

University of Wales Trinity Saint David

-

The Learner: Who am I Teaching?

ECAD6007

A Critical Evaluation and the Learning Steps
Focusing on a Case Study of an Individual Learner
or a Group of Learners, based on an Observed
Critical Incident

Student Number: 4004467

Introduction

This essay will consist of an evaluation of a critical incident within a primary education classroom. The critical incident has been observed and evaluated using Tripp's methodology. Tripp's (1993) pedagogical theory consists of critical incident analysis according to individual's interpretation and acknowledgement of an event or events that occur throughout the school day which appears to be important and have significant impact. This approach focuses on reflecting on significant events in order to gain a perspective of impact, deeper understanding of what underpins practice and what outcomes come of the incident. This reflection is then used to further develop understanding and knowledge with the intention of improving teaching practice with justification in their approaches (Tripp, 1993).

Throughout this essay, the aim is to develop reflective skills for own practice within my classroom-based experience to continue to progress to next steps. Critical incidents occur continuously throughout the school day, and when dissected and analysed, understanding of what underpins the practice and the theoretical ingraining is recognised which develops understanding of significance to the approach which can then be integrated into or influence own practice (Shandomo, 2010). This is purely dependent on individual interpretation and therefore will continue development in fitting our own classroom needs to context, relevant research and theory. Throughout observation, a range of incidents occurred and were recorded and are evidenced within the appendices, however one has been selected to be analysed within greater depth throughout this essay. This incident will be explained within its specific context and discussed in greater detail throughout within relation to the new curriculum for Wales, relevant theory and surrounding literature. To conclude, a personal reflection will be presented to show understanding and a route for progression in my own practice going forward.

The Role of Reflection

Reflection has a key role within educational practice for learning and professional development. Practitioners aim to continually develop and better their practice with a more in-depth understanding of theory and knowledge to promote a high standard of teaching and learning (Poet et al, 2010). In aid to this, Redmond (2014) explains that higher levels of thinking are involved within the reflection process and is also a significant component of deeper learning. While reflection appears to be continuous and a natural re-occurrence within day-to-day practice, reflection consists of thorough engagement and physical experience to link and gain a comprehensive understanding of practice in relation to theory, literature and knowledge for justification (Ottlesen, 2007). Teachers are one main of many components of pupil's academic achievement and outcomes. Therefore, it is essential that competence is prevalent within day-to-day teaching and learning (Egan and Grigg, 2017). It is reiterated that successful education systems are limited to the success of the teachers within it (Barbour & Mourshed, 2007). This portrays the significance of reflection within the role to contribute to transform and exceed and avoid restrictions within pupils learning (Harris et al, 2010).

Reflection is also supported throughout the curriculum for Wales to observe, monitor and review steps for progression. Throughout the curriculum, it is a key tool in delivering high-quality education and care to pupils. It goes on to explain how it is a fundamental aspect of education and helps practitioners to recognise and acknowledge positive aspects, strengths, weaknesses and areas for improvement (Welsh Government, 2023). The Welsh government reflective practice toolkit lists a series of steps which require action to achieve quality improvement and take practice forward. These include, generating reflective questions, identifying strengths and weaknesses, making a manageable and achievable plan to bring this thinking forwards and then acting and measuring implementation and impact (Welsh Government, 2023). Professional development within the education reform in Wales has significant focus on reflection through engagement, enquiry, research and innovation to meet professional standards. This is supported and promoted throughout Wales via professional development reviews (Welsh Government, 2012). For newly qualified teachers, reflection is supported by the Welsh government by evidencing work against professional teaching standards and reviewing with their mentor to ensure they are recognising areas for improvement and next steps to reaching these standards (Welsh Government, 2012). Donaldson (2015) highlights the importance of teacher knowledge around pedagogy and the application of knowledge throughout planning and practice to achieve good teaching. This along with the professional standards embedded throughout the teacher education reform within Wales shows a clear importance for teachers' ability to continually develop professionally and assert knowledge and understanding to practice via reflection in practice (Furlong et al, 2021). Evidently, reflection is prevalent not just as a trainee teacher, but throughout educational careers throughout Wales and therefore is a crucial aspect to understand and undertake (Bonta and Galita, 2020).

