


Motivation factors for learning: Children and young people in UK special schools

Divisha Bhavnani

MSc in Education (Child Development, 2023)

1. I understand that I am the owner of this dissertation and that the copyright rests with me unless I specifically transfer it to another person.
2. I allow the Department to deposit on my behalf a copy of this dissertation in the Oxford University Research Archive ('ORA') where it shall be freely available online for use in accordance with ORA's Terms and Conditions of Use [\[https://ora.ox.ac.uk/terms_of_use\]](https://ora.ox.ac.uk/terms_of_use).
3. I understand that this dissertation should not contain material that can be used to personally identify individuals or specific groups of individuals (unless permission has been obtained from the individuals) and that such material should be removed before this dissertation is deposited in ORA.
4. I agree to be bound by the terms of the ORA Grant of Non-exclusive Licence [\[https://ora.ox.ac.uk/deposit_agreements\]](https://ora.ox.ac.uk/deposit_agreements) and I warrant that to the best of my knowledge, making my thesis available on the internet will not infringe copyright or any other rights of any other person or party, nor contain defamatory material.
5. I agree that my dissertation shall be available for download in ORA in accordance with paragraphs 2, 3 and 4 above.

Signed [an electronic signature is sufficient]:	
Date:	7 th August 2024

Abstract

The current study aimed to explore the motivational factors for learning among children and young people in UK special schools. Drawing on the self-determination theory and social-cognitive perspectives, the research explored factors in shaping students' intrinsic and extrinsic motivation. A mixed-method approach was employed to gain a comprehensive understanding of multiple factors of student motivation. The quantitative component involved questionnaires to assess students' preferences for intrinsic and extrinsic motivation on a larger scale. Whilst the

qualitative aspect comprised of student focus groups, to provide deeper insights into the context and strategies students preferred in school. The study split motivation types among two categories: intrinsic and extrinsic, along with investigating four independent variables: age, sex, type of educational need, and learner's time at school. The quantitative finding suggested that there is a significant correlation among intrinsic and extrinsic motivation, along with a greater preference for extrinsic rewards. There were also differences in demographic factors which influence motivation: firstly, the type of learners educational need and the duration the student was enrolled in the school had significant influences on intrinsic motivation. Whilst, for extrinsic motivation, students' age, sex and time at school were significant predictors of their preference. Regarding the qualitative results, it provided insights into the strategies used by teachers to pique students' interest and engagement. The findings suggest that the special school environment may promote the use of extrinsic motivation strategies, such as rewards, praise, point-based systems to manage students' behavior and engagement. Overall, students with SEND may demonstrate a stronger inclination towards extrinsic motivators, however, intrinsic motivation also plays a crucial role in their learning and engagement. The paper emphasises the need for a multifaceted approach to foster student motivation, which takes into account individual, school and environmental factors.

Keywords: intrinsic, extrinsic, motivation, special educational needs and disabilities (SEND), special schools

1. Introduction

Students who engage less in school and leave with limited qualifications tend to have poorer adulthood outcomes such as higher levels of unemployment, substance abuse and involvement in juvenile crime (Dräger et al., 2024; Fergusson et al., 2002). One key determinant in whether a child engages at school is their motivation (Mitchell, 1992). If a lesson is not engaging or is off-putting in some way to a pupil, then their motivation to learn can decrease. When students lose interest and motivation in learning, it is likely to negatively affect their academic attainment (Rone, 2023). This typically occurs due to

monotonous teaching methods and under appreciation for student's efforts. Research examining a typical teacher-led classroom found that student discussion and participation tended to be relatively low, ranging from 2% to 23% during class time (Smith & Seyfang, 2013). These appallingly low results apply to students who struggle with taking the initiative to engage and learn. Students need to be supported and encouraged in a beneficial way, with strategies and techniques to pique interest and involvement.

Though, there have been many factors leading to good educational outcomes such as positive peer interactions in schools, teacher-led lessons, and the inclusion of parental involvement in education (Javornik & Klemenčič Mirazchiyski, 2023). Such traditional teaching practices provide a holistic but limited overview of motivation. The importance of studying motivation contributes to our understanding of academic attainment, career trajectories, personal growth and aspirations. Research reveals that motivation does not only influence academic performance but rather impacts persistence, goal-setting, and self-regulatory behaviours (Billore et al., 2023) - all of which are crucial in navigating the challenges of adulthood. Therefore, it is important that educators take a multifaceted approach to nurture students' motivation.

This dissertation will cover the following factors 1.1 Motivation Definition, 1.2. Theory of Motivation, 1.3. Categories of Motivation, 1.4. Rewards, 1.5. School Factors, 1.6. Individual student factors, 1.7. Motivation in Special Schools 1.8. Students with Special Educational Needs and Disabilities, 1.9. The Current Gap in our Knowledge, 1.10. Research Questions / Aims.

1.1 Motivation Definition

Motivation can be described as a unitary, quantitative construct that reflects outcomes (Vansteenkiste et al., 2009). It can also be deemed as an internal force that drives us to take action, guides us towards particular goals or behaviours, and leads us to persist in practicing certain actions over time (Çöğür, 2010; Ormrod, 2016). Within the educational context, motivation can be placed on a continuum of developmental phases ranging from highly internalised (e.g., integrated or identified regulation) to highly externalised (e.g., introjected and external regulation). Some researchers believe that students' motivation can be categorised by their internal desires and reasoning for taking part in an activity (Kamil et al., 2008). For example, Kamil et al. proposed that motivation could be split into A) ability- the individual should have the ability and skills to complete the task, B) interest- the student should interest in the topic of choice and C) value- the student should value the information learned. According to Brown (2001), motivation can be defined under a different lens depending on the perspective taken. Concerning the behaviorist view, motivation can be seen as the anticipation of reinforcement which drives behaviour in the classroom. Further, from the cognitive viewpoint, motivation stems from innate factors which guide

and maintains human behaviour. In summary, these varied definitions display the nuances in capturing the concept of motivation as a factor which stimulates teaching and learning. Based on these suggestions, it appears that motivation can be best described as the process whereby goal-directed tasks are initiated and sustained. It is the driving force which gives behaviours a purpose and direction.

1.2 Development of the theory of Motivation

A deep-rooted theory for the motivation knowledge base is derived from human needs. It can therefore be viewed and understood from different perspectives, for example, psychological, behavioural, biological or sociocultural. A well-established theory of motivation was derived from Deci and Ryan (1985), who proposed the self-determination theory. This theory has been utilised under different domains such as education, health care, sports and business organisation. The self-determination theory aimed to take the cognitive perspective of motivation one step further, where motivation is seen from a personal, social and needs-based perspective. This theory gave rise to three main psychological components: 1) autonomy, 2) relatedness and 3) competence. Autonomy refers to the need for choice and control one has over one's actions. Competence is the need to feel effective in an interaction or to express one's abilities. Lastly, relatedness refers to the need to be connected to those being cared for and by others, along with experiencing a sense of belonging within a group. The self-determination theory suggests that these are the underlying factors motivating individuals to achieve goals.

