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Should twins be educated together or separately through their early years education? what impact does it have on learning and behaviour?

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The candidate confirms that the work submitted is her own and that appropriate credit has been given where reference has been made to the work of others.

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Introduction

The purpose of this research project is to explore whether twins should be educated together or separately through their early years education and the impact it has on their learning and behaviour. Being a twin themselves, the researcher chose to carry out this study as they often wonder how being educated separately throughout primary school would have changed who they are as an individual. Similarly, much of the research focusing on twins and other multiples is outdated. Therefore, the researcher aims to investigate any new or reoccurring themes.

This case study was carried out using observations and interviews at the researcher's placement school, where they observed one set of twins in a one-form entry primary school. This research hopes to acknowledge both the advantages and disadvantages of classroom placement on twins' learning and behaviour. It is important to note that although this study focuses on one set of twins, many arguments will apply to further multiples.

Literature review

This literature review analyses whether twins should be educated together or separately and the impact of classroom placement on their behaviour, learning and social and emotional development. Arce (2008) defines twins as two individuals born to the same mother from one pregnancy. There are two types of twins to be aware of. Dizygotic twins, also known as non-identical twins and monozygotic twins, which refer to identical twins (Katz, 1998). It is essential to acknowledge that twins do not form a homogenous group, as they will have varying needs and interests (Trust, 2018).

Behaviour

Research indicates that twins' behavioural traits are often distinguished before starting school. Hay and O'Brien (1987) demonstrate this by acknowledging key factors affecting twins' individual behaviours, including birth order. Beauchamp and Brooks (2003) also recognised that the time in which twins are discharged from the hospital impacts their behaviour, stating that twins who left later than their co-twin showed more signs of internalising behaviour. These factors are said to influence twins' individual mannerisms, which become more prominent throughout school (Gleeson et al., 1990). However, classroom placement may alter the behaviour displayed by twin siblings.

Starting school can be a difficult transition for children in general. Separating twins, many of whom may have spent little time apart before starting school, can lead to a challenging transition, causing internalising behaviours such as anxiety, withdrawal, and shyness (DiLalla, Mullineaux and Elam, 2009; Nilsson et al., 2010; Parent et al., 2019). A large-scale study with a sample size of 878 twin pairs conducted by Tully et al. (2004) concurs with this statement, highlighting that in

instances where twins were separated, they displayed signs of internalising behaviour, which for monozygotic twins, in particular, continued throughout their school education. This suggests that twins' behaviour regarding separation is influenced by the twin's zygosity. Tully et al. (2004) also state that when twins were separated later in school, they still showed higher levels of internalising behaviour than twins who were educated together, supporting the idea that twins are adversely affected by being separated and should, therefore, be kept together.

DiLalla and Mullineaux (2008) advocate the idea of educating twins together, identifying that separation can contribute to externalising behaviours such as aggression, noncompliance, and hyperactivity. Although this study has a high number of participants, it focuses purely on monozygotic twins. Therefore, it fails to consider the effect separation has on dizygotic twins. However, research by Van Leeuwen et al. (2005) involving over 5000 twin pairs, both monozygotic and dizygotic, produced parallel results, as both teachers and parents responded that twins who were separated in school presented more externalising behaviour, reinforcing the idea that twins should be educated together.

Alternatively, there is research that challenges the notion of placing children within the same classroom, advocating that educating twins apart reduces problem behaviour. Blevins (2001) and Alexander (2012) emphasise that when twins are placed together, they are likely to be compared to each other, which can lead to negative labels such as the "less able" or "more disruptive" twin. Consequently, constant comparison can lead to adverse competition or rivalry between twins (Katz, 1998). Lack of individual attention may be another contributing factor to rivalry between twins. Huberman (2004) recognised this when interviewing twins for their research, stating that the children sought individual attention, resulting in significantly longer interviews than intended. Staton et al. (2012) further support these statements by indicating that competition between twins significantly decreases when placed in separate classes, increasing individuality and individual attention.

When twins feel they need to compete with one another, it may result in disruptive behaviour. Gordon's (2015) study supports this view, stating that the main reason twins wanted to be in separate classrooms from their co-twins was to reduce sibling interference or disruptive behaviour, suggesting it can be a problem within the classroom. However, when separated, twins may become jealous of what their co-twin is doing in another classroom, which can also heighten the risk of problem behaviour due to feeling unnoticed (Oliver, Pike and Plomin, 2008). Nonetheless, it is essential to recognise that Oliver, Pike, and Plomin's (2008) study only focused on monozygotic twins, whereas Gordon (2015) studied both monozygotic and dizygotic twins, so results may differ. Therefore, teachers may use separation as a solution if problem behaviour is presented when

twins are together, reducing the likelihood of competition and disruptive behaviour for both individuals (Hay and Preedy 2002).

