

Teitl yr aseiniad (h.y. eich cwestiwn ymchwil)
Assignment Title (i.e. your research question)

Gallwch ychwanegu'ch targedau o'ch aseiniad diwethaf gan ddefnyddio'r tabl isod. /
Please add your targets from the previous assignment using the table below.

	Targed/Target	Yr hyn yr wyf wedi'i wneud yn yr aseiniad hwn. What I have done in this assignment.
Targed/Target 1	Wider reading	Engaged with a wide range of literature
Targed/Target 2	Improve academic writing style	Researched critical writing and applied it when reviewing literature.
Targed/Target 3	Justify and be critical of statements being made	Provide well researched statements looking from different viewpoints

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paragraph on left and right by 2cm) (AssignQuote: Styles)*

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KS3 lesson study: does *differentiation* promote learner *engagement*?

Introduction

This study aims to investigate to what level differentiated tasks can influence pupil's engagement during a learning activity.

Since starting my PGCE, it has become apparent, most notably from my experience in science classes, that many secondary school departments create work booklets which offer limited differentiation for pupils. When working through a topic differentiation is very often only seen when a teacher creates an impromptu extension task for learners who complete their work ahead of others. Therefore, this may be problematic for pupils with lower attainment in accessing the learning objectives.

As differentiation is a proven effective strategy to help all learners progress in their learning (Rock et al., 2008; Tomlinson, 2014; Schleicher, 2016; Smale-Jacobse et al., 2019), I would like to research the impact of enhanced task differentiation for pupils, so I can review its effectiveness, which should subsequently inform my future teaching practice.

Research context

My research partner and I were discussing the importance of student engagement in education, a topic widely perceived as playing a significant role in children's learning (Pittaway, 2012; Bouwma-Gearhart, Perry & Presley, 2014; Mandernach, 2016), and we concurred that, in our personal experience as learners, we made the biggest strides in our learning when we were fully engaged and focused on the information we were trying to access. As trainee teachers, we have both noticed that some pupils can become disengaged during lessons and we questioned if one cause of this disengagement could be the difficulty of the given tasks. Consequently, we hypothesised that if we created a lesson with differentiated tasks that were pitched at the correct level for an individual or group of learners, the chance of them being engaged in their learning would increase, potentially leading to a higher probability of educational attainment.

Literature review

This literature review will take shape of two key parts: firstly, what is differentiation, why it is needed in the classroom, and what does good differentiation looks like; secondly, why is pupil engagement important, and how does it correlate with learning progress.

Differentiation

Schools are heterogenous communities made up of many individuals from diverse backgrounds that carry varying educational needs (Smale-Jacobse et al., 2019; OECD, 2018; Schofeld, 2010). Even though pupils are usually grouped together in chronological age, people vary dramatically, including aspects of race and socioeconomic differences, sometimes both; ethnicity; English spoken as a foreign language; different levels of prior knowledge; identified and non-identified additional and learning needs; varying degrees of ability; gender; personality; and levels of motivation (Bearne, 1996; Tomlinson, 1999; Tomlinson et al., 2003). Therefore, educators are progressively faced with the daily challenge of making their teaching accessible for all of their pupils by accommodating and planning for this broad spectrum of learning in the classroom (Moon, 2005; Yates, 2000). There is a balancing act at play: ensuring pupils are provided with common and equal experiences as to not discriminate, whilst also addressing an individual's learning needs (Gamoran & Weinstein, 1998). Johnston, Halocha and Chater (2007) empathically state that "every child should be given the same educational opportunities irrespective of their level of ability in comparison to others". It is unsurprising then that this is one of the most difficult of issues faced by the classroom teacher (Yates, 2000), and by honouring a student's learning needs whilst maximising their learning capacity requires and displays expert teaching practice. Therefore, through placing an emphasis in developing an understanding of *who* and *what* we are teaching, it allows for a greater consideration and flexibility of *how* we teach (Tomlinson & Strickland, 2005). As a trainee teacher, differentiation is usually the biggest difficulty (Aspin, 2013; Moon, 2005), and is most probably due to limited knowledge, experience, and exposure to quality differentiated provision.