Given the current emphasis on educational settings, one theory which has been pivotal in exploring motivation is the social-cognitive perspective. This theory highlights the importance of the environment, in addition to cognitive and emotional factors (Bandura, 1997). Discussed within the school context, this could refer to the teacher's role in providing feedback, the student's self-beliefs and the student's academic achievements (Pintrich, 2003). The social cognitive theory elicits a link between students' processes and the social environment around them. This consists of self-beliefs and values that they possess about their ability to learn. For instance, if a student believes they are capable of achieving higher academic grades, the motivation driving learning would be enhanced (Alderman, 2013). In comparison, if a student believes the effort would yield no consequence, the amount of learning input would be lower (Cook & Artino, 2016). Further, this is integrated with environmental influences such as incentives and rewards by educators, for example free time, small toys or certificates. The last component is the individual's performance and behaviour upon receiving feedback and evaluations from teachers. Upon receiving positive feedback and recognition for their hard work, students can feel a greater sense of perseverance to maintain their beneficial behaviour compared to receiving negative feedback which can impair their sense of accomplishment and act as a demotivating factor. Hence, it is vital for teachers to have appropriate consequences of students' actions to guide them towards having positive learning habits.

Over the years, researchers have delved into the complexities of promoting motivation for learning in schools using a wide range of strategies. An outdated model of motivation may fail to capture the nuances of how today's learners are motivated. Therefore, regular updating of our knowledge can better design learning environments and strategies which could effectively nurture student's learning.

1.3 Categories of Motivation

According to the revised theory of self-determination (Ryan & Deci, 2008), the two central components of motivation include autonomous and controlled motivation. Autonomous motivation consists of two segments: 1) identified and 2) intrinsic (Vansteenkiste et al., 2009). First, identified motivation can be described as an individual carrying out a task based on the task relevance and the importance it holds. Whilst intrinsic motivation is represented by the individual's interest in the task, therefore completion serves as a reward in itself. For students, this could be varied as academic programs include components which may not be of interest to everyone. Yet, students must remain attentive and perform well to obtain good grades. In these situations, the following component of external factors could come into play to encourage motivation. Controlled motivation involves individuals who partake in a task because the option of choice has been removed by an external or internal influence (Ryan & Deci, 2008). Among controlled motivation, both 1) external regulation and 2) introjected motivation plays a role. People who are influenced by external motivation do so with the potential for rewards or fear of punishments. Similarly, people who are introjectedly motivated are guided by their internal force, for example, experiences of guilt or pride. This suggests that students' learning, and completion of tasks can be regulated by manipulating external factors such as teachers' praise or reprimand, parents' involvement in the child's education and peers' pressure to make decisions.

To highlight the educational setting, it has been observed that students who are highly motivated generally tend to have a more meaningful educational development (Vansteenkiste et al., 2009). Likewise, it has been examined that motivation has been highly correlated with academic achievement in schools (Areepattamannil, Freeman & Klinger, 2011, Ceylan et al., 2016, Othman & Leng, 2011).

However, it has been observed that the majority of the motivational strategies being developed to support students' learning are rooted in extrinsic motivators (Martin, 2021). Extrinsic motivation is often highly utilised in schools due to its instant gratification abilities. Students are rewarded immediately following completion of tasks, or for carrying out positive behaviours. This type of reinforcement typically comes from an outside source such as a teacher or parent. However, all types of motivation factors can have different effects on students, this could range with the consistency of the behaviour and amount of effort students implement.

1.3.1 Intrinsic

Intrinsic motivation is one type that can be defined as the innate driver for self-enhancement and regulation (Akpınar, Batdı & Dönder, 2013). Intrinsic motivation is deemed a strong feature in learning: when a student is intrinsically motivated, the quality of learning is of a higher standard. This is because the direction and effort rely on their judgement (Schick & Schewedes, 1999). If students are motivated intrinsically, they set learning goals with which they feel a greater sense of accomplishment. According to researchers, intrinsic motivation is the exemplary category in education as it drives students' curiosity and engagement in learning (Harlen, 2006). When students' curiosity enhances, they are interested in learning new ideas and are more willing to try new things, as compared to when they feel controlled by external influences. The self-motivated interest in learning peaks as the central incentive for academic development. Intrinsic motivation has shown positive associations with learning outcomes. A few examples of such educational products include enhancing grades, image of self-efficacy and persistence in tasks (Henderlong & Lepper, 2002; Deci et al., 1991). When students are gaining positive outcomes from their self-motivated learning, they uphold a constructive cycle whereby putting in more effort, can lead to being rewarded with improved academic performance.

For a student, the confidence they display in their work, and their attitudes towards learning can explain their perseverance and performance in class. When a student possesses intrinsic motivation, they set goals which target future actions and behaviours (Lens et al., 2001). Thus, intrinsic motivation has shown evidence to present long-term benefits for students to maintain their academic goals and make improved progress over time.

Research has shown that intrinsic motivation can be highly associated with positive educational outcomes (Vansteenkiste et al., 2006). These include aspects like greater persistence and enhanced well-being: which are skills beneficial for equipping all students with. Furthermore, students who were deemed intrinsically motivated tended to approach tasks with curiosity, and self-determination. These factors were shown to foster a deeper engagement and push students towards mastery of those tasks.

1.3.2 Extrinsic

As mentioned above, extrinsic motivation is another key type of motivation referring to an external source, such as rewards or punishment from specific people, which influences an individual to complete tasks or carry out behaviours (Witzel & Mercer, 2003). For a student, the external source of motivation could be an individual, for example, a parent or a teacher. These social influences could provide reinforcements such as verbal recognition in front of peers, special privileges in the classroom and tangible objects like stickers and sweets. In turn, this could encourage students to continue these

behaviours over time. Moreover, students also perform tasks to avoid consequences such as delayed submissions, and the fear of receiving punishments.

This type of motivation is typically adopted in schools due to its ability to provide immediate feedback (both positive and negative) for students, for example, receive a reward upon completion of a positive behaviour or task which leads to greater persistence in academic tasks. However, the utilisation of solely extrinsic motivation for students can have detrimental effects on learning (Dean and Dagostino, 2007). When rewards or punishment are extracted from the setting, it is observed that students' motivation can be greatly affected; students tend to lose their interest in learning since they are aware there is no consequence which follows their behaviour (DeLong & Winter, 2002). Moreover, another significant negative effect has been identified when having a consistent reward over time can turn into a demotivating effect over time. Eventually, students' engagement for the same reward tends to wear off, hence lowering their work ethic. When students are relying on rewards to persevere, the task holds less of value and does not provide any psychological satisfaction with outcomes (Vansteenkiste et al., 2009). In turn, teachers would have an additional task to increase or swap out rewards to maintain curiosity and engagement for task completion. Furthermore, in order to engage learners, the teachers would need to highlight the importance of a given activity- pointing out how the knowledge can benefit students later in life.