Reflective theories such as Dewey's Reflective Theory (1933) is utilized throughout teaching careers and teacher training (Hatton and Smith 1995 and Rodgers 2002). Dewey's Reflective Theory (1993) originates from difficult situations or events which activate the reflective thought process. This approach promotes questioning after the event has occurred to develop greater understanding and a wider breadth of knowledge to contribute to planning the next steps (Rodgers, 2002). Within education, this theory would be applied by reflecting on past tense situations and dissecting it while applying knowledge to plan for future steps. It was then recognised that there were restrictions within Dewey's theory of reflection, and it was later expanded by Schon (1983) to remove the limitation to reflecting after practice. Schon (1983) further developed Dewey's theory to allow practitioner to use their current knowledge base to reflect during practice also known as 'in-action'. This method focuses on practitioners adapting and reforming as fit throughout practice as they continue drawing from pedagogical knowledge and theory or the professionals (Schon, 1991).

The Context of the Critical Incident

While discussing the school context all information provided is recorded within line with the GDPR Law (2018) and BERA guidelines (2018). All information poses no personal or professional risk to the participants in the observation and all sensitive data will be anonymised. Giving context will allow insight to the circumstances and conditions and environment in which the observation has been recorded in. The ESTYN report is recent with valuable and up-to-date information giving an accurate insight to the

current position and conditions within the setting, however, due to the difference in dates between the observation and the report, there is potential difference in exact statistics which should be noted.

The setting observed is English medium primary school which has a total of four hundred and thirty-five pupils between the ages of three to eleven years old of which are mixed gendered (ESTYN, 2023). A recent ESTYN report conducted within the school places twenty-nine percent of children eligible for free school meals over a three-year average. Around twelve percent of children are recognised to have additional learning needs which is below the national primary average of sixteen percent. Also recorded is an average of ten percent of children who speak English as an additional language of which exceeds the national average recorded level of six to seven percent recorded in 2015 (ESTYN, 2023). However, all recorded percentages for the school's current context have declined from their previous report conducted within 2014 (ESTYN, 2014). The class observed was a year four class which would usually align to working within or towards progression steps two and three within the curriculum for Wales (Welsh Government, 2022).

The Critical Incident

The observation of the critical incident being discussed throughout the assignment is outlined within appendix A within the appendices section. The observation occurred in September within an immersive room and therefore was not in person. The lesson was recorded throughout the summer term of the academic year 22/23 as explained by the class teacher and therefore the students were approaching the end of their time within the year four classroom. It is important to note that due to the observation not being conducted in person, there may be some information and/or misunderstanding of aspects regarding the classroom dynamics, context or environment. There appeared to be around twenty-three children within the classroom at this time and there was also one teacher and teaching assistant within the classroom.

At the beginning of the session, the teacher is at the front of the classroom introducing the lesson. The teaching assistant is with a small group of children at their desks and the teacher explains that this is a lower ability group, and she is there to scaffold and support them throughout the lesson. The classroom is laid out in square tables with around four to six children on each, all facing one another, except one long rectangle table at the front with four children facing the board. The teacher explained that the children were sat according to individual ability groups and needs and one child towards the front of the class has additional learning needs and is sat at the front to assist with these.

The teacher introduced the lesson at the front of the class on the interactive whiteboard. The interactive whiteboard had a picture, and the children were prompted by the teacher to make inferences about the picture. The first task was for the children to think about the picture and come up with their own inferences. To do this, the teacher had already supplied each child with a whiteboard and a whiteboard pen so that they could record their answers. The teacher explained that doing this prior to sharing gave them the opportunity to think and develop their answers rather than being called upon on the spot. This was also explained to be a successful method of assessment for learning to gauge an understanding of where the children are at, their current understanding and ability and give an accurate representation of their current knowledge. This would then be acted upon throughout the session as the teacher would be able to attend to the children who required more support and scaffolding, how to further challenge the