Frankling, Jarvis and Bell (2017) explain how differentiation is difficult to define and cannot be easily summarised as its implementation depends on the variability of a group of learners in front of you. Tomlinson and Jarvis (2009) states that differentiation is:

..... an approach to curriculum and instruction that systematically takes student differences into account in designing opportunities for each student to engage with information and ideas and to develop essential skills (p. 599).

However difficult differentiation is to define, many agree that it is an educational strategy or approach that can be used in a variety of forms (Tomlinson & McTighe, 2006; Tomlinson 1999, 2000, 2003). Tomlinson (1999) also encourages teachers to address differentiation by providing engaging and purposeful teaching and learning rather than passive instruction.

According to Tomlinson and Strickland (2005), teachers are able to differentiate their teaching in five ways in order to improve their students' opportunity for learning success. These distinctive methods offer differentiation by: content, what we teach and how the students access the information needed; process, how students understand and process the information; product, what the student produces to demonstrate their learning; affect, how students link thoughts and feelings in the classroom; and learning environment, how the classroom functions. Aspin (2013) defines differentiation further, separating it into only three main categories; by task, by support and by outcome. All three of these methods are widely recognisable forms of differentiation used in both secondary and primary schools; the positive and negative aspects of which are discussed below.

Differentiation by task is described as setting distinctive activities for pupils of different abilities, with the aim for the children to gain an understanding of equal content across the class (Aspin, 2013; Akos, Cockman & Strickland 2007). Research has demonstrated that differentiated instruction can be highly effective for both lower ability learners and more able students, however it has been argued that the extra lesson planning and preparation time required to provide such differentiation can overshadow the benefits (Weselby, 2014).

In contrast, differentiating by support requires significantly less preparation, as by administering help to certain pupils in the class immediately provides the scaffolding for the student (Tomlinson & Strickland, 2005). However, this support should not always be offered to the lower ability children in the class and is highlighted by both Estyn (2018) and the Welsh Government (2015) as an important tool in challenging and supporting more able and talented children in Welsh schools.

Lastly, differentiation by outcome involves the pupils engaging in open-ended activities, enabling them to respond at different levels (Aspin, 2013). As it is often seen as the simplest form of differentiation, it is the viewpoint of various authors that there is a danger of teachers too often relying solely on this method (Aspin, 2013; Evans & Waring, 2012) and furthermore focusing on the quantitative rather than the qualitative aspect of work produced (Akos, Cockman & Strickland, 2007; Tomlinson & Strickland, 2005).

For the purpose of this study, we have decided to differentiate by task, as according to Weselby (2014), when teachers provide differentiated activities for a mixed ability class, students appear to be more engaged in learning and demonstrate fewer discipline problems, a suggestion which correlates directly to our study aims.

Engagement

Ashwin and McVitty (2015) propose that student engagement has become a defining characteristic of quality teaching and learning in education. More than 20 years of research have indisputably found that the more actively engaged students are, the more likely they are to learn and reach their academic goals (Rhoades, 2012). Furthermore, it has been found that engaged students not only attend school regularly and outperform their peers, but they are also more likely to enjoy learning and challenge themselves academically (Klem & Connell, 2004; Christenson, Reschly & Wylie, 2012).

It is clear that student engagement is a significant area for research and it is essential that educators continue to examine strategies that promote and support student engagement in the classroom (Parson & Taylor, 2011). The failure to engage students in learning has been found to produce poor performance (Prensky, 2005; Gilbert, 2007; Claxton, 2007; Parsons & Taylor, 2011), and endeavouring to engage disengaged students has been described as one of the biggest challenges facing teachers in modern times (Cothran & Ennis, 2000; Willms, 2003; Parsons & Taylor, 2011).