Learning

Competition and comparison are common themes when researching twins. Therefore, it is important to acknowledge its impact on twins' learning alongside their behaviour. For twins with similar attainment levels, sharing a classroom can promote healthy competition, which motivates them to push themselves academically, resulting in higher achievement (Amundson, 2019; Bader, 2019). However, Hay and Preedy (2006) contradict this, emphasising that when twins with different levels of attainment are educated together, they may compete to be the "smarter" twin, which can place negative labels on individuals who struggle academically. Alexander (2012) resonates with this statement by implying that the lower-attaining twin can be disheartened if they constantly fall behind their co-twin. Therefore, separation may be more beneficial for twins with differing levels of attainment. Hay and Preedy (2006) also indicate that separation minimises comparisons between twin pairs and enables teachers to accurately assess individuals by comparing progress with the rest of their class rather than simply comparing them with their co-twin. White et al. (2018) signify that this may result in more dizygotic twins being separated as they are more likely to differ in attainment than monozygotic twins.

Research also indicates that dizygotic twins benefit from separation in terms of their attitudes towards learning. Tully et al. (2004) found that dizygotic twins were inclined to work hard and concentrate more when separated than when they were together. However, this is not the same for all twins. Malan (2014) criticises this, stating that separation had the opposite effect on some monozygotic twins, resulting in a lack of concentration due to them worrying about where their co-twin was and what they were doing. Pearlman and Ganon (2011) strengthen this statement by highlighting that twins were more likely to actively participate in their learning when they were educated together.

Another factor that encourages twins to learn together is consistency. When twins are educated together, it ensures they have the same pedagogical approach by having the same teacher, work requirements for tasks in school and homework (Staton et al., 2012). Parton (2011) and Alexander (2019) believe that this approach to learning is beneficial for twins as they are likely to have similar learning styles and can support each other if they struggle academically. However, this may also present problems regarding twins' learning as one may become overly dependent on the other, hindering their progress (Luria and Yudovich, 1971; Douglas and Button, 1978). Although this research is outdated, it is still important to consider. Therefore, teachers should regularly observe, assess, and review progress to identify whether separation may be appropriate in the future (Katz, 1998).

There are differing views regarding how classroom placement impacts academic attainment. Therefore, all points discussed must be considered when determining the placement of twins to ensure they are supported academically. Van Leeuwen et al. (2005) and Gordon (2015) state that classroom separation is vital in order for children to progress academically. This is supported by Koch (1966), who was the first to research the impact of separation on twin pairs, acknowledging that separation enhanced speech development and academic achievement. However, Tully et al. (2004) noted that this might not be a reliable source due to methodological problems; therefore, it should be interpreted with caution. Coventry et al. (2009) also criticise Koch (1966), stating that twins educated separately in the early stages of school had poorer print knowledge and speech compared to their peers, further implying that Koch's (1966) study is unreliable and outdated.

Similarly, Webbink, Hay, and Visscher (2007) and Goymour (2017) state that separate classroom placement hindered twins academically, with results indicating that they had lower attainment than their peers. Kovas et al. (2015) and White et al. (2018) advocate this further, highlighting that separated twins had significantly lower language development, however they emphasise that this did not affect their attainment later on in education, indicating it has no adverse long-lasting effect. Overall, Polderman et al. (2009) and Lacina (2010) found no significant difference in educational achievement between twins educated together or separately.

Social and emotional development

In early years settings, learning can take a play-based approach, which has different developmental stages. Scott and Cogburn (2023) recognised that by age two, most children engage in parallel play, where they play alongside other children independently, without interacting with them. Children aged three to four participate in associate play, where they begin to communicate with other children; however, this stage does not have a shared outcome between children as they focus on their own goals (Hubbard, 2023). When children reach the reception year, they should be at the final stage of play, known as cooperative play, which is more organised as children have assigned roles and shared goals (Waters, 2022). Samuelsson and Flear (2008) also express that children are interested in playing with others and discuss rules and shared outcomes at this stage, which facilitates socialisation. Socialisation encompasses the construction of social skills, social communication, and interpersonal communication (Semrud-Clikeman, 2007; Hartup, 2013). Nelson (1996) and Spence and Donovan (1998) also argue that social competence depends on an individual's ability to apply social skills when interacting with others.

When twins are placed in the same classroom, it could impede their social development. DiLalla (2006) recognised this, identifying that twins had substandard social interactions and felt uncomfortable with their peers due to them becoming too accustomed to their co-twin, who is inherently similar to them. Vygotsky's (1978) social constructivism theory also emphasises that

children learn new skills from their peers; therefore, being around children with differing skills and capabilities can enhance twins' social development. However, when focusing on twins' overall social development, more research highlights the advantages of twins being together in education (Thorpe et al., 2001; Pulkkinen et al., 2003). Garon-Carrier et al. (2021) underpin this, expressing that twins who are educated together have considerably lower social withdrawal levels than twins who are educated separately. Likewise, parents and teachers reported that when twins are educated together, they have fewer peer problems at school because they are more likely to communicate with others when entering a new setting with someone familiar (Segal, 2006; Delgadillo, 2022).