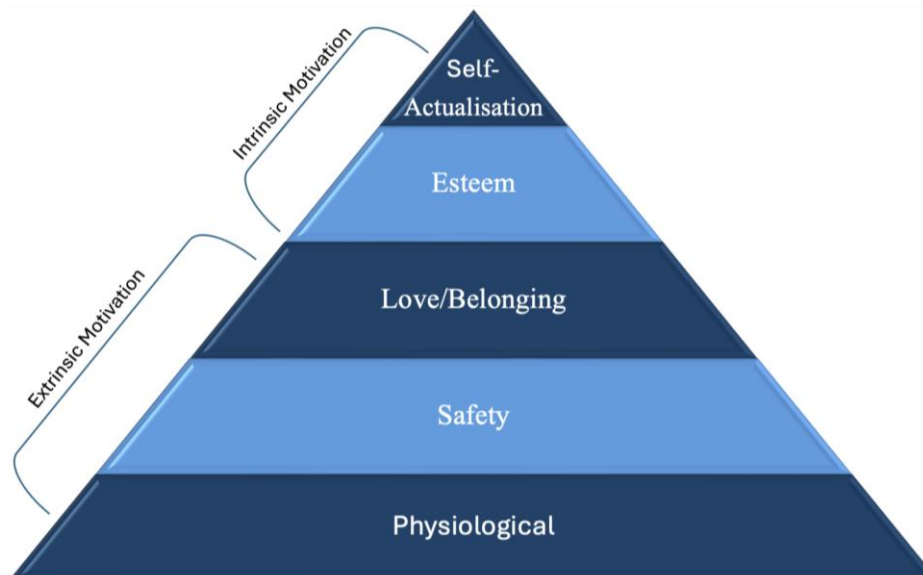
Furthermore, a crucial component for educators to consider is whether the provision of external rewards prevents intrinsic motivation from taking place. Since students complete tasks contingent on rewards, these influences hinder self-motivation and internal drive to take place (Wery & Thomson, 2013). Therefore, students work on a routine based on rewards and punishments rather than broadening their interest and curiosity in the content being taught. Research evidence displays that extrinsic rewards work as a weak moderator of motivation which produces results on a short-term basis, and potentially leads to detrimental effects on student's long-term progress. Benabou and Tirole (2003) found that external incentives tended to cloud an individual's understanding of their abilities which would make them more inclined to attempt tasks they would typically be unsure about. This suggests that external influences give rise to a temporary boost in motivation, which otherwise wouldn't be prevalent. However, if the rewards are removed, task motivation and engagement become severely reduced. This results in a need for educators to use a variety of rewards in initiating motivation in learning.

1.4 Rewards

Based on Maslow's theory (1962), there is a hierarchy from intrinsic to extrinsic reward system. Within Maslow's system, there are tier needs so that individuals' needs can be met: these contain basic

human needs, safety, love and belongingness, esteem and self-actualisation. Different components of the hierarchy can be quantified by internal or external rewards which drive human behaviour. These rewards could be placed on a continuum which can be used by teachers to classify possible reinforcements for students (See figure 1). Sprick et al., (1998) proposed that individuals are motivated by a complex mixture of both intrinsic and extrinsic rewards. Therefore, in order to cater for students, educators need to understand their students' needs. Since there can be multiple motivation needs occurring at the same time, this makes the role of delivery challenging to a group of students in a classroom. Consequently, teachers have resorted to using a few staple methods of reinforcement which have been observed to be preferred by students (Lestari, 2020). These strategies for reinforcement include verbal reinforcement (such as praises), non-verbal (these could include gestures like a thumbs-up or a smile), vicarious (for example, a teacher could publicly recognise a student for positive behaviour, hence motivating others to engage in similar positive behaviours) and delayed (an example could be rewarding students at a later time to commend a week's work). Among these techniques, the most common from teachers was non-verbal reinforcement, consisting of a smile or nod towards students. However, in the same study, Lestari (2020) found that students preferred verbal reinforcements such as praise, as it made them feel good within. Thus, leading to inconsistencies between teacher and student preferences.

Figure 1: Displays the hierarchy of needs adapted to show the shift from extrinsic to intrinsic motivation



Understanding how students perceive rewards is also important in decoding their preferences. Even though reinforcement or rewards are delivered by educators, they can be received by students in

different ways. For example, when a student asks questions after class based on a topic, they find interesting, although he is intrinsically motivated with curiosity, he could also be extrinsically rewarded by seeking to spend more time with the teacher. With reference to this example, students can be motivated by social aspects such as the allowance to spend additional time with teachers or friends (Filgona et al., 2020). The teachers and friends could be described as confidence boosters, distraction from work or simply a listening ear.

Another component of external rewards includes the delivery of tangibles upon positive behaviours and actions. Tangible rewards could involve sweets, stickers, a point system or access to desired activities such as time on the computer, or additional free play. These rewards are typically used for students of younger age groups since they target the appeal of the incentive before engaging in the child's interests. However, it is noted that in younger classrooms, teachers tend to begin with external rewards to encourage intrinsic motivation (Witzel & Mercer, 2003). After this, the teacher aims to gradually fade the delivery of such reinforcements and increase verbal praise to connect with students' abilities.

Several research studies have been carried out to investigate the role of motivation in the classroom from a teacher's perspective. Teachers are required to determine what drives students to work most efficiently, and how educators can derive strategies for their optimal academic outcomes. In reality, all students are driven by different factors. As a result, teachers and schools have the everlasting challenge of finding strategies which will be most appropriate for their students.

1.5 School factors

Motivation in the educational setting can be viewed under multiple lenses claiming learning is a result of either intrinsic or extrinsic motivation (Hayamizu, 2002). However, the interaction between these motivation types with students' learning has been debated over several years. Some claim the superiority of intrinsic motivation as it originates from within the individual and is independent of external influences. As a result, Tang (2008) proposed that school educators should develop strategies to enhance intrinsic motivation in students and avoid providing extrinsic rewards. However, the opposing viewpoint of this debate suggests that both intrinsic and extrinsic motivation could co-exist for students (Lepper et al., 2005). When students' motivation to complete tasks is low, extrinsic rewards can have a significant positive effect in establishing the reason for task completion. Nonetheless, extrinsic rewards may not be suited to all students, as there are individual preferences which cannot be generalised to the whole class.