children who required extension and the children who were consolidating their learning. The children were given a few minutes to gather their thoughts before then sharing back to the class. It was later explained that this approach was used to be able to give the children a chance to learn from their more knowledgeable others, to grasp greater understanding of the task at hand and to develop the children's ideas further. To improve engagement, the teacher used reward systems such as dojo points to promote interaction with the task and praising the children for each answer given. The teacher set a limit to the number of answers that would be accepted in order to manage the time of the lesson and keep scheduling for the task. When selecting the children to answer, there was a range of children of different abilities across the classroom and if a child was unsure, the teacher used questioning techniques to develop their answer and scaffold their thinking and explanation. At times, students made inferences that they were unaware of which were pointed out with questioning to gain justification for each answer. The children were then set a group task to complete. Each table was presented with a shoe and was given ten minutes to make inferences about the shoe. The teacher moved around the classroom and interacted with each table asking questions to prompt answers. The children were excited to have the physical object at hand and engagement levels appeared to have declined in the task at hand. The teacher then brought the class back to the task by stopping group work and re-focusing them by talking about one of the shoes and giving examples. All tables were passing the shoe around for each child to have the opportunity to touch, see and smell the shoes. The children were asked to write in their books the inferences made about the shoe. All groups worked well, and the shoe was finally placed into the middle of the table for them to begin writing. However, the rectangular table towards the front of the classroom which had children at either end struggled sharing the object and appeared to begin snatching it off one another as they could not all access the object. The children were off task for a while due to the incident. This was discussed with the class teacher at the end of the lesson who explained that this may be due to one child having specific additional learning needs in which peers can be protective and trying to ensure that this child had access. Another reason was that due to the shape of the table and the children not being within a collaborative workspace, they may have struggled to share access and have come into dispute. The teacher explained that this was not the normal table layout, and this could have potentially been a reaction to being in an unusual social set out in which they were unable to effectively manage. After ten minutes the teacher then shared one another's answers again using hands up to consolidate the learning.

The Critical Incident within relation to the Curriculum for Wales

When observing the critical incident there were clear links to the curriculum for Wales. The curriculum reform has moved the focus from teaching to expected norms over to building individuals to become competent, capable and compassionate citizens according to their own pace and needs (Donaldson, 2015). The transformation to a seamless curriculum which aids in supporting children to become equipped with skills, knowledge and experiences for life-long learning (Welsh Government, 2021). The curriculum's design puts the four purposes at the center of education with the goal of creating and preparing citizens to achieve success within society and the real-life world that is approaching them (Donaldson, 2015).

In analysing the incident within more depth, there are clear links between the observed incident and creating ambitious and capable learners as well as enterprising and creative contributors (Welsh Government, 2022). By giving the children the physical object for exploration allowed them to develop their observational skills, critical thinking and problem-solving abilities. The interactive approach of providing meaningful and practical experience promoted their ability to make real-life connections and apply their prior knowledge and skills to the authentic context. The observed incident allowed the children to use their knowledge and skills and apply it to another context with justification. By giving the children the physical object, they were tasked with problem solving and given the opportunity to share their thoughts with their peers, question through discussion and explain concepts. Donaldson (2015) promotes collaboration within the classroom and explains that it is a key element in achieving success alongside real-world connections. The students had this opportunity by giving practical child-led experiences to engage their senses, investigate and apply their current understanding of the world around them to make these inferences.

Literature Review

Throughout the observation the key element highlighted was the importance of using physical objects to promote experiential learning and providing students with practical experiences to make real-world connections. There is a range of literature and theory around supporting education via exploration and interaction which will be outlined throughout the following review to understand how this can be used as a tool within teaching and learning.

Active learning within education is prevalent throughout teaching and learning today (Welsh Government 2022). Using objects within teaching and learning supports students in gaining a memorable experience to assist in consolidating the learning as well as promoting engagement within the task presented to them (Tutal, 2023). It is stated to allow students to engage their senses in their learning and is a key component highlighted throughout the curriculum reform for Wales (Welsh Government 2022).

This approach to learning is supported by the constructivist theory of learning. This theory disputes successful learning through passive knowledge intake and redirects success from active engagement and experience (Israel and Hein, 1991). Learning is a continuous process which builds upon previous knowledge and understanding and is constructed through the learner's discovery and inquiry (Fernando and Marikar, 2017). The constructivist outlook on education means that practitioners are to follow a practical pedagogy and supply the learners with opportunities to interact within the learning process (Hein, 1991). Piaget (1964) being one of three main psychologists of constructivism, stresses the importance of interaction within learning to gain a better knowledge base. Piaget's (1964) primary focus on engagement with the world around them and their experiences and interactions are what builds on one's cognitive development (Fischer, 1964). This is further complimented by Vygotsky (1978) who also emphasises the learners need to be active in their learning to build knowledge and understanding (Liu and Matthews, 2005). However, while Piaget recognises the importance of individual exploration, Vygotsky highlights that to enhance this active learning process, collaboration is a key factor to introduce (Liu and Matthews, 2005). While both theorists highlight the importance of using real-life

objects within learning to enhance experience, so does John Dewey (1916). Dewey suggests that by relating learning to real-life and creating sensory experiences, students' engagement levels increase, and their active engagement promotes exploration, more in-depth understanding and improves knowledge retention. While the constructivist theory is recognised throughout education in earlier times, more recent research and evidence also suggests that learners do require experience with tangible and concrete objects to gain understanding of concepts (Widiana et al., 2020, p. 297).