When examining socialisation in greater detail, several significant factors can influence whether twins should be educated together or separately. Firstly, Segal (2006) indicates that twins placed in different classrooms when starting school have to separate from both their parents as well as their co-twin, which Staton et al. (2012) suggest can cause a challenging transition into school. Similarly, Bowlby (1979), Segal and Russell (1992) and Lamia (2014) acknowledge that twins have a close relationship and form a strong attachment to each other that can be overlooked when separated, leading to emotional distress. Multiple studies also demonstrate that monozygotic twins have a stronger attachment compared to dizygotic twins, suggesting monozygotic twins are less likely to be separated (Segal, 1984; Segal, 1988; Segal and Hershberger, 1999). A limitation of these studies is the age of the participants, as the minimum age is six. Consequently, they do not focus on the age at which children transition to school; therefore, it would have been more beneficial if these studies examined younger children in the early stages of education.

While separation negatively affects twins' social and emotional development, it is vital to acknowledge their individual needs when determining their classroom placement (Griffith, 2020). Similar to twins' behavioural traits, Parton (2011) indicates birth order also influences twins' social development, with the firstborn likely to acquire the leadership role and the second-born following their lead. Furthermore, Lalonde and Moisan (2003) and Jones and De Gioia (2010) demonstrate this, suggesting that when twins are educated together, the firstborn can become more dominant and overshadow their co-twin, causing them to withdraw socially, which hinders their social development. Therefore, separation may be more beneficial in this instance to avoid twins becoming dependent on their co-twin in social situations, such as letting them talk on their behalf.

Finally, placing twins in different classrooms enables them to develop individuality (Grime, 2008). Although this study poses a valid viewpoint, it lacks sufficient data on same-sex twins as the sample size is small and only focuses on opposite-sex twins. However, several other studies by Geluk and Hol (2001), Mascazine (2004) and Segal (2005) agree with Grime (2008),

acknowledging that separation promotes twins' individual development and independence, encouraging them to share interests and develop relationships with children other than their co-twin. For twins who attend schools with one class per year, Dreyer (1991) and Blevins (2001) recommend separating them into different groups to encourage new friendships and individuality whilst having the assurance that their co-twin is nearby.

Overall, there are differing opinions when questioning whether twins should be educated together or separately, with research expressing different viewpoints regarding twins' learning and behaviour, as well as their social and emotional development. From this literature review, it is evident that individual twins respond differently to classroom placement. Therefore, parents and teachers need to consider twins' individual needs as well as monitor their learning and behaviour to assess whether their placement is appropriate.

However, there is a lack of research focusing on the effects of classroom placement on twins' learning and behaviour throughout their early years of education. The majority of the research is outdated and focuses on twins in key stage one and above, even though decisions regarding twins' placement often have to be made before starting school (Preedy, 1999). Therefore, this research paper will address whether twins should be educated together or separately through their early years education and its impact on their learning and behaviour.

Research methods

Research approach

This small-scale research project follows a case study approach. Case studies investigate one case or several cases and aim to provide substantial depth and evidence to a research focus (Matthews and Ross, 2010). This research approach is appropriate for this study as it promotes a detailed analysis of whether twins should be educated together or separately by examining their learning and behaviour as well as social and emotional development (Thomas, 2022). Similarly, the depth of case studies enabled the researcher to identify key factors that may fail to appear in more superficial research approaches (Denscombe, 2021). However, case studies encounter criticism regarding bias due to the researcher relying on selective memory (Shaughnessy, Zechmeister and Zechmeister, 2003). Therefore, detailed notes and audio recordings were taken when collecting data to avoid bias.

Data collection and analysis

This study used purposeful sampling to analyse the research question effectively and ensure the validity of the findings (McMillan and Schumacher, 2006; Emmel, 2013). The study also utilised qualitative research, involving interviews and observations with one set of dizygotic twins

(Appendix 1 and 2) who attended a reception class in a one-form entry school. Interviews were also conducted with the twins' teacher, three teaching assistants (TAs) and parents (Appendix 3 and 4). Qualitative research is an in-depth study on a smaller sample size, which is suitable for this study as it focuses on one set of twins (Harding, 2018). Similarly, Buckler and Moore (2023) assert that qualitative research allows the researcher to enter the setting, enhancing reliability as they can directly observe how classroom placement impacts the twins' learning and behaviour.