Recent studies have concluded that low attainment student groups have an inferior level of pupil motivation and poorer behaviour than of their higher ability peers (Ireson & Hallam, 2001; Hallam & Ireson, 2003; Kutnick et al., 2005; Dunne et al., 2007). Nevertheless, it has been shown that more able and talented pupils are also at risk of disengagement if the task at hand does not provide them with sufficient challenge to stretch their learning (Ofsted, 2013; Welsh Government, 2015). Considering both these points, we have decided to examine the role that differentiation plays in determining student engagement across all

abilities, with the aim that all children can access the learning objective and participate in the given task successfully.

Methodology

The methodology used for this educational research was lesson study (LS). LS is a form of action research (Kemmis & McTaggart (1988) defined action research as form of collaborative inquiry which is examined critically by individual group members) which originated in Japan (translated from '*jogyokenyu*' as lesson study/research) where it has been used since the 1870's (Abiko, 2011; Dudley, 2014). LS is an investigation into pedagogy within the classroom, carried out by more than one individual teacher, with the ultimate purpose of refining the quality of teaching and learning for future practice (Tsui & Law 2007; Ricks, 2011; Dudley, 2014; Cajkler et al., 2015). LS is a cyclical process and a joint effort between the involved educators, whereby teachers collaboratively design a research lesson. In this first lesson one teacher leads pupils through the learning, while the other(s) observe with a particular focus on whatever the research might be, which may include focus groups or pupil interviews as examples (Dudley, 2014). The success of the research lesson is then evaluated and revised, with a focus on refining and improving the effectiveness of pupil learning ready for the next lesson (Hiebert & Stigler, 2000; Dudley, 2014) if appropriate, or at the very least reflections on the observation are commented upon and discussed in detail, with suggestions put forward to improve future lessons (Fernandez & Yoshida, 2012). Most observational lessons in schools typically assess the individual performance of the teacher, whereas LS reflects on observations in the students learning. Cajkler et al., (2015) suggests that this key difference places LS as more useful strategy for professional learning and pedagogical development than feedback from typical teacher observation.

The two classes for the research lessons in this study were firstly a mixed ability year 7 Science class, and secondly a year 8 Maths class. The reason for sampling a mixed ability class was to ensure there was a broad range of abilities within the study group. One teacher taught the first research lesson whilst the other observed, then the roles were reversed for the second lesson. Data was collected from the research lessons in three ways:

(i) Observational recording of pupil engagement during a differentiated task.

Engagement was recorded by the non-participant observer (Cohen et al., 2013; Wragg, 2013) during the main differentiated task and not over the whole lesson (figure 1). It was

done in this way so we could capture the true value of success of the task in relation to engagement. The differentiated task was focused into three groups, easy; medium; and hard. The task was a one-sided A4 worksheet with 3 main questions plus an extension activity. The task increased in complexity and specificity across the worksheets by using higher order questioning derived from Bloom's taxonomy (Bloom, 1956). Three pupils were then chosen at random, one from each of these focus groups, for observation during the activity.

Tick if observed	Student A	Student B	Student C
1. Not engaged			
2. Regularly not engaged			
3. Generally engaged			
4. Periods of prolonged intense engagement			

- 1. Not engaged** – Activity at this level can be simple, repetitive and passive. Engagement and cognitive demand appear to be absent. Characteristics of this may be the child staring into space, disrupting other pupils or refraining from completing tasks.
- 2. Regularly not engaged** – The child is engaged in an activity but this engagement is frequently interrupted by distractions or periods of disengagement; displaying the characteristics described in the 'not engaged' category.
- 3. Generally engaged** – The child appears to be engaged with teaching/busy during task completion time, however this is at a basic level. There is some progress made in terms of learning however there are no signs of eagerness to learn/ask questions. The child is easily distracted from the continual engagement
- 4. Periods of prolonged intense engagement** – For the majority of the observation period, the child shows continuous levels of intense activity and engagement, including: concentration, energy, resilience and persistence. Attitudes towards learning are positive and the child is rarely distracted by other stimuli.