The motivational strategy of using extrinsic rewards can be considered as a beneficial tool when discussing the element of age. Research found that when intrinsic motivation was undermined, the

presence of extrinsic rewards showed significantly higher levels of motivation in children than when compared to college students. The difference in reward preferences provides insights into why educators prefer to use external rewards, for example tangibles and verbal praises for younger children to increase engagement (Boggiano et al., 1987). As students enter secondary school, their need for external motivation for learning reduces (Corpus et al., 2006; Lepper, Corpus & Iyengar, 2005). These findings could be explained by individuals taking more control of their education as they grow older, thus decreasing the need for incentive opportunities and increasing student autonomy. However, one could question whether the use of tangibles and edibles simply undermine the value of learning, whilst placing more emphasis on the contingency of reinforcements: students may be more prone to complete tasks solely for the opportunity and access to rewards, rather than processing the content for learning purposes. Given this argument, there should be careful reflection by educators prior to using different reinforcement strategies to motivate students' learning.

Keifer et al., (2015) proposed that teachers' reinforcements are crucial to a students' emotions and feelings within the classroom. Students are heavily influenced by their immediate surroundings, which include teachers and peers. Keifer et al. found that the educator and peer support significantly modified students' participation, sense of belonging and motivation in the classroom. Similarly in the same research, results showed that instances when teachers were able to meet the requirements of students, this positively influenced their classroom motivation. According to the evidence it could be suggested that teachers as external figures are central to influencing students' motivation. This emphasises that students' preference of rewards is crucial to their own learning progress and classroom behaviour. Such findings could elicit an association which avoids using external rewards but builds on the connections between teachers and peers. Consequently, within mainstream classrooms, the class sizes are not ideal for teachers to provide individual attention to students to highlight their presence. Therefore, teachers have an additional role in offering varied motivational strategies to pique interest and provide reinforcement most effectively.

Overall, there are several differing views about motivation preferences for learning. Some techniques work significantly better for a specific population, whereas other strategies are more beneficial for a different demographic. Schools and teachers should aim to employ effective extrinsic factors whilst ensuring it does not interfere with individual students' intrinsic motivation.

1.5.1 Students with Special Educational Needs and Disabilities

The motivational strategies of students with special educational needs and disabilities (SEND) differ from their typically developing peers. This is because these individuals often exhibit different cognitive, behavioural and social abilities which shape their learning experiences and preferences. One

factor that has been researched scarcely is the linkage of students' motivation preferences based on their type of educational need. For students with SEND, although there are numerous possibilities for rewards, not all of them work efficiently to motivate learning. Some students with a specific learning need may respond better to tangible rewards, but some may prefer social rewards.

A body of research carried out by Wehmeyer and colleagues (2017) found that students with learning disabilities tended to respond differently to motivational strategies than students with physical or sensory impairments (Wehmeyer et al., 2017). At an individual level, the learning processes associated with neurodevelopmental disorders can have implications for students' educational needs and their motivational preferences. As an example, it has been found that individuals with Autism Spectrum Disorder (ASD) tend to exhibit strengths in being detail-oriented, however, face difficulty with flexible problem-solving and social communication (American Psychiatric Association, 2013). When these tendencies are in play with school learning, students with ASD thrive in highly structured environments where there are clear instructions and routines to follow; they prefer verbal rewards praise contingent on task completion as a fixed schedule of reinforcement (Wehmeyer et al., 2017).

In contrast, according to the American Psychiatric Association (2013), students with Attention Deficit Hyperactivity Disorder (ADHD) tend to have symptoms of distractibility and display difficulty in regulating their behaviours. These symptoms hinder their academic achievement and alter their motivational preferences: it has been found that students with ADHD respond better to motivational techniques which limit environmental distractions and provide immediate feedback on their behaviour, such as smaller rewards rather than delayed larger ones (Wehmeyer et al., 2017). Frequent check-ins with these students may act as a reminder of the task ahead and provide them with a sense of direction. Overall, recognising the individual differences in students is essential in designing an educational system which caters for their unique needs and preferences. Therefore, this provides insight into the necessity of tailored approaches to motivational strategies in schools.

1.6 Individual Student Factors

In recent years there has been a growing body of research investigating how different individual characteristics of students can influence their motivational preferences, and in turn better their educational outcomes (Wehmeyer et al., 2017; Gottfried et al., 2001). A few of the studied characteristics include age, sex and parental involvement. First, the aspect of age has been examined to comprehend whether there is a shift in students' educational journey. Research has shown that younger students tend to be more responsive to extrinsic (motivation) rewards, whilst older students have a greater inclination towards intrinsic motivation (Gottfried et al, 2001). Furthermore, concerning sex-based differences, it has been

examined that female students are more intrinsically motivated, whereas male students may respond better when provided extrinsic rewards (Corpus & Wormington, 2014). These findings could shed light on the possibility of an unstable profile of motivation throughout a student's educational journey. However, the studies do not address how the interaction between age and sex influence motivation, such as whether younger girls are more driven by intrinsic motivation (female preference), or extrinsic rewards (younger age preference) and similarly for males. Further research could elicit developmental factors at play between age and sex, which could influence motivational preferences.

The length of time a student has been enrolled in a school can also play a role in their motivational preference but is less researched. Gottfried and colleagues (2001), researched newly enrolled students aged between 9-17 in a school and found that these students were more responsive to extrinsic rewards. While those students who had been at the school longer developed a stronger intrinsic drive for academic motivation coinciding with their advancing age. Although the study did not investigate the association between teachers and students, one possibility which could explain this phenomenon could be the quality of relationships. If teachers were more involved and closely connected with students' progress and learning, over time this may lead to a disinclination towards extrinsic rewards. Students may begin to prefer spending time with teachers and peers, to gain positive verbal reinforcement. Thus, increasing their preference towards internal drivers for learning, as opposed to external rewards. If students were to favor their social relationships within school, it could potentially lead to a beneficial and supportive learning environment.

These results consider the importance of the individual elements of people's characteristics. There can be unique variability which can contribute to students' motivation preferences. It is important to note each student may have a different driving force when faced with learning academic skills. All previous research on motivation typically covers students and teachers in mainstream schools. Less is known about the motivational drivers for children and young people with special educational needs and disabilities (SEND) either in mainstream schools or in special educational schools.