Interviews

The first method of data collection used in this study was semi-structured interviews, which, unlike structured interviews, enable the participants to expand their answers further to address key points that may arise (Walliman, 2011; Denscombe, 2021). Interviews were a valuable data collection method for this study as the researcher obtained an in-depth understanding of the participants' perceptions and beliefs regarding the research focus question (Ritchie, 2004; Denscombe, 2017). The interviews with the teacher and teaching assistants were done individually, and the questions remained the same; however, in some instances, probing questions were asked to allow greater depth to an answer (Kvale, 1996). Interviews with teachers, TAs, and parents were also audio recorded with participants' consent to increase the accuracy and reliability of the findings and ensure no data was lost (Lambert, 2019). However, the researcher did not audio record the twins' interview due to safeguarding.

Unlike the other participants, interviews with the twins were done together as their teacher stated they would be more confident. Greig and Taylor (1999) also indicated that doing children's interviews separately may be too intimidating for them. The interviews with the twins were also informal and conducted within their classroom during a game to ensure they were comfortable, as recommended by Pascal and Bertram (2009), Smith (2014) and Jug and Vilar (2015). The twins' welfare was paramount during the interviews; therefore, the researcher acknowledged the twins' attitudes and behaviour regarding signs of nonverbal withdrawal, such as restlessness or reluctance when answering questions (Clough and Nutbrown, 2012; O'Reilly and Dogra, 2017). Both twins showed signs of non-verbal withdrawal, so the interview was stopped and resumed at a later date, with questions 7 and 8 (Appendix 1) asked by their teacher with the researcher present.

Observations

Another method of data collection used in this study was observations where the researcher watched and listened to the twins' interactions to identify how they were impacted by classroom placement (Kumar, 2019). The observations took place over nine weeks, observing the twins both together and separately in different situations (Appendix 2). Coast (2017) and Denscombe (2021) highlight the importance of observations as the researcher could study the twins' learning,

behaviour, and socialisation in their usual environment to ensure their natural behaviours were not altered. Observations alongside interviews were appropriate for this research because they recognised the behaviours the twins presented and the meanings behind them, strengthening the study's validity (Denscombe, 2021). The researcher then used thematic analysis to explore the findings in greater depth and identify patterns within the key themes (Braun and Clarke, 2022).

Limitations

This small-scale study was completed over a limited time of nine weeks and had a small sample size, as there was only one set of twins in the research school. However, Tight (2017) states that case studies benefit from a small sample size to enable a thorough and detailed analysis. The twins were dizygotic and both male, which could impact the reliability of the research. Larche (2007) states this is because twins are not a homogenous group, and outcomes may vary with different sets of twins, so the findings should not be generalised as they focus on a specific case. Therefore, more studies should be done on twins' learning and behaviour to provide a broader range of perspectives and increase validity (Lakens, 2022). The researcher was a student teacher, which could be another limitation of the study, as Manion and Morrison (2018) emphasise that the relationship between the researcher and the participants can influence their responses and attitudes towards the interview, further impacting the reliability of the study. However, the researcher met the twins' parents before data collection to introduce themselves and led small group activities with the twins as recommended by Arkset and Knight (1999) and Morrison (2013) to spend time in their class and build positive and respectful relationships with all participants. Overall, the research design effectively studied the impact of classroom placement on the twins' learning and behaviour.

Ethical considerations

Ethical considerations regarding research are crucial to ensure participants' safety and privacy are maintained throughout the research process (Sieber, 1992; Cohen, Manion and Morrison, 2018). The researcher received ethical approval from York St John University and worked within the university's ethical guidelines. Gatekeeper consent was acquired from the head teacher (Appendix 5), and the parents, teachers and TAs were given an overview of the research project along with a consent form that was signed before any data was collected (Appendix 6 and 7). The parents also gave passive consent for their children to be observed and interviewed, and the researcher received both twins' assent before collecting data as recommended by Check and Schutt (2012). To guarantee anonymity, participants' names and school will not be mentioned. The study will refer to the firstborn twin as Twin A, the second-born twin as Twin B, and TAs will be known as TA one to three. Finally, all participants were made aware of their right to withdraw and had two weeks to withdraw after data collection, which was stored securely and kept confidential.

Findings and discussion

The findings were thematically analysed to recognise the impact educating twins together or separately has on their behaviour, learning and social and emotional development. Some findings provide different results from current research, which will be discussed below.