As mentioned previously, Vygotsky's constructivism theory places greater focus on social interaction through knowledge construction (Prawat, 1999). This is referred to as social constructivism. Presented throughout the observed critical incident, the learners were given their concrete object and supported to work within groups to build their current knowledge and expand on this through peer interaction, questioning, inquiry and discovery. Vygotsky's sociocultural theory is based on cognitive development construction via concrete material as a scaffold along with more knowledgeable others (MKO's) to develop concepts and cognitive development. Vygotsky produced a zone of proximal development (ZPD) which outlines a structure for knowledge construction. This builds on the theory of current knowledge being built upon independently, which is further supported and built on by social interaction (Prawat, 1999). Research supports social interaction and shows that there are signs of improvement within learners' outcomes when social interaction is promoted and allowed within teaching and learning pedagogy (Wallace and Nixon, 2013).

While constructivist theories have many benefits, it has also been criticised for lack of leadership within the learning. Using objects within lessons usually promotes self-directed activity. Due to lack of guidance within providing concrete experience or objects throughout learning can cause engagement levels to rapidly decrease. If the learners do not relate to, understand or grasp the task, cognitive activity can lead to un-successful outcomes (Kirschner, Sweller and Clark, 2006, p.76). It is also judged due to its lack of inclusivity of lower-level learners. If the learner is working within the lower progression steps, they may not have the ability to construct their own knowledge and would require more direction within their experience to avoid becoming confused or frustrated and decreasing engagement levels (Kirschner, Sweller, and Clark, 2006, p.76).

Further literature explains that when using objects within lessons they need to be carefully considered. While physical objects initially capture the attention of the learners and give practical context to the real-world, they can become a distraction in some scenarios (Brown, McNeil and Glenberg, 2009, p. 161). For example, if the object has additional features, this can lead to off-task behaviors. This can occur when trying to use an object as a representative and the learners may have inability to view the object as what they are meant to represent, this is referred to as 'dual representation' (Fyfe et al, 2014, p. 9-25). In order to ensure that manipulatives used within lessons are successful in aiding the learning process rather than acting as a hinderance, practitioners must have adequate knowledge and experience around usage (Clements, 2000, p.45-60). This can include practitioners attending training to gain confidence and deeper understanding how to incorporate this approach within their classroom.

Furthermore, it is explained throughout the cognitive load theory that tangible objects contribute to reducing cognitive load by offloading mental processes. Cognitive load theory primarily focuses on the limit of the learner's mental knowledge capacity intake which when overloaded, can result in loss of learning. The theory suggests strategies to avoid cognitive overload such as introducing tangible objects to enhance the learning process and allow space for cognitive resources for higher level problem-solving

and higher learning outcomes (Sweller, Ayres and Kalyuga, 2011). Reducing cognitive load to give concrete experiences such as the one observed within the critical incident acts as a visual and sensory aid which contributes to manipulating concepts and promoting deeper understanding and a wider knowledge base (Plass, Moreno and Brunken, 2010).

Throughout the Curriculum for Wales and the four purposes of the curriculum, the learners are to be given the opportunity to become able to problem solve in real-life situations, make sense of the world and develop skill to become confident in learning throughout their lives (Welsh Government, 2022). All of this contributes to preparing and equipping learners to engage with the world around them and make connections (Donaldson, 2015). Throughout, active learning is supported to develop critical thinking and problem-solving skills via authentic experiences. All of what contributes to the learners becoming thriving individuals in their own lives. This is referred to throughout the curriculum as authentic learning which is stated to be where learners actively engage and are successful in learning. By giving concrete objects the learners gain meaningful experiences enabling understanding within relation to real-life context (Welsh Government, 2022). This context allows the children to develop skills such as problem-solving, questioning, taking risks and trial and error, all which aid in developing them for their future (Aynas and Aslan, 2021). This is supported by evidence which suggests that better educational outcomes were seen from context-based learning as opposed to teacher-led instruction (Tutal, 2023). However, it is important to note that this research was impacted by group sizing and smaller groups within particular achieved higher outcomes than larger groups who carried out context-based learning. This acts as justification for learning and can contribute to improvement of engagement throughout and also impact on overall well-being of the learner giving them more confidence and impacting their approach to learning (Welsh Government, 2022).