1.7 Motivation in Special Education

Special education needs schools employ teachers who are experienced in providing assistance and support to students with special educational needs and disabilities (SEND). In special education, when dealing with students' behaviours, it is crucial to reduce distractions and engage the students in the content of the lesson (Witzel & Mercer, 2003). Since students with learning difficulties struggle with their focus and persistence, SEND teachers claim to use an increased proportion of extrinsic motivation in their lessons. Weitzel and Mercer (2003) claimed that SEND students have a relatively higher level of dependence on teachers compared to non-SEND students, therefore, teachers are required to use

reinforcements to shape behaviours. Although the need for increased attention from teachers could ideally allow for more intrinsic motivation in typically developing students, for students with SEND the same association did not yield the same result. This proposes that there is a clear differentiation between motivational preferences and functions of behaviour of students. Furthermore, the study also revealed that SEN teachers believe intrinsic motivation is a factor that develops with age, therefore, for younger students external rewards work more effectively for task completion (Witzel & Mercer, 2003). Nonetheless, these findings are not applicable to students in all contexts, suggesting the need to further examine the relationship between rewards preferences among students of different educational needs.

Conversely, other evidence from examining SEND students' motivation suggests that extrinsic motivation is solely one aspect towards establishing intrinsic motivation. When teachers determined SEND students were working merely for extrinsic rewards, the teachers were asked to highlight the importance of alternative strategies in distributing rewards (Hoffman et al., 2009). For example, providing more opportunities for social interactions and highlighting increased usage of positive reinforcement (Davis & Florian, 2004). Kaplan et al., (1996) aimed at investigating the role of self-reinforcement among students with developmental disabilities. Self-reinforcement is a term used when an individual serves as the reinforcement for one's own response. In this context, when a student accomplishes personally set goals, the completion of said goals serves as self-reinforcement. Kaplan (1996) found that when students stopped self-reinforcing, their academic conduct declined. This suggested that students with SEND tended to correlate verbal praise with positive self-guided behaviours. Such findings could be beneficial in tackling the concept of motivation in learning. If such a principle exists among all students, this could recommend teachers to increase their frequency of praise in the classroom. Thus, increasing students' potential to self-reinforce positive behaviours upon receiving social praise. Alber et al. (1999) also suggested that the positive effect of verbal praise delivered by teachers was beneficial in increasing the performance of students with learning disabilities. In their research, the students with SEND tended to acquire an understanding of the value of a teacher's praise and embed it into their learning for self-motivation.

As students grow older, the ultimate goal is for students to recognise and internalise the value of their positive actions and eventually increase the frequency of it occurring. For teachers, it was suggested that they should draw attention to students' behaviours, contrary to a tangible reward when aiming to reinforce positive behaviours. As SEND students develop the ability to self-reinforce and build intrinsic motivation, the teacher could systematically decrease the utilisation of external rewards such as tangibles or edibles. However, teachers must continue to provide verbal praise to students contingent on positive behaviours and the efforts they put into their learning.

Special schools play an important role in catering for students who require additional support and have specific learning needs. They are positioned to cater to the developmental trajectories of SEND students, which may differ from a mainstream classroom environment. Special schools can provide valuable insights that may not be captured in mainstream settings, where the average teacher-student ratio in the UK is 1:25 (Department of Education, 2019). This suggests that there is highly limited individualized attention provided per student, whereas, in special schools, the ratio is much lower at 1:6 (Department of Education, 2019). Given there are distinct needs and learning environment for SEND students, the strategies which may be effective in mainstream classrooms, may not directly translate into special education settings. Therefore, this investigation is particularly important given that within the United Kingdom, there is an emphasis on integration and accommodation for students with SEND (Department of Education, 2015). Understanding the dynamics which shape SEND students' learning in specialised environments can help inform inclusive strategies.

1.9 Gap in Our Knowledge

There are two main gaps in our knowledge. First, most motivation research has been conducted in mainstream schools where the need and drive of students is different compared to special schools. Secondly, the limited research of motivation with children with SEND does not provide clear guidance for teachers and educators with consideration to a child's age, gender, educational need and time in school.

1.9.1 Most motivation research has been conducted in mainstream schools

To tackle the first component of largely limited research for SEND pupils, more focused research is required to holistically comprehend motivation. There are two categories of SEND students: those in mainstream schools, and those in special education schools. Even though educators are aware of the integration of some SEND pupils into mainstream classrooms, due to fairness and equality reasons, additional support and reinforcements cannot always be provided specifically to students with SEND. Therefore, if students require more support in maintaining their work ethic and building motivation, this need can go unmet. Students can identify when their peers are receiving increased attention compared to the class norm. Therefore, the teachers in mainstream classrooms try to highlight equality across all students. As a result, students with SEND tend to get left behind in their ability to perform with similar progress to those typically developing peers (Parsons & Platt, 2017).

Some children with SEND struggle to comprehend and learn to their full potential in a mainstream setting, therefore, to counter this issue, some parents of SEND children are more inclined to

enroll their child into special education schools. In the UK alone, there are 1,546 special schools with an approximation of 1.57 million children. These schools provide the children with enhanced care and support from teachers who are trained and experienced in catering for different needs. The use of positive reinforcement and scaffolding is widely discussed as being a key component in special education (Parsons & Platt, 2017). Students enrolled in special schools tend to be placed in classrooms with students of similar abilities and/or educational needs, hence providing a more homogenous realm for them. There is a serious lack of research on examining the motivation preferences of special students who are studying in special schools. Based on the literature, since extrinsic motivation is highly used and preferred by younger students in mainstream schools and transitions into a preference on intrinsic motivation such findings may differ when SEND students are so closely supported by external figures throughout their schooling (Landrum & Kauffman, 2014). Teachers provide more individualised support in special schools, therefore perhaps the delivery of targeted reinforcement can be found at an increased frequency.

1.9.2. Limited research of motivation with children with SEND

However, research based on motivation in UK special schools is limited and does not highlight the importance of student-centred approaches for the needs of SEND learners (Ravet, 2011). Studies lack the emphasis on deeper comprehension of how factors like age, sex, and the type of educational need students have shaped their motivation preferences. To highlight the second gap in knowledge, this concerns the implications for educators and teachers of SEND pupils. The suitable use of rewards which can allow SEND students to nurture their intrinsic motivation is yet to be discovered. Gaining an understanding of motivational preferences is important for supporting educational interventions. When the best intrinsic and extrinsic factors are identified for different children and young people and their differing needs, educators can tailor lessons and techniques to enhance the academic learning and well-being of those students.

Therefore, this paper will discuss the motivation factors that are preferred by students with SEND who are based in special schools across the UK. The study's findings can have significant implications for schools, educators, and researchers working in the special education field. There are nuanced factors which shape the motivation factors of SEND students, therefore, this research aims to shed light and inform the unique preferences of this population. The results of this study can provide feedback to special schools on how they can better support their students' learning.

1. 10 Research Questions and Aims

Based on the identified gaps in our knowledge, the current study aimed to research motivation factors for learning within a classroom setting in UK special schools. As there is a limited scope of literature based

on investigating students with special educational needs, this paper aims to explore motivation factors from the student point of view using a mixed-method approach. There are two research aims in the investigation:

1. To determine whether students were motivated based on intrinsic or extrinsic factors
2. To identify any differences in preferences linked to individual student factors such as age, sex, type of educational need and time at the school.