Behaviour

Overall, the parents, TAs and the teacher all agree that both twins were generally well-behaved, and when asked about their individual behaviours, they all agreed that Twin B was very confident and outgoing but was reported as eager to please. In contrast, Twin A lacked confidence and was described by parents as 'quieter and shyer.' Similarly, TA1 and TA2 recognised that Twin A became more reserved and withdrawn without Twin B, indicating that educating them together may be more beneficial for Twin A. These findings align with those of Tully et al. (2004), who suggested that separation can negatively affect twins' behaviour, causing internalising behaviour. The teacher and TA3 added to this, stating that when Twin B was off school, Twin A became very emotional and 'clingy to the adults', whereas Twin B had more resilience when separated from Twin A. The teacher also emphasised that 'being in the same class has made them more confident and secure in school life' and facilitated a smooth transition, stating that they had never been upset about coming to school. This highlights the importance of twins being together in the early stages of school. DiLalla, Mullineaux and Elam (2009), Nilsson et al. (2010), and Parent et al. (2019) discuss the importance of a smooth transition, recognising that it reduces the likelihood of internalising behaviours within the school, which relates to the findings of this study.

However, the teacher stated that the twins were likely to misbehave together and that they gravitated towards one friend (Child M) who they were quite rough with. This was evident in several observations. In observation 8, both twins were playing with Child M and pretending to fight, with Twin A pulling on Twin B's and Child M's clothing. Similarly, during observation 7, both twins and Child M participated in a matching pairs game, and they began to misbehave by frantically shuffling the cards. However, Twin B then stopped and asked Twin A and Child M to stop so they could play the game. Finally, during observation 10, in another matching pairs game, Twin A began to cheat, which then caused Twin B to become quite silly as they both started to throw the cards, so the teacher asked them to tidy the game away. Although this indicated that Twin A expressed himself more with Twin B and other peers he felt comfortable with, it is evident that more externalising behaviours appear when they are together. Therefore, separation may be appropriate to encourage them to be more focused when participating in activities. This opposes the studies by Van Leeuwen et al. (2005) and DiLalla and Mullineaux (2008), who state separation causes more externalising behaviour.

These observations closely resonate with the teacher's response, indicating that being together encouraged more mischievous behaviour than when separated. The teacher emphasised that 'they are more likely to misbehave unless they know they will be separated as a consequence.' She then gave an example of when they had been split up at lunchtime and were better behaved once allowed back together. These findings are supported by Belvins (2001) and Alexander (2012), indicating that placing twins together presents more challenging behaviour. Therefore, short-term separation was used as a strategy to guide them towards more positive behaviour (Hay and Preedy, 2002)

During the TA interviews, TA1 also recognised that the twins become disruptive when together as they can 'get giddy and egg each other on'. The twins' father reinforced this during an interview, stating that they are generally well-behaved; however, it is easier to manage their behaviour if separated because 'their moods play off each other when they are together, which can cause them to become argumentative or frustrated with each other.' Although they can display signs of disruptive behaviour, it does not appear to be attention-seeking behaviour or jealousy, as indicated by Oliver, Pike and Plomin (2008), challenging their findings. Overall, from the interviews, despite differences in behaviour being evidenced during short-term classroom separation, the majority of participants did not think classroom separation in the longer term would impact their behaviour. However, the twins' father, teacher and TA1 thought their behaviour would be more positive if they were in different classes throughout their school education. This suggests that the twin's behaviour should be assessed, and if it becomes more challenging, separation may be appropriate as long as the impact this could have on Twin A's internalising behaviour is considered.

Learning

Evidence from the interviews suggested that both twins had similar levels of attainment and learning styles, which the teacher and TA2 indicated was a reason for educating them together (Parton, 2011; Alexander, 2019). Both parents acknowledged this while also stating that it is more manageable to educate them together, as they have the same homework and teacher for parents' evening, which Staton et al. (2012) also expressed in their findings. The teacher and TA2 noted that a benefit to educating them together was healthy competition, 'if you praise one, the other is then very motivated to match or do better, so there is a competitiveness with them, but I think that can be used as an advantage.' This demonstrates a clear advantage to educating twins together, which is further supported by Amundson's (2019) study findings, stating that healthy competition increases motivation towards learning. This suggests that healthy competition can increase academic performance (Bader, 2019). However, TA2 also recognised that Twin A would often allow Twin B to go first and then use Twin B's answer as a guide, suggesting Twin B was more dominant when learning, which may not give a clear picture of Twin A's understanding. This was also evident from the parents' interview, as the twins' mother stated that Twin B would try to take

over for Twin A when they read at home, causing Twin A to become reliant on Twin B. The research from Luria and Yudovich (1971) and Douglas and Button (1978) correlates with this, finding that dominance could result in one twin becoming too dependent on the other, impeding their learning and development.

The twins' reading abilities were enhanced when they worked as a pair, which was evident when comparing observations. When participating in separate phonics groups (observation 4), Twin B was more willing to put his hand up and contribute, whereas Twin A was less engaged and would only contribute when asked. In this observation, both twins struggled with their reading. However, when the twins did a phonics lesson as a pair (observation 5), Twin A contributed much more and appeared more engaged. They both read exceptionally well, and their teacher was particularly impressed with how well they did because they usually struggled with reading in a group setting. This demonstrated that phonics lessons were more beneficial when done together. These findings concur with those of Coventry et al. (2009), Kovas et al. (2015) and White et al. (2018), who found that separation resulted in twins having poorer print knowledge and lower language development.