Reflection for Future Practice

Following the opening of the essay with the explanation and importance of reflection within education and practice, I will be using Gibb's Reflective Cycle (1988) to further continue to generate steps for my own future practice. Gibbs reflective cycle consists of six steps which begin with describing the incident and discussing the feelings of the practitioner throughout the incident before then evaluating and analysing in order to coordinate steps to implement and improve in future practice (Willis, 2010). The description of the incident has been outlined within the critical incident section of the paper and the original observation notes can be found within the appendices under 'Appendix A'. The incident included students completing a task given by the practitioner to complete group work with a concrete object to reference from. Engagement was observed throughout, and levels seemed to fluctuate throughout the activity, while one group stood out to struggle engaging within the learning due to several reasons and the teacher had to bring the class back onto subject throughout the lesson due to the concrete object causing some distraction.

In reviewing literature within relation to the observed critical incident, it is apparent that hands on learning is prevalent within education in the Welsh curriculum reform and is encouraged throughout teaching and learning across Wales. Students' active participation in their learning is embedded throughout the curriculum and gaining real-life experiences through practical engagement and enquiry

contributes to creating ambitious and creative life-long learners (Welsh Government, 2022). This has been influenced by core theories such as Piaget's, Vygotsky's and Dewey's which are still present within today's education system. However, lack of engagement was recognised throughout parts of the lesson, and this as found within the literature could be due to a range of reasons such as, lack of instruction, lack of understanding or inability to lead own thinking and understanding within group work. Research has however shown that despite some downfalls of real-world contextual learning, there seems to be an increase in learners' attainment within using this approach within teaching and learning. Literature suggests that there are impacts on engagement, retention of knowledge as well as consolidation of knowledge while developing key skills for later life. Therefore, in future practice, I feel it would be advantageous to incorporate this strategy within own lessons, however, this would require further training and or understanding around how to utilise objects within lessons to avoid causing hinderance to learning.

Conclusion

To conclude, using Gibbs Reflective Cycle (1988) to reflect on the observed critical incident gave significant insight around implementing hands on learning within the classroom. Throughout the literature, it was evident that many benefits to learners success come from hands-on learning and using objects within the classroom. However, it also pointed out that careful consideration and understanding is required in order to gain success within implementation. Recognition of the needs within the classroom and diversity is essential when planning and preparing lesson plans to gain success. Evidence shows that engagement is key to successful learning and is at the center of teaching and learning within education in Wales. Going forward, in my own practice, creating these engaging experiences for the learners within my classroom will be carefully discussed and considered with the class teacher to determine whether this approach will fit the learners needs before introduction. It would also be advantageous to grasp deeper understanding of the learners before implementation within lessons for appropriate use.

References:

- Aynas, N. and Aslan, M. (2021) 'The Effects of Authentic Learning Practices on Problem-Solving Skills and Attitude towards Science Courses', *Journal of Learning for Development*, 8(1), pp. 146–161. Available at: <https://files.eric.ed.gov/fulltext/EJ1294983.pdf>.
- Barbour, M. and Mourshed, M. (2007) *How the world's best-performing school systems come out on top*, www.mckinsey.com. Available at: <https://www.mckinsey.com/industries/public-and-social-sector/our-insights/how-the-worlds-best-performing-school-systems-come-out-on-top>.
- BERA (2018) *Ethical Guidelines for Educational Research, Fourth Edition (2018)*, Bera.ac.uk. British Educational Research Association. Available at: <https://www.bera.ac.uk/publication/ethical-guidelines-for-educational-research-2018-online>.
- Bonta, E. and Galița, R. (2020) 'TEACHER TRAINEES REFLECTING UPON TEACHER ROLE IDENTITIES', *Journal of Innovation in Psychology, Education and Didactics*, 24(1), pp. 91–112. Available at: https://iiped.ub.ro/wp-content/uploads/2020/05/JIPED_24_1_2020_6.pdf.
- Brown, M.C., McNeil, N.M. and Glenberg, A.M. (2009) 'Using Concreteness in Education: Real Problems, Potential Solutions', *Child Development Perspectives*, 3(3), pp. 160–164. Available at: <https://doi.org/10.1111/j.1750-8606.2009.00098.x>.
- Clements, D.H. (2000) "'Concrete" Manipulatives, Concrete Ideas', *Contemporary Issues in Early Childhood*, 1(1), pp. 45–60. Available at: <https://doi.org/10.2304/ciec.2000.1.1.7>.
- Donaldson, G. (2015) *Successful Futures Independent Review of Curriculum and Assessment Arrangements in Wales*. Available at: <https://www.naswt.org.uk/static/uploaded/ad5b4d73-76eb-462a-8ba00412eb6e572a.pdf>.
- Egan, D. and Grigg, R. (2017) 'Editorial Professional Learning for Teachers in Wales', *Cylchgrawn Addysg Cymru / Wales Journal of Education*, 19(1), pp. 1–15. Available at: <https://doi.org/10.16922/wje.19.1.1>.
- ESTYN (2014) *Inspection | Estyn*, www.estyn.gov.wales. Available at: <https://www.estyn.gov.wales/inspection>.
- ESTYN (2023) *Inspection | Estyn*, www.estyn.gov.wales. Available at: <https://www.estyn.gov.wales/inspection>.
- Fernando, S.Y. and Marikar, F.M. (2017) 'Constructivist Teaching/Learning Theory and Participatory Teaching Methods', *Journal of Curriculum and Teaching*, 6(1), p. 110. Available at: <https://doi.org/10.5430/jct.v6n1p110>.
- Fischer, H. (1964) 'The Psychology of Piaget and Its Educational Applications', *International Review of Education / Internationale Zeitschrift für Erziehungswissenschaft / Revue Internationale de l'Education*, 10(4), pp. 431–440. Available at: <https://www.jstor.org/stable/3442313> (Accessed: 6 June 2023).
- Furlong, J., Griffiths, J., Hannigan-Davies, C., Harris, A. and Jones, M. (2021) 'The reform of initial teacher education in Wales: from vision to reality', *Oxford Review of Education*, 47(1), pp. 61–78. Available at: <https://doi.org/10.1080/03054985.2020.1842180>.
- Fyfe, E.R., McNeil, N.M., Son, J.Y. and Goldstone, R.L. (2014) 'Concreteness Fading in Mathematics and Science Instruction: a Systematic Review', *Educational Psychology Review*, 26(1), pp. 9–25. Available at: <https://doi.org/10.1007/s10648-014-9249-3>.

GDPR (2018) *General Data Protection Regulation (GDPR)*, General Data Protection Regulation (GDPR). Intersoft Consulting. Available at: <https://gdpr-info.eu/>.

Harris, A.S., Bruster, B., Peterson, B. and Shutt, T. (2010) *Examining and Facilitating Reflection to Improve Professional Practice*, Google Books. Rowman & Littlefield Publishers. Available at: https://books.google.co.uk/books?hl=en&lr=&id=QeXAAAAAQBAJ&oi=fnd&pg=PR7&dq=limiting+change+by+teaching+without+reflection+bruster+and+&ots=FhIDC-ep9_&sig=4wScXFr_57bvFY1xT3JCFE8nBlw&redir_esc=y#v=onepage&q&f=false (Accessed: 6 November 2023).

Hatton, N. and Smith, D. (1995) 'Reflection in Teacher education: Towards Definition and Implementation', *Teaching and Teacher Education*, 11(1), pp. 33–49. Available at: [https://doi.org/10.1016/0742-051x\(94\)00012-u](https://doi.org/10.1016/0742-051x(94)00012-u).

Hein, G. (1991) *Constructivist Learning Theory*. Available at: http://beta.edtechpolicy.org/AAASGW/Session2/const_inquiry_paper.pdf.

Israel, J. and Hein, G.E. (1991) *Constructivist Learning Theory The Museum and the Needs of People CECA (International Committee of Museum Educators) Conference*. Available at: http://beta.edtechpolicy.org/AAASGW/Session2/const_inquiry_paper.pdf.