Figure 1. Observation schedule for the differentiated tasks.

Unstructured observation, even though a natural opportunity to gather live and real time data, is not a valid tool used for research as it allows for bias due to observers viewing the events through their own individual focal lens (Hitchcock & Hughes, 1995; Girffee, 2005; Cohen et al., 2013). Therefore, any observation methodology used in educational research should be specific, focusing on a particular area of interest in a highly structured and systematic way (Cohen et al. 2013) in order validate the results (Girffee, 2005). For this reason, we followed a structured observation schedule that we created for our needs (figure 1), whereby we placed a tick in the box in the engagement grid which most suited the pupil being observed, systematically recording quantitative data.

(ii) Questionnaire for pupils immediately after the lesson.

Three pupils were identified during the main differentiated task by the non-participant observer, and then were asked to stay for a short time at the end to complete a written questionnaire which recorded their feelings about the task. We created five questions for the pupils to answer which evaluated their learning, their enjoyment in completing the set task, and how challenging they found it.

Questionnaires are used popularly in educational research (Cohen et al. 2013), but they need to be carefully planned and designed in order to retrieve useful high-quality data to ultimately help the researcher reach their research objectives (Marshall, 2005). If a questionnaire is poorly planned, then questions may be misleading, confusing if not sequenced, too open or too closed, and difficult to interpret for someone with learning difficulties and/or poor literacy. Therefore, questions need to be short and focused to improve the quality of the answer (Marshall, 2005).

The five questions we created followed this advice, consisting of around 10-15 words only. The questions used were sequenced, and open-ended. The data collected from this is qualitative, as the questions ask for written opinions and perceptions of the task. The questionnaires were designed to be not the main focus of the data collected as they do not record engagement unlike the observation schedule, but will be used to help aid the reflection from the pupil's answers.

(iii) Written teacher reflection between myself and co-researcher after pupils were interviewed – directly after all the pupils left we reflected upon the lesson using a slightly modified reflective model created by Gibbs in 1988, known as the Gibbs reflective cycle, see figure 2 below (Gibbs, 1988; Roffey-Barentsen & Malthouse, 2009). This model allowed to us critically evaluate and record our initial feelings collaboratively, to provide us with qualitative data to later analyse individually within this document.