2. Research Methods and Design

2.1 Study design

In order to investigate the complexity of motivation, a cross-sectional, mixed-methodology approach was utilised to assess the abstract concept. Convenience sampling was utilised to recruit participants from special schools in the United Kingdom. Quantitative data questionnaires to students were administered, supported by qualitative focus group data from students.

2.2 Participants

In this study, a total of 131 students aged between 5-15 years old participated in the questionnaire: age Mean = 12.75 (SD= 2.14). Girls = 11% overall. Of all those who took part, six also participated in a focus group (5 boys, 1 girl aged between 12-15). The students' age range for this study was decided after a patient and public involvement and engagement (PPIE) consultation with two experts in the field.

The headteacher of a special school network in Oxfordshire was approached to discuss the recruitment of several special schools within the UK. Eligible schools were contacted by the network lead before being enrolled in the study. Eight UK special schools participated; there were two distinguished school types involved: Autism Schools and Social Emotional Mental Health (SEMH) schools. Autism schools (N = 4) are a group of schools which offers educational services for neurodivergent students across the country. They aim to create an inclusive environment, where autistic students are empowered with skills to engage with the world around them. Furthermore, SEMH schools (N = 4) provide comprehensive services to children and young individuals with Autism, and Social Emotional Mental Health (SEMH) difficulties. They emphasise delivering support to cater for individual and unique needs for each student. Given the nature of the study investigating students with special educational needs, teachers indicated potential students who were able to take part. The underlying requirement of reading and comprehension skills were identified in order to complete the questionnaire, along with reasoning and

verbal language for the focus group. An exclusion criterion was set such that students deemed unable to complete the questionnaires cognitively would not be included.

2.3 Materials

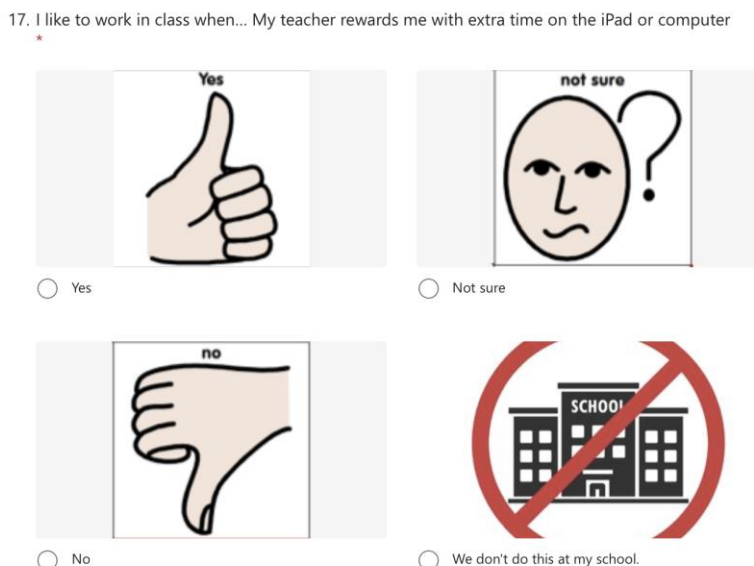
2.3.1. SEND Motivation Questionnaire

A 14-item online questionnaire was specifically designed for this project to measure motivation in terms of the two categories: intrinsic and extrinsic motivation. The questionnaire was adapted from the 31-item tool by Bin Dayel et al., (2018), which is used to measure students' motivation in mainstream schools. The questionnaire adaptation was completed in collaboration with a Speech and Language Therapist (SaLT) to ensure language suitability for the participants. It was adapted to include an additional question upon consultation with experts in the special education field: based on the UK special schools enrolled in the study, the network lead explained the use of a point system implemented as a class-based reward system. Therefore, an additional question was added to the extrinsic motivation scale stating 'I like to work when... My teacher rewards me with a sticker (star) on my chart, a certificate or a dojo point', this aimed to inquire about students' preference in using the point system. The questionnaire was also adapted with simplified language in the wording of questions, in order to be suitable for all students aged 5-15 who had appropriate reading and comprehension skills.

The new questionnaire was presented electronically via Microsoft Forms for the ease in administration and based on the preference of the schools. The format of the questionnaire consisted of two sections: demographic information including age, sex, the type of school (indicating type of educational need), along with the duration the learner has been at the school (since April 2024, since January 2024, since September 2023 or before September 2023) and motivation factors which consisted of the 14 close-ended questions: measuring the preference of seven intrinsic and seven extrinsic factors. The options for responses were given on a 3-point Likert scale, ranging from yes, not sure and no. The questions were complemented with visual stimuli (widget symbols), in order to cater for those students with a lower cognitive ability. Images were presented with each option for responses, for example, a thumbs up indicating 'yes', a puzzled face with a question mark for 'no', and a thumbs down referring to 'no' (see Figure 2)

The questionnaire was adapted after one school mentioned an issue with the current options. The school pointed out that some questions within the extrinsic motivation scale were not applicable to their students. Therefore, an additional option of 'we don't do this at my school' was included on three questions: 'I like to work when... 1. My teacher rewards me with extra time on the iPad or computer, 2. my teacher rewards me with extra time choice, 3. my teacher rewards me with a sticker (star) on my chart, a certificate or a dojo point (refer to Figure 2). The questionnaire received two student responses prior to the adaptation.

Figure 2: A screenshot of one of the questions with the widget symbols, along with the adaptation option



The questionnaire was assessed for its reliability, and the results are as shown in Table 1, the Cronbach's alpha coefficients were calculated with the two subscales, along with an overall motivation score which was created by summing all the subscales. The intrinsic scale includes the full set of data including 131 complete responses; however, the extrinsic scale only consists of 83 responses. This was because some students opted for the questionnaire response which stated that the question was not applicable to them, therefore for the reliability test, those responses were removed. Similarly, the total motivation score consisted only of the 83 completed responses. All the variables display a high reliability coefficient above .70 (Tavakol & Dennick, 2011), indicating that the motivation construct was assessed in a consistent manner within the sample of participants.

Table 1
Cronbach's Alpha for Motivation Subscales

Subscales	N	Items	Cronbach's α
Intrinsic	131	7	.83
Extrinsic	83	7	.80
Motivation	83	14	.87

2.3.2 Focus Groups

Furthermore, the research also consisted of a focus group procedure. A few question prompts were developed to elicit qualitative data (See Appendix B). The first two questions were posed to gain insight on the students' values and beliefs about learning in school. The next 2-3 questions tackled ways in which schools and teachers can assist in supporting students learning. By asking students' preference on what strategies help them learn, educators can work towards ensuring an ideal learning environment. In addition, the last two questions were aimed at grasping students' emotions and feelings towards their teacher's response. The class teachers acts as an external influence on the student, therefore, the questions examined whether teacher's positive or negative response motivated student's behavior.