Kirschner, P.A., Sweller, J. and Clark, R.E. (2006) 'Why Minimal Guidance During Instruction Does Not Work: An Analysis of the Failure of Constructivist, Discovery, Problem-Based, Experiential, and Inquiry-Based Teaching', *Educational Psychologist*, 41(2), pp. 75–86.

Liu, C. and Matthews, R. (2005) 'Vygotsky's philosophy: Constructivism and its criticisms examined', *International Education Journal*, 6(3), pp. 386–399. Available at: <https://files.eric.ed.gov/fulltext/EJ854992.pdf>.

Ottesen, E. (2007) 'Reflection in teacher education', *Reflective Practice*, 8(1), pp. 31–46. Available at: <https://doi.org/10.1080/14623940601138899>.

Plass, J.L., Moreno, R. and Brünken, R. (2010) *Cognitive Load Theory*, Google Books. Cambridge University Press. Available at: <https://books.google.co.uk/books?hl=en&lr=&id=mFJe8ZnAb3EC&oi=fnd&pg=PR5&dq=cognitive+load+theory&ots=8xirKeI6Z6&sig=u5KpYeetqYmMIQ9s5DFObISA648#v=onepage&q=cognitive%20load%20theory&f=false> (Accessed: 6 November 2023).

Poet, H., Rudd, P. and Smith, R. (2010) *How Teachers Approach Practice Improvement*, eprints.whiterose.ac.uk. Available at: <https://eprints.whiterose.ac.uk/73984/>.

Prawat, R.S. (1999) 'Social constructivism and the process-content distinction as viewed by Vygotsky and the pragmatists', *Mind, Culture, and Activity*, 6(4), pp. 255–273. Available at: <https://doi.org/10.1080/10749039909524731>.

Redmond, P. (2014) 'Reflection as an Indicator of Cognitive Presence', *E-Learning and Digital Media*, 11(1), pp. 46–58. Available at: <https://doi.org/10.2304/elea.2014.11.1.46>.

Rodgers, C. (2002) 'Defining Reflection: Another Look at John Dewey and Reflective Thinking', *Teachers College Record*, 104(4), pp. 842–866. Available at: <https://doi.org/10.1111/1467-9620.00181>.

Schon, D.A. (1991) 'The Reflective Practitioner: How Professionals Think in Action.', *Administrative Science Quarterly*, 32(4), p. 614. Available at: <https://doi.org/10.2307/2392894>.

- Shandomo, H. (2010) 'The Role of Critical Reflection in Teacher Education', *School-University Partnerships*, 4(1), pp. 101–113. Available at: <https://files.eric.ed.gov/fulltext/EJ915885.pdf>.
- Sweller, J., Ayres, P. and Kalyuga, S. (2011) *Cognitive Load Theory*. New York, NY: Springer New York. Available at: <https://doi.org/10.1007/978-1-4419-8126-4>.
- Tripp, S.D. (1993) 'Theories, Traditions, and Situated Learning', *Educational Technology*, 33(3), pp. 71–77. Available at: <http://www.jstor.org/stable/44427994> (Accessed: 6 November 2023).
- Total, Ö. (2023) 'Does Context-Based Learning Increase Academic Achievement and Learning Retention?: A Review based on Meta-Analysis', *Journal of Practical Studies in Education*, 4(5), pp. 1–16. Available at: <https://doi.org/10.46809/jpse.v4i5.71>.
- Wallace, B. and Nixon, R. (2013) 'Reading Horizons The Impact of Social Interaction on Student Learning', *The Impact of Social Interaction on Student Learning. Reading Horizons*, 52(4), p. 52. Available at: https://scholarworks.wmich.edu/cgi/viewcontent.cgi?article=3105&context=reading_horizons.
- Welsh Government (2022) *Curriculum for Wales - Hwb*, hwb.gov.wales. Available at: <https://hwb.gov.wales/curriculum-for-wales>.
- Welsh Government (2023) *Early Childhood Play, Learning and Care: Reflective Practice Toolkit 2*. Available at: <https://hwb.gov.wales/api/storage/a8d10028-25ae-4d94-ad18-0247286ce822/early-childhood-play-learning-and-care-reflective-practice-toolkit-v1.pdf>.
- Welsh Government. (2021) *Last Update - Introduction to Curriculum for Wales Guidance*. Available at: <https://hwb.gov.wales/curriculum-for-wales/introduction#:~:text=The%20four%20purposes%20are%20the,encourage%20critical%20and%20civic%20engagement>
- Welsh Government. (2012) *Performance Management for Unattached Teachers*. Available at: <https://hwb.gov.wales/api/storage/6e6fe592-28c5-4c0e-9cca-4d941524773b/performance-management-for-unattached-teachers.pdf>
- Welsh Government. (2012) *Performance Management for Teachers*. Available at: <https://hwb.gov.wales/api/storage/068248bb-698a-46a9-b120-5520268f6762/performance-management-for-teachers.pdf>
- Widiana, I.W., Tegeh, I.M., Lanang Agung Parwata, I.G. and Hanikah . (2020) 'Improving Student's Factual Knowledge with Concrete Media through Observing Activities in Scientific Approaches in Elementary Schools', *Journal of Education and e-Learning Research*, 7(3), pp. 293–299. Available at: <https://doi.org/10.20448/journal.509.2020.73.293.299>.
- Willis, S. (2010) 'Becoming a reflective practitioner: frameworks for the prehospital professional', *Journal of Paramedic Practice*, 2(5), pp. 212–216. Available at: <https://doi.org/10.12968/jpar.2010.2.5.48162>.