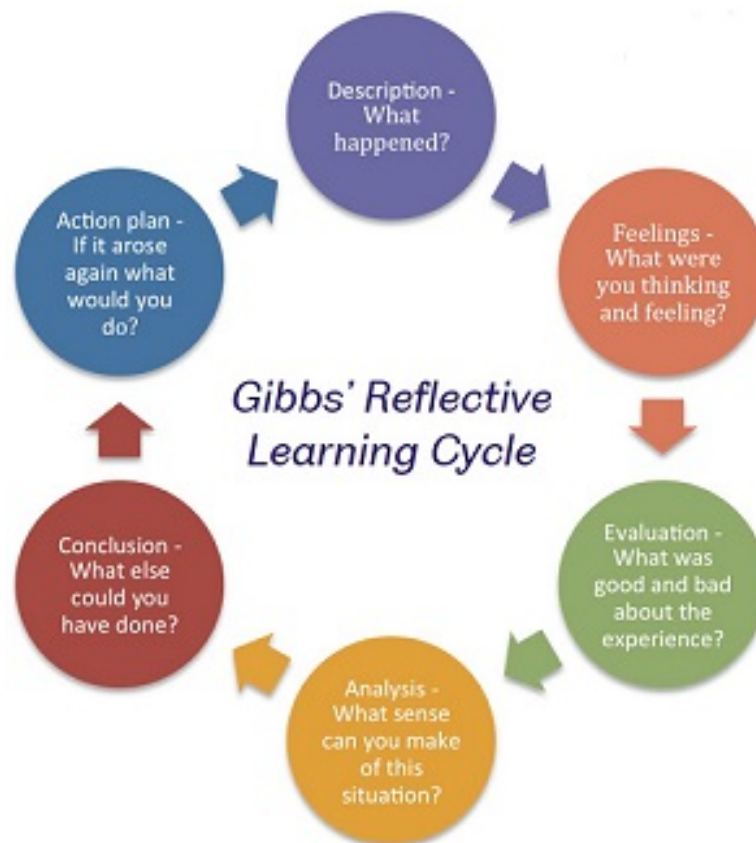


Figure 2. Gibbs' reflective learning cycle (Gibbs, 1988).

Critical reflection is a key tool in allowing the teacher to transform future practice (Dinkelman, 1997; Larrivee, 2000). To show the importance of this in relation to myself as a trainee-teacher, the QTS descriptor for professional learning within The Professional Standards for Teaching and Leadership, states that “the ongoing critical reflection and learning of the teacher” prompts substantial “professional growth” and development (Hwb.gov.wales, 2020).

Ethical considerations

As this study was carried out in partnership between university and school, we adhered to both parties' ethical policies. The university required us to meet the UWTSD Research Ethics & Integrity Code of Practice, and UWTSD Research Data Management Policy, ensuring confidentiality, anonymity, privacy and non-traceability in the study, all of which are stated in the BERA ethical guidelines for education research (BERA, 2018). An ethics form was submitted to the university for approval, and signed by a member of staff from the school approving the study in principal. The school requested us to send a consent form and

information sheet outlining the purpose of the study to the pupils' parents or guardians well in advance of the research lesson, giving pupils the option to withdraw at any stage.

Lesson study 1 results and analysis

The first research lesson was carried out during a year 7 chemistry class covering the effects, causes and solutions of acid rain (for full lesson plan, see appendix I). The lesson began with lots of discussion during the starter whilst making clear links to prior knowledge of chemical reactions. This then moved on to a section of direct teaching where pupils participated in by drawing on the whiteboard the key parts of how acid rain is produced, and the damage it can cause. Pupils then had the choice of the worksheet based on the level of challenge they desired, easy; medium; or hard (see appendix G). In the plenary pupil learning was assessed individually by answering questions on mini-whiteboards relating to the lesson objectives.

All three focus pupils completed the worksheets, meeting the learning objectives. However, there were clear differences in engagement (see appendix A). Both focus pupils who took the medium (student C) and hard (student A) tasks showed periods of prolonged intense engagement, particularly the pupil who was working on the hard task. This may indicate that the pupils who chose the task which was identified with greater difficulty seek a challenge in their learning. The more challenged they were in the task may have resulted in heightened engagement in order to complete the worksheet successfully. These two pupils also demonstrated a sense of ownership over their task by working confidently and independently. They also showed resilience when they encountered difficulties during the questions, working through learning barriers to complete the task.

However, student B who chose the easy task was generally not engaged, and displayed distracted behaviour during and after the activity and was beginning to distract others around him once finished. His answers were correct and relevant, but were short, undetailed and displayed little effort. One reason for this could be that this pupil chose the easiest task when indeed actually he has the ability to challenge himself further. Another reason for this could be that the pupil linked the word 'easy' to the level of effort needed to complete the task. Therefore, although answering the questions correctly, the pupil may have put greater effort in when faced with more detailed and challenging questions.

Looking at the questionnaires (see appendix B), all pupils said that they enjoyed the activity, however they described different levels of challenge. The pupil who chose the hard task found it challenging, the pupil who chose the medium task found it quite challenging, and the pupil who chose the easy task described it as being too easy. Ideally, all pupils should feel that they were challenged to some extent in order to progress in their learning. The results of this then show that this was not the case. Even though the tasks were differentiated correctly in their design, some pupils chose a task not suited to match their ability.