Observations were also done during a mathematics input with the twins in separate groups (observation 6). Twin A was withdrawn throughout and needed encouragement from the teacher to choose an animal, whereas Twin B grabbed six animals straight away, leaving some children without any. Twin B then shared three animals and kept three when he should only have had one. He was very engaged in the activity and showed a good understanding of number bonds. After the observation, the teacher stated that Twin B might have taken lots of animals because it was an innate reaction for him to get enough to share with his twin, as this is what he would normally do when they were together. The findings presented from these observations indicate that separation negatively impacted Twin A's attitudes towards learning, suggesting that he would be more engaged with Twin B, whereas Twin B was not affected by the separation. Twin B's observation still indicated dominance towards learning even when separated from Twin A. The findings regarding Twin A's learning align with findings from observation 5 and Pearlman and Gannon (2011), which highlight that when twins are educated together, they are more willing to participate.

The teacher and parents reported that both twins have delayed speech and language development. The researcher also identified this during interviews with the twins. The mother then stated that the twins' two older brothers both had good speech and language skills, with their father adding, 'We have not done anything different, so I wondered if it was because they are together.' Overall, the teacher and TAs do not believe separation would impact their learning as they work well together, which is further supported by Polderman et al. (2009) and Lancia (2010), who found no notable differences in twins' attainment when educated together or separately. However, their father thinks separation could enhance their speech development because they

would interact with children with more advanced language development. Koch (1996) noted that educating twins separately improved speech, which resonated with the father's opinions regarding his sons' speech and language development.

Social and emotional development

The teacher, TAs, and parents all agreed that Twin B was more sociable with adults and children, with the teacher stating 'he will play with anyone and anything' due to his confidence. Evidence from the interviews and observation 9 found that Twin A was sociable with other children when he was with Twin B however, without Twin B, it was likely he would only play with Child M or by himself. This was seen when Twin A and Twin B were playing together outdoors. Twin B then went to play with some older children, whilst Twin A continued to play by himself. When playing together indoors, observation 1 recognised that the twins played alongside each other, engaging in parallel or associative play, having little interaction with one another. Similarly, Twin A remained in the construction area for the whole of playtime, whereas Twin B would explore more areas of the room, eventually returning to Twin A. Observation 8 demonstrated that they engage in a more cooperative form of play when outdoors. The findings from observation 1 indicate that the twins were in the earlier stages of play compared to that of their age, as recognised by Scott and Cogburn (2023).

Both parents stated that the twins went to nursery from the age of one, which they believe supported their social development and transition into school. They then stated that they felt comfortable sending the twins to school because they had each other. Their mother said this was especially helpful for Twin A, who took longer to adjust because Twin B 'helped break the ice.' The teacher, TA2 and TA3 advocated this statement in the interview, responding that it would have taken Twin A a lot longer to settle without the familiarity and emotional support of Twin B. These findings indicate that the twins had a secure attachment to each other (Bowlby, 1979; Segal and Russell, 1992; Lamia, 2014). Staton et al. (2012) note that when this is the case, and twins are separated, it can lead to a difficult transition, giving good reason for parents and teachers deciding to keep twins together.

When asked question 6, both parents stated that Twin A is the oldest. However, they both agreed that this is not shown in his personality. All TAs agree with this, saying that Twin B seems like he would be the older twin as 'he is almost like the leader.' This was evident in observations 2, 7 and 10 as Twin B often took control and organised the games for his peers. Similarly, when tidying up after the game, Twin A was asked to be the tidying detective (The tidying detective has to see who is doing good tidying and encourage their peers to tidy up). However, he became reserved and observed his peers rather than getting involved. The researcher discussed this with the teacher, who explained that when Twin B is the tidying detective, he would actively tell others what to do

and be more engaged in the role. Although these findings indicate that Twin B has acquired the role of the firstborn twin by often being in charge, Twin B is the second-born twin. This contradicts the findings of Lalonde and Moisan (2003), Jones and De Gioia (2010) and Parton (2011), who agree that the firstborn twin is more likely to be the dominant twin, with the second-born twin following their lead. TA3 also stated that Twin A can become 'lost' without Twin B. Evidence from observation 3 supports this claim. After both twins had found their Easter eggs, Twin B helped other children find theirs, whereas Twin A appeared lost and struggled to get involved. This finding suggests that keeping Twin A and B together would support Twin A socially. The findings from Griffith (2020) and Garon-Carrier et al. (2021) concur with this, emphasising that educating twins separately has disadvantages in relation to their social development.

