tasks.	
* games used to expand learning (vocab. + sentence structure)	Access and challenge (Are all students able to engage in the lesson? Are all students challenged?) Teacher's style is exciting and energetic. Students engaged due to this. Some students struggling on task, teacher spending time with them.	
→	Assessment How does the teacher assess student understanding before, during and after the lesson? How is this used in their teaching? Questioning aimed at students throughout the lesson. Teacher getting students to repeat back phrases to sink in.	No differentiation shown.
	Specifics / Critical Incidents Are there particular telling moments and examples which it would be helpful to discuss? → critical incident: children were made to stand at the start of class until told to be seated. (Eisteddug)	

Appendix 8 – ARC notes, lesson 4.



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Model Beirniad Wedi Adfyfrio (BWA) Assisted Reflective Conclusions (ARC) Model

Dyddiad/Date: 2-10-2019.

Digwyddiad critigol (Ffocws)/Critical incident (focus): School rules + behaviour - Respect.

Profiad/ Experience	
Feelings "What are your feelings regarding the experience?"	Teacher seemed well respected by pupils, many pupils working for her attention. Great positive, fun and energetic classroom environment.
Remember and Understand "Can you list the aspects of the learning experience that went well?" "What were the elements of the learning experience that were disappointing?"	- Due to high levels of respect, the pupils seemed engaged and showed progression from lesson start to end. - Due to high energy of level sometimes the pace was too fast, pupils falling behind.
Evaluate and analyse "What will you keep the same to ensure effective teaching and learning in the future?" "What was the cause of the most important disappointing element?"	- Respect is an important part of keeping a good relationship with pupils, promoting a progressive learning environment. However making sure students complete tasks and aren't falling behind can be disappointing, however most students on task.
Conclusions and actions "What are your possible solutions to the disappointing issues identified?" "What will you do next?"	- Keeping the pace consistent and introducing more AFL into the lesson may keep the teacher informed of students progression. - Student-teacher relationship seems key to engagement and pupil contribution during lesson. I will think of how to apply in my teaching practices.
Y profiad newydd / Transformed experience	

List of references

Allen-Kinross, P. (2019). *GCSE results 2019: Girls still lead the way over boys*. [online] Schools Week. Available at: <https://schoolsweek.co.uk/gcse-results-2019-girls-still-lead-the-way-over-boys/> [Accessed 10 Oct. 2019].

Angelides, P., (2001). *The development of an efficient technique for collecting and analyzing qualitative data: The analysis of critical incidents*. International Journal of Qualitative Studies in Education, 14(3), pp.429-442.

Arnup, J., Murrihy, C., Roodenburg, J. and McLean, L. (2013) *Cognitive style and gender differences in children's mathematics achievement*. Educational Studies, vol. 39, no. 3, pp. 355.

Black, P., Harrison, C., Lee, C., Marshall, B. and Wiliam, D. (2007). *Assessment for Learning*. Maidenhead: McGraw-Hill International (UK) Ltd.

Borgonovi, F., A. Ferrara and S. Maghnouj (2018), *The gender gap in educational outcomes in Norway*. OECD Education Working Papers, No. 183, OECD Publishing, Paris,

British Educational Research Association (BERA)., (2018). *Ethical guidelines for educational research*. 4th edn. Available at: <https://www.bera.ac.uk/publication/ethical-guidelines-for-educational-research-2018-online#intro> (Accessed: 30/09/2019).

Cohen, L., Manion, L. and Morrison, K. (2003) *Research Methods in Education*. 5th edition. London: Routledge

Donaldson, P. (2015). *Successful futures: review of curriculum and assessment arrangements* [online] GOV.WALES. Available at: <https://gov.wales/successful-futures-review-curriculum-and-assessment-arrangements> [Accessed 18 Oct. 2019].

Fletcher-Wood, H., (2016). *Ticked Off: Checklists for teachers, students, school leaders*. Carmarthen: Crown House Publishing.

Gibb, S.J., Fergusson, D.M. and Horwood, L.J., (2008). *Gender differences in educational achievement to age 25*. Australian Journal of Education, 52(1), pp.63-80.

Hall, C.W. and Hoff, C., (1988). *Gender differences in mathematical performance*. Educational Studies in Mathematics, 19(3), pp.395-401.

Hargreaves, M., Homer, M. and Swinnerton, B. (2008). *A comparison of performance and attitudes in mathematics amongst the 'gifted'. Are boys better at mathematics or do they just think they are?* Assessment in Education: Principles, Policy & Practice, 15(1), pp.19-38.

Head, J., (1999). *Understanding the boys: Issues of behaviour and achievement*. London: Routledge.

Hyde, J. and Linn, M. (2006). *Gender Similarities in Mathematics and Science*. Science, 314(5799), pp.599-600.

Hwb.gov.wales. (2019). *Professional standards - Hwb*. [online] Available at: <https://hwb.gov.wales/professional-development/professional-standards/> [Accessed 16 Oct. 2019].

Ireson, J., Hallam, S. and Plewis, I., (2001). *Ability grouping in secondary schools: Effects on pupils' self-concepts*. British Journal of Educational Psychology, 71, pp. 315.

Jackson, C., Paechter, C. and Renold, E. (2010). *Girls and education 3-16*. Maidenhead: McGraw-Hill/Open University Press.

Joint Council for Qualifications (2019). *GCSE (Full Course) Results Summer 2019 - JCQ Joint Council for Qualifications*. [online] Available at: <https://www.jcq.org.uk/examination-results/gcses/2019/main-results-tables/gcse-full-course-results-summer-2019> [Accessed 10 Oct. 2019].

Kumar, R., (2019). *Research methodology: A step-by-step guide for beginners*. London: Sage Publications Limited.

Larrivee, B., (2000). *Transforming teaching practice: Becoming the critically reflective teacher*. Reflective practice, 1(3), pp.293-307.

McGuinness, D. (1993). *Gender differences in cognitive style: Implications for mathematics performance and achievement*. In L. A. Penner, G. M. Batsche, H. M. Knoff & D. L. Nelson

(Eds.), *The challenge in mathematics and science education: Psychology's response* (pp. 251-274). Washington, DC: American Psychological Association.

Moss, G., (2007). *Literacy and gender: Researching texts, contexts and readers*. London: Routledge.

Mylocalschool.gov.wales. (2019). [redacted] [online] Available at: [http://mylocalschool.gov.wales/School/\[redacted\]](http://mylocalschool.gov.wales/School/[redacted]) [Accessed 16 Oct. 2019].

Pollard, A. and Triggs, P., (1997). *Reflective teaching in secondary education: A handbook for schools and colleges*. London; Weidenfeld & Nicolson.

Punter, A. and Burchell, H., 1996. *Gender issues in GCSE English assessment*. British Journal of Curriculum and Assessment, 6, pp.20-23.

Thébaud, S. and Charles, M., (2018). Segregation, stereotypes, and STEM. *Social Sciences*, 7(7), p.111.

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

Wallace, S., (2015). *A dictionary of education*, 2nd Edition. Oxford: OUP.