2.4 Procedure

Schools consented to take part. Parents could opt their children out of taking part. Students could assent on the day.

2.4.1 Questionnaire

The teachers presented students with one of two information sheets which were distributed based on their age or cognitive ability. If their age or ability fell between age 5-10 years, they were provided with a version adapted for a younger audience with simplified language. Whereas, if their age or ability fell between age 11-15 years, they were presented with a version catered for an older population. The teachers were allowed to read the information out to students to ensure comprehension if necessary. However, they were asked not to be involved in the completion of the questionnaire except for the demographic information. All students were asked to provide verbal assent to take part in the following activity. Upon each student giving assent on the day of data collection, they were presented with an electronic device where they completed the digital questionnaire. The first section regarding the anonymised demographic information was filled out by a member of staff to ensure accuracy. Students completed the next 14 questions concerning their motivation preferences individually – without external influence from staff, but with technical or comprehension support from staff if required. The questionnaire took approximately 10 minutes to complete per student.

2.4.2 Focus Group

In order to obtain qualitative data for an in-depth analysis of information, focus groups were conducted post-questionnaire completion with two groups of students. The school taking part in the focus group was selected by the network lead based on ability and availability of students and staff members.

Upon selecting the school, the teachers could select which students were comfortable and willing to talk with the researcher.

On the day of data collection, students selected were asked to provide verbal assent giving confirmation of their approval to participate. The focus group was conducted by the researcher and supported by the researcher's supervisor and a member of staff from the school. This ensured that students had a familiar person within the room if they chose to withdraw or ask questions. Two focus groups were conducted with a group of students selected from one approved school based on availability and students' cognitive abilities. The two focus groups consisted of 3 students each, selected by the schoolteacher. The focus groups were held within the school but in a quiet room. They lasted approximately 15 minutes and the conversations were audio recorded for transcribing purposes.

2.5 Ethical considerations

In order to carry out research in special schools across the UK, ethical approval was required and granted from both the school's network lead and the university's Central Research Ethics Committee (CUREC). Upon approval (reference: R92581/RE00), the data collection process began following the guidelines and codes in the Ethical Code for Educational Research.

Once the schools gave their approval to carry out research in their respective schools, each school sent an information sheet, along with an opt-out form to parents/carers/guardians whose students fall within the age range. If students had been opted out by their parents/carers/guardians, they would be excluded by the school from participating in the study. The students permitted to participate were required to provide assent on the day of data collection.

According to the Ethical guidelines, the research could officially commence after 2 weeks of parental notice. This allowed for sufficient time in case parents chose to opt their child out of the study. Furthermore, each student could withdraw themselves from the study at any point if they wished. Teachers read out the information sheet for students, in case of any misunderstanding. Therefore, all students were made fully aware of their rights during the study.

During the data collection phase, all information gathered during the questionnaire was anonymous, and the demographic information collected ensured it was not identifiable. Moreover, when verbal input was recorded during the focus group, all the data was anonymised, and no names were used during the session. The data was transcribed, and the audio file was deleted soon after the activity.

2.6 Statistical analysis

The data was analysed using SPSS, both descriptively and statistically using correlation analysis and regression models. Correlation analyses were performed to tackle research aim one, investigating

whether students' preferences for intrinsic and extrinsic motivation was correlated, such that when one increases does the other increase and vice versa. Further, two multiple regression models were used to investigate the two motivation subscales intrinsic and extrinsic (DV's), along with the IV's (age, sex, type of educational need and time at school).

3. Results

To assess the research questions in this paper, the results of the questionnaire will be addressed in the quantitative section, while the focus group will be discussed in the qualitative section.

3.1 Quantitative Results

The following section presents both descriptive and inferential statistics. The sections are divided into segments based on research aims 1 and 2.

Research Aim 1: To determine whether students were motivated based on intrinsic or extrinsic factors

In order to explore the first research aim, the total scores were taken from the 14-item motivation questionnaire. These results were split into the two subscales: intrinsic (7 items) and extrinsic (7 items).

Descriptives

The relationship between intrinsic and extrinsic motivation can be summarised as in Table 2: the intrinsic motivation score ($M = 17.62$, $SD = 3.50$), while the extrinsic motivation ($M = 20.31$, $SD = 5.33$). This suggests that on average, the students reported higher extrinsic motivation compared to intrinsic motivation.

Table 2

Table 2: Descriptive Data for Motivation Preference

Variable	$n = 131$	
	M	SD
Intrinsic	17.62	3.50
Extrinsic	20.31	5.33

To further explore the relationship between the two motivation types, a correlation analysis would be needed to determine whether an intrinsic motivation is associated with extrinsic motivation.

Correlation

A Pearson's correlational analysis was conducted. There was a statistically significant positive correlation between intrinsic and extrinsic motivation, $r(131) = .45, p < .001$. This indicates that as individuals' intrinsic motivation increases, their extrinsic motivation tends to increase as well, or vice versa. Overall, students who are more motivated tend to employ both intrinsic motivation and extrinsic motivational drives.

Overall, the results suggest that intrinsic and extrinsic motivation are positively correlated, but that students tended to have a slightly greater preference for extrinsic rewards compared to intrinsic rewards.

Research Aim 2: To identify any differences in preferences linked to individual student factors such as age, sex, type of educational need and time at the school

To tackle research aim 2, which aimed to identify where there are differences in preferences based on demographic information. Although the correlation showed a positive relationship between intrinsic and extrinsic motivation preference, it is interesting to see whether the same or different factors drive the preferences. As discovered by the correlation analysis, both intrinsic and extrinsic motivation have significant influences on motivation, therefore, two separate tests will be conducted. These will be divided into two subsections below: a multiple regression focusing on intrinsic motivation, and a multiple regression focusing on extrinsic motivation.

Assumption Check for Multiple Regression Model

There are a few tests which need to be conducted prior to undergoing the regression model. There are six assumptions that are 1) the dependent variable is measured on a continuous scale, whilst the independent variables can be either continuous or categorical, 2) independence of residuals, 3) there is a linear relationship between the two variables, 4) the residuals have constant variance (homoscedasticity), 5) the data must not show multicollinearity between IVs, 6) the residuals are normally distributed. Meeting these assumptions are required for the validity and reliability of using multiple regression analysis.