Appendices

Appendix A

OBSERVATION / FIELD NOTES

Record 1

Date and time, year group:

Recorded July – Observed within immersive room September – Year 4 Class

Where and When:

Within the classroom – there is a teacher and a TA present. Around 23 children were within the classroom for the session. The space is arranged between grouped tables of around four to six children on each. There is one table at the front of the class which is rectangular which four children along one side of the table which doesn't seem to be as inclusive for group work as others.

What happened:

The teacher is giving a WAGOLL at the front of the class and prompting answers from children. The teacher is looking for the learners to make inferences by looking at the picture on the board. The children have whiteboards to record their answers before presenting them back to the class. The learners are being questioned and scaffolded by the teacher to gain a clear understanding of the task. In this time, the children are being presented with dojo points for participation. The teacher then presents each table with a shoe for them to make their own inferences. The shoe is interesting to the learners and sparks conversation. The learners are excited and engaging their senses within the object to develop their understanding and make connections. The groups discuss the objects, and some seem to be going off task. The teacher comes back to the front of the class to re-direct the learners back onto the focus. Two children on the front rectangular table begin to argue of the object as they are struggling to share along the table due to what looks like the shape (end children are too far away to access the shoe when it's within the middle of the table). This consumed some time of the learning opportunity, and the incident didn't seem to be resolved. The children were given around ten minutes to discuss and record answers before sharing back to the class.

Areas of possible exploration:

Table arrangements – inclusivity and group working

Using concrete objects – hands on learning and real-life context – encouraging engagement

Giving rewards to encourage engagement

Notes:

Engagement –

Children are actively engaging with the teacher however few are distracted with the whiteboards for moments throughout

Children seem engaged and are excited when presented with the shoes however do go off-task towards the beginning of the lesson which is when the teacher comes back to the front of the class to redirect them back onto task

Appendix B

OBSERVATION / FIELD NOTES

Record 1

Date and time, year group:

Recorded July – Observed within immersive room September – Year 4 Class

Where and When:

Within the classroom – there is a teacher and a TA present. Around 23 children were within the classroom for the session. The space is arranged between grouped tables of around four to six children on each. There is one table at the front of the class which is rectangular which four children along one side of the table which doesn't seem to be as inclusive for group work as others.

What happened:

The teacher is at the front of the class with a picture on the interactive board. The children are engaging in questioning and answering with the teacher. The children are being asked to make inferences about the picture on the board. The teacher is asking the children to hold up their hand to give their answers. Several children were noticed to hold up their hands and not get a response from the teacher after an amount of time and therefore took their hands down. Limited responses were accepted throughout this time by the teacher. The children were given whiteboards to record their answers prior to sharing their answers to the class. The whiteboard was being used successfully throughout the lesson, however some children got distracted by

them part way through. Childrens answers were recorded on whiteboard and the teacher was making their way around to glimpse over the responses that each child had to gage their understanding. The teacher then set the task for the children to complete their own inferences using the physical object that he provided to each group.

Areas of possible exploration:

Response Strategies
Assessment for Learning Strategies – whiteboards

Notes:

Understanding ability to further scaffold the learning of each individual