The teacher and TA2 explained that they try to separate the twins socially as they tend to gravitate towards each other. TA3 adds that 'because they stick together, they have a small social circle,' supporting both the teacher's and TA2's reasoning for separating them. TA2 also explains that because they have spent most of their life together, separation would allow them to 'gain the same set of skills but encourage them to think for themselves rather than rely on each other.' This strategy is supported by the findings of Vygotsky (1978), highlighting that children acquire skills from their peers, therefore the need to interact with others is crucial. Overall, the teacher and TAs all agree that separation would be beneficial from year one as they will have settled into the school, and it would encourage them to be self-reliant. The teacher believed that Twin B would flourish in a separate class and thought that Twin A would 'struggle at first but would benefit socially in the long run.' TA2 supports this as she recognised that Twin A 'would not actively approach something first, he would let his brother assess the situation before joining in' therefore, being separated would encourage independence. Grime (2008) also expressed this in their findings, recognising that separation enabled both twins to develop individuality.

The twins' father agrees with the teacher and TAs when responding to question 20, stating that he would keep them together initially to see how they settle and progress and then separate them later in school to promote individuality and independence, especially for Twin A. However, the twins' mother disagrees, stating she would want them to remain together throughout school to support each other. Finally, during the twins' interview, it was evident that their biggest concern with being in different classes was having someone to play with. When asked question 8, Twin A shrugged, and Twin B responded, 'We would still play together' with Twin A adding 'and other people outside.'

Limitations

A limitation of this research is that TA1 was a mother to twins, causing potential bias in her answers; however, the researcher believed that she considered the twins' individual needs

regarding the questions. The research school was also a one-form entry school. Therefore, the researcher could only assess the impact of separation through group work. The twins non-verbally withdrew from the interview with the researcher, so the interview was completed by the class teacher, which could have influenced the twins' responses due to the power dynamic. Similarly, because of the twins' age, it made it difficult for them to express their opinions towards the research focus as they struggled to understand the concept of a two-form entry school. They also copied each other's answers which could limit the breadth of their response and the validity of the findings. However, the research findings predominantly focused on parent, teacher, and TA interviews alongside observations.

Conclusion

Overall, this research project aimed to provide an insight into whether twins should be educated together or separately and how it impacts their learning and behaviour. The findings from this research indicate that many factors influence this research focus.

Firstly, in this study, the twins' behaviour and social and emotional development, would benefit more from them being educated together in the early years foundation stage. However, the findings indicated that as the children become more settled, they would benefit from being separated to reduce disruptive behaviour and help Twin A develop more confidence. The findings presented different results for the twins' learning, stating that separation may be more beneficial to promote independence and enable teachers to have a clear understanding of the twin's progress without comparing them to their co-twin.

Overall, the findings gathered from this case study provide evidence to suggest that being placed within the same classroom significantly supported the twins throughout the early years foundation stage. This was especially beneficial for their behaviour and social and emotional development. However, this may change as twins develop and progress throughout school; therefore, teachers need to regularly identify and assess their needs. It is important that teachers reflect on these findings in their future practice to understand how to support multiples within schools. However, the findings from this study should not be generalised as all twins are different, and teachers will need to adapt their practice to meet the individual needs of twins (Lamia, 2014). Therefore, teachers should engage in research with different viewpoints and accurately analyse their twins' behaviour, learning, and social development to help them understand how classroom placement impacts multiples both positively and negatively.

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Appendices

Appendix 1 - Twins' interview:

- 1) What is your favourite thing to do in class?
- 2) What is your favourite thing to do at home?
- 3) Who do you enjoy playing with at home?
- 4) Who are your three best friends?
- 5) Do you like being a twin?
- 6) What's good about being a twin?
- 7) Do you like going to school with Twin A/ Twin B?
- 8) How would you feel if you were in a different classroom to Twin A/ Twin B?

Appendix 2 – Summary of observations:

observation	Summary of observation
1	Choosing time within the classroom
2	Group matching pairs game (in the same group but not next to each other)
3	Outdoor easter egg hunt (whole class)
4	Phonics lesson (separate groups Twin A – 9:00; Twin B - 9:15)
5	Phonics lesson (in pairs together with no other children)
6	Maths focus group (not in the same group – Twin A – 1:00; Twin B – 1:05)
7	Group matching pairs game (in the same group, sat next to each other)
8	Outdoor play time (playing together with their friend Child M)
9	Outdoor play time (together at first, then played separately)
10	Matching pairs game together in pairs with no other children

Appendix 3 – Class teacher and TAs interview:

Teacher interviews:

- 1) What are their individual personalities like? Are they similar/ different?
- 2) When grouping children, do you take into consideration whether they will be in the same group? If so, what key points do you take into consideration and why?
- 3) Have you had them work in pairs? Does this work well for them?
- 4) Do you notice any differences in their behaviour when they are together / (compared to) separate?
- 5) Do you notice any differences in their standard of work/ overall learning when they are together/ (compared to) separate?
- 6) How do you think their social development would have been impacted if they were in different classes? Would this be positive or negative? Why?
- 7) How do they interact socially with their peers within the classroom?
- 8) Do you think their behaviour would be impacted if they were in different classes? Would this be positive or negative? Why?
- 9) How do you think their learning would have been impacted if they were in different classes? Would this be positive or negative? Why?
- 10) Do you have anything you would like to add that could be helpful to know?