Upon reflection with my research partner (see appendix C), it was noted that the majority of pupils enjoyed the content and showed progress in their learning, however most could have challenged themselves further by selecting a more difficult task. It was a surprise that the majority of pupils decided to take the easier task, around approximately 40% of the entire class (27 pupils). In reflection we also felt that the lesson contained too much direct teaching at the start, which may have affected pupil engagement over the course of the lesson.

Therefore, we suggested improvements for the following lesson. The main revisions included to use more frequent bite sized activities to keep pupils engaged throughout the lesson as there was too much of a focus on the differentiated task, and also to change the way in which the pupils are assigned the different levelled tasks. For the second research lesson the level of task assigned to each pupil will be determined by a pre-assessed activity which is not differentiated. The pre-assessed task will include 10 questions, and the boundaries are as follows: 0-3 correct – level 1 differentiated task; 3-6 correct – level 2 differentiated task; 6-10 correct – level 3 differentiated task. In this way pupils do not have the choice in the differentiated task they are given as it is determined by their ability of answering the previous questions correctly. Also, we have decided not to call the task as easy, medium and hard, as this may have an impact on the pupils' engagement as before mentioned.

Lesson study 2 results and analysis

The second lesson was a year 8 mixed ability maths class, where pupils explored different mental and written methods for mathematical equations such as addition, multiplication and division (for full lesson plan, see appendix J). After briefly re-identifying different mental methods to calculate answers by the teacher, the pupils then answered online quiz questions via *Kahoot!* individually on iPads. After this, pupils answered 10 questions from the board, and depending on how many they completed correctly, resulted in which differentiated task they were assigned. The tasks were numbered 1, 2 and 3, which contained increasing more complex and difficult questions with more challenging numbers

(see appendix H). The main differentiated task contained 40 questions to be completed over a time frame of 15 minutes. We understood when planning the lesson that this was probably not enough time for pupils to complete the task fully, however this was purposeful. The reason for this was to make sure that all pupils could not reach a stage where they had finished all questions. However, if they did complete all questions, there was an extension available. At the end of the task, pupils were then given the opportunity by the teacher to self-assess their answers, receiving instant feedback on their learning.

The three focus pupils showed improved levels on engagement overall than the previous lesson (see appendix D). Student A was assigned with task 1 and was generally engaged, but showed occasional slight distraction during the task by conversing with a neighbouring peer; student B received task 2, and showed periods of prolonged intense engagement which was said to be unusual for the pupil according to their classroom teacher, and was hardly distracted during the entire task; and student C received task 3, showing full intense continuous concentration for the entire observation period, showing the highest levels of engagement. The pupils also completed 11, 10, and 15 out of the possible 40 questions in the 15 minutes given, respectively.

As researchers and teachers, we made our best possible effort to not reveal that the tasks had different difficulty levels, but unfortunately most students did realise that this was the case. However, from the levels of engagement observed, this did not seem to have a negative effect. From the questionnaires completed by the pupils (see appendix E), it was evident again that they found the task slightly easier than they would have liked, and also suggested they should have more time to complete the questions fully. However, even the pupils which showed the highest levels of engagement stated they would have liked greater challenge in the task, but did not specify any further details. Upon reflection (see appendix F) we also agreed that the pupils should be given more time to complete tasks fully, but overall felt positively about how the pupils were assigned the task when compared to the previous lesson, as there was a measurable marked improvement in engagement when pupils undertook the task.

By creating a task which was intentionally too long to complete in the given time frame, pupils felt unsatisfied as they would have liked to answer all questions. Therefore, in future lessons, tasks should not be over ambitious, instead being of suitable length along with challenging and relevant extension activities.

The answers from the questionnaires completed by the pupils were again rather vague. This may have been down to the questions being asked, and therefore more planning will need to go into the question design to increase the chance of yielding high-quality answers from the pupils, as the pupils voice and opinion is extremely important to the teacher and both stakeholders development (Flutter, 2007). A verbal interview may have been more successful, but we chose to allow the pupils to complete the questionnaire unguided, in order to avoid leading them to their answers.