Appendix 4 – Parents interview:

- 1) Background information – what were they like when they were little?
- 2) Do they have siblings? If yes what is the age gap?
- 3) Were they born on their due date? / Were they premature? If yes, do you think this has impacted their learning? Do you think this has impacted their behaviour?
- 4) Did they both leave hospital together?
- 5) What are their individual personalities like? Are they similar/ different?
- 6) Who is the older twin? Does this show through their personalities?
- 7) Did they go to nursery before starting reception? What was their social development like?
- 8) Do they have social interactions outside of school? If yes what do these interactions look like?
- 9) When looking into school options what things did you feel were important to you/your children when choosing a school? What were the deciding factors?
- 10) Did you consider and/or have the option for your twins to go into separate classes?
- 11) If yes, did you consider this when looking for a school that would suit your family? Why? E.g. could you think of any advantages/ disadvantages to this?
- 12) Were there any schools you applied to that consulted you about whether they are in the same class or not? If so, how?
- 13) If this was a two-form school, would you want them in the same class? Why?
- 14) In what ways do you think being in the same class has benefited Twin B?
- 15) In what ways do you think being in the same class has benefited Twin A?
- 16) In what ways do you think it might have benefitted Twin B to be in a different class?
- 17) In what ways do you think it might have benefitted Twin A to be in a different class?
- 18) In your opinion are there any drawbacks/challenges to them being in the same class connected to their learning?
- 19) In your opinion are there any drawbacks/challenges to them being in the same class connected to their behaviour? This can include social development.
- 20) As your children move through the school years are there any instances when you think it might be better to be in a different class?
- 21) Knowing what you know now as they have progressed together, if you were looking for a school and they offered separate classes would you consider it an option for your children? Why?

Parents were also asked how they thought their children would answer their interview questions to see if they had the same responses as their children.

Further probing questions were asked to extend participants' responses.

Appendix 5 – Headteachers consent:

QTS6004M Research Project Permission form
Student name: Megan Olivia Jaques
SE3 School: [redacted]
Headteacher permissions:
I have read this student's ethical clearance form and give my permission for the conduct of this small-scale research project.
Additional parental passive consent is not required/has been obtained (please delete as applicable)
Headteacher's name: [redacted]
Headteacher's signature: [redacted]
Date: 29/1/24

Appendix 6 – Parents' consent form:

Research Study Consent Form (Parent Interviews and permission to carry out observations of children)

- I voluntarily agree to participate in this research study.
- I understand that if there is a question that I do not feel comfortable answering I can choose not to do so, without reason.
- I understand that I can choose to withdraw at any time during the study and even up to 2 weeks after data collection.
- I have been told the purpose of this research and what it intends to investigate and have been given the opportunity to ask any questions.
- I understand that my participation involves answering questions about whether twins should be educated together or separately.
- I agree to my responses being handwritten as notes and am aware that these will be included in my final research paper as evidence.
- I understand that interviews with children will be carried out in a child friendly way.
- I understand that both my identity and my children's will be kept anonymous, and letters or pseudo names will be used instead of names to ensure this: 'Parent A'.
- I understand that the name of the school will be kept confidential.
- I understand that all results and findings will be dealt with in confidentiality.

[redacted]
Signature of participant Date

I believe the participant is giving informed consent to participate in this study.
mjaques 07/02/24
Signature of researcher Date

Appendix 7 – Teachers and TAs consent form:

Research Study Consent Form (Teacher Interviews)

- I voluntarily agree to participate in this research study.
- I understand that if there is a question that I do not feel comfortable answering I can choose not to do so, without reason.
I understand that I can choose to withdraw at any time during the study and even up to 2 weeks after data collection.
- I have been told the purpose of this research and what it intends to investigate and have been given the opportunity to ask any questions.
- I understand that my participation involves answering questions about whether twins should be educated together or separately.

- I agree to my responses being handwritten as notes and am aware that these will be included in my final research paper as evidence.
- I understand that my identity will be kept anonymous, and letters will be used instead of names to ensure this: 'Teacher A'.
- I understand that the name of the school will be kept confidential.
- I understand that all results and findings will be dealt with in confidentiality.

Signature of participant Date

I believe the participant is giving informed consent to participate in this study.

Signature of researcher Date