Pupils also greatly enjoyed the frequent bite sized tasks throughout the lesson, and furthermore the opportunity to self-assess their work to see their results from the task and not have to wait until their work was marked by the teacher.

Discussion of research finding

The aim of the study was to investigate to what extent differentiation affects engagement. My results show that differentiation can improve levels of engagement as long as the level of challenge is correct, and this has considerable implications. During the first lesson, the two students who chose the activity appropriate to their ability were engaged throughout the task. Finn and Rock (1997) suggest that engagement is essential for generating academic resilience, which can improve academic attainment (Skinner, Wellborn, & Connell, 1990; Connell, Spencer, & Aber, 1994; Appleton, Christenson, & Furlong, 2008).

However, the student who chose a task that did not provide enough challenge demonstrated disengagement during the task. This suggests that the lack of challenge is the probable cause of the relative lack of engagement, and showed associated distraction and potential boredom (Csikszentmihalyi, 2000; Van Tilburg & Igou, 2012). To illustrate this further, psychologist Les Vygotsky (1962) famously described that students learn best when challenged appropriately, and by finding this 'goldilocks' zone of proximal development (see figure 3), students simultaneously show high levels of engagement in their learning.

The Zone of Proximal Development and Engagement	
Level of Challenge	Student Engagement
Learning is too hard.	Excessive frustration leads to disengagement.
Learning is appropriately challenging (zone of proximal development).	Joyful challenge leads to high engagement.
Learning is too easy.	Excessive boredom leads to disengagement.

Figure 3. The zone of proximal development and engagement (Anderson, 2016).

To help engage pupils it is also important to give them meaningful choices (Parker, Novak, & Bartell, 2017), and offering pupils choices in the way in which they learn is an extremely powerful way to enhance learning (Anderson, 2016), but unfortunately, we found that giving the pupils a choice in which task they received led to some not challenging themselves appropriately, lowering engagement and motivation (Katz & Assor, 2007). Anderson (2016) suggests that giving pupils opportunities for choice in their learning in relation to difficulty level at such a young age (11-12 years old) allows for problems such as we experienced, and that such a choice is more suited to older individuals at GCSE or A-level as they have more understanding of their own choices. He also suggested that choice can be offered to these younger pupils in more simplistic ways, such as allowing them to research a particular interest within a topic rather than differentiating the level of difficulty, which still gives them room for autonomy and creativity in the classroom, boosting student learning. This simultaneously creates a positive environment for pupils to engage in their learning (Jones & Jones, 1981; Hue & Li, 2008; Davies et al., 2013).

My results also show that the pupils who received the task with the lowest level of difficulty were observed to be the least engaged, which is concerning as research shows a common and clear positive link between low attainment and low engagement (Finn & Owings, 2006; Suh & Suh, 2006; Blatchford, Bassett, & Brown, 2011). However, there was a measurable improvement in engagement from the first research lesson to the second, which shows the importance of how tasks are differentiated to help increase pupils' engagement during learning.

Conclusion

By using observation as a strategy to collect data in our research study, it gave us the opportunity to look at what was taking place in real life situations (Patton, 1990). The type of observation we used was important, in order to systematically collect quality data from an observational period (Cohen et al., 2003). Therefore, through explicit planning we were able to successfully use a structured observational schedule to record the appropriate levels of engagement assigned to a specific focus pupil during a differentiated task. However, to increase the reliability and validity of our results we could have used a smaller scale pilot study beforehand to assess if the engagement categories we used in the observational period were suitable for the purpose of the research, giving us a finer focus (Cohen et al., 2003). We also could have trialled our planned length of observational period, and refined it if we felt necessary. But as we were recording engagement during the differentiated task we did not want to use the observational schedule outside of this. Furthermore, by only focusing on a small sample of three pupils from an entire class, we limited the data in which we collected, again affecting the reliability of our results. Observing and recording engagement itself also presents a challenge to researchers, as engagement is subjective to an individual observer and therefore lacks a consistent and true definition (Azevedo, 2015; Sinatra, Heddy, & Lombardi, 2015). This may have affected our results as different researchers observed both times, but we did also both contribute afterwards to make sure we agreed with what was recorded.

The answers on the questionnaire completed by the pupils contributed to the reflections of the lesson, and success of specific tasks. We found this to be beneficial in providing extra detail to our reflection, and the pupils were eager to engage in this, allowing their perspectives to be valued (Cook-Sather, 2007; Rudduck, 2007). However, due to some short and undetailed answers provided on the questionnaires from the pupils, we felt more time was needed to critically examine the quality of the questions we were asking.

Furthermore, as the questions were created only to help aid our own lesson reflection's, there was a lack of purpose in the questions being asked, and that the questions should have linked more clearly to our research question and aims. Again, piloting this beforehand would have allowed us to see any weaknesses in the questions being asked from the answers provided (Cohen et al., 2003).

These findings relate to the classical theory put forward by Les Vygotsky's (1962), whereby pupils, if not challenged appropriately within the zone of proximal development, will show

disengagement in their learning. However, both classes used in the research lessons contained pupils from similar catchment areas, of similar ages and were both mixed ability classes. Consequently, this may make the findings difficult to generalise to other schools due to socio-economic factors that affect secondary schools (Baker, Goesling, & LeTendre, 2002), and also to other classes if they are placed into ability groupings, where the entire class itself is already differentiated (Ireson, J. & Hallam, S. 2001).

As providing suitable differentiation is a common difficulty among trainee-teachers (Aspin, 2013; Moon, 2005), this study and my consequent findings will help improve my teaching practice. When work needs to be differentiated in my future classes, I plan to incorporate a range of pre-assessed activities before a main learning event, to ensure that pupils are challenged accordingly, whilst also making sure that task differentiation is appropriately pitched to the correct age group (Anderson, 2016). Furthermore, I aim to differentiate work in different ways for learners of all ages, abilities, and walks of life, to promote engagement in their learning.

In summary, we found that giving pupils a meaningful choice in their learning when differentiating work is important for facilitating positive behaviours such as resilience, and confident independent working (Parker, Novak, & Bartell, 2017), but at the same time a teacher must ensure that pupils are challenged appropriately relative to their ability, to promote high levels of engagement (Anderson, 2016) and academic attainment (Skinner, Wellborn, & Connell, 1990; Blatchford, Bassett, & Brown, 2011).

Recommendations

Moving forward, I have critically identified some recommendations that may benefit future study, and are as follows:

Larger sample size – by increasing the size of the sample there would have been a smaller margin of error in our results, increasing the reliability of the study, due to more data being collected (Institute for Work & Health, 2008; Cohen et al., 2013). Therefore, by implementing this in the future, this would enable us to create an accurate depiction of the effects of the study.

Different forms of differentiation – As identified earlier in the study, teachers are able to differentiate their teaching in various forms in order to improve their students' opportunity for

learning success (Tomlinson & Strickland, 2005; Aspin, 2013). This study only focused on differentiation by task (Aspin, 2013), for this reason there would be an opportunity for further research examining how the differing types of differentiation affects engagement.

Promoting student engagement – This study only considered how the content of the lesson affected student engagement. Considering that disengagement in secondary schools continues to be a widespread issue (Bundick et al., 2014), exploring other methods of promoting student engagement would benefit future study as several elements of the classroom environment are suggested to affect engagement (Blatchford, Bassett & Brown, 2011; Bundick et al., 2014; Ashwin and McVitty, 2015).

Interview questions – My final recommendation would be to assign more time to designing the questionnaire, or better yet constructing a more purposeful focused interview relating to the study aims. This would subsequently yield more comprehensive results providing more relevant data, which in turn leads to greater reliability in results. (Malterud, 2001).

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