Assumption #1 Types of Variables

In the current study, there are six variables, including intrinsic and extrinsic motivation scores (DVs), along with demographic information: age, sex, type of educational need and time at school (IVs). The dependent variables intrinsic and extrinsic scores can be identified as an interval (continuous) variable because they represent scores on a scale similar to the 28-item Academic Motivation Scale (Hopkins et al., 2021). The study includes four independent variables: 1) age would be considered as a continuous variable where in the study participants were allowed within the ranges 5-15 years old (Zhao et al., 2022), 2) sex is categorised as a nominal (categorical) variable as it represents two distinct groups: boy and girl, with no specified order (Field, 2018), 3) students' type of educational need was presented as two options: Autism or SEMH, therefore categorised as a nominal (categorical) variable (Delight Omoji Idika et al., 2023), lastly 4) time at school was presented in four options ranging between September 2023 and April 2024, this variable was considered as ordinal (categorical), since it has a natural ranking of time, even though there is not equal time between each option (Miot, 2020). This assumption was therefore met.

Assumption #2 Independence of Residuals

The Durbin-Watson test was conducted to examine the independence of variables. The null hypothesis (H0) stated that the residuals are not autocorrelated. The Dublin-Watson statistic for intrinsic and extrinsic motivation is 2.28 and 1.86 respectively, which suggests that the assumption of independence of residuals has been met, as the values fall between 0 and 4.

Assumption #3 Linear Relationship

To assess the linearity among the variables, a Pearson Correlation was conducted. The results indicate several significant linear relationships (Refer to Table 3). Overall, the correlation analysis provides evidence of significant linear relationships among variables from moderate to weak, both positive and negative associations can be observed. This meets the assumption that the variables tested should have linear relationships.

Table 2

Correlation Table between Independent and Dependent Variables

<i>n</i> = 131						
Variable	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>6</i>
1. Intrinsic	-					
2. Extrinsic	.45**	-				

3. Age	-.08	.02	-			
4. Sex	.03	.04	.21*	-		
5. Educational Need	.18	.06	-.09	-.12	-	
6. Time at School	.00	.02	-.34**	.00	-.15	-

* $p < .05$. ** $p < .01$.

Assumption #4 Homoscedasticity

A scatterplot was devised for both intrinsic and extrinsic motivation based on the independent variables and a visual inspection showed a random pattern of residuals (see Appendix D). This supports the conclusion that the homoscedasticity assumption was satisfied.

Assumption #5 Multicollinearity

To test for multicollinearity, the dependent variables intrinsic and extrinsic motivation were carried out separately for all the independent variables. For intrinsic motivation, the data revealed that collinearity was not a concern (Age, Tolerance = .82, VIF = 1.27; Sex, Tolerance = .93, VIF = 1.08; Type of Educational Need, Tolerance = .95, VIF = 1.05; Time at School, Tolerance = .85, VIF = 1.78). Similarly, for extrinsic motivation, (Age, Tolerance = .82, VIF = 1.22; Sex, Tolerance = .93, VIF = 1.10; Type of Educational Need, Tolerance = .95, VIF = 1.10; Time at School, Tolerance = .85, VIF = 1.18). All values were below the common threshold of 10, suggesting multicollinearity is not present, and the assumption of homoscedasticity is likely met (Tabachnick & Fidell, 2013).

Assumption #6 Normal Distribution

According to Table 4, the results of the Shapiro-Wilk concluded that both intrinsic and extrinsic motivation scores are not normally distributed. However, based on the Central Limit Theorem, there are three components to assume normality of the data: 1) the sample method is random, 2) the samples are independent and 3) the sample size is larger than 30 (Kwak & Kim, 2017). The current data satisfies all the above requirements and therefore, the assumptions of normality has been met. Therefore, allowing for consequent statistical analyses.

Table 4

Test for Normality between Motivation Preferences

Motivation Preference	Shapiro-Wilk Test		
	Statistic	df	Sig.
Intrinsic	.82	131	< .001
Extrinsic	.97	131	.010

Upon satisfying all the assumption checks, further statistical analyses were carried out.

Multiple Regression Model

Two multiple regressions were conducted to see whether any of the independent variables had influence over whether their preference was for intrinsic or extrinsic motivation respectively. Firstly, the age range considered for this study was 5-15 years. The questionnaire included a question about sex, where students were provided with two options: male and female. Further, the questionnaire asked for students' educational need which was provided as two options: Autism or SEMH. Lastly, the duration at which the learner was at school was also examined accounting for four options: before September 23, since September 2023, since January 2024 and since April 2024.

Intrinsic Motivation

The multiple regression aimed to predict whether a preference for intrinsic motivation could be predicted by age, sex, students' educational need and the duration at school. All variables were entered into the same model level. These variables statistically significantly predicted intrinsic motivation, $F(4, 119) = .44, p < .001, R^2 = .02$. This suggests that 2% of the variance in the intrinsic motivation scores can be explained by the independent variables included in the model. Among the individual predictors, type of educational need ($B = .68, p < .001$), and time at school ($B = .19, p < .05$) were significant predictors of intrinsic motivation, whereas age ($B = -.09, p < .58$), and sex ($B = .09, p = .91$) did not predict intrinsic motivation. In summary, students' educational need and students' duration at school were the only significant predictors of intrinsic motivation preference, while age and sex did not play a significant role. However, the overall variables can account for only a small portion of the variation in intrinsic motivation.

Extrinsic Motivation

The multiple regression analysis examined whether extrinsic motivation was predicted by the same combination of factors as listed above. The analysis was statistically significant, $F(4, 119) = .23, p < .001, R^2 = .09$. This suggests that 9% of the variance in the extrinsic motivation scores can be explained by the independent variables included in the model. As for the individual factors, age ($B = -.12, p < .05$), sex ($B = .39, p < .05$) and time at school ($B = .45, p < .001$) significantly predicted extrinsic motivation. However, the type of educational need ($B = .52, p = .64$) did not have any influence on extrinsic motivation. Overall, the result suggests that age, sex and time at school played a significant role in predicting extrinsic motivation preference, whilst the type of educational need was not able to predict extrinsic motivation.

3.2 Qualitative Results

Focus groups were conducted in a school, in which two groups of students took part. The conversations were audio recorded and transcribed. The aim of the focus group was to provide valuable and deeper insights into students' underlying motivation preferences. Thematic analysis was carried out to tap into research questions in more depth, exploring the nuances of student motivation. The transcripts generated many codes, these codes were combined into two main themes and five subthemes (Braun & Clarke, 2006) (see Table 5).

Table 5 displays the themes and sub themes used in the thematic analysis

Themes	Sub Themes
Rewards	Edibles, Tangibles and Social Rewards
Sense of Accomplishment	Qualification, Parental Acknowledgement

Research Aim 1: To determine whether students were motivated based on intrinsic or extrinsic factors

To investigate the first research aim concerning students' motivation from a qualitative perspective, the focus group enabled a deeper understanding of students' motivation.

Rewards

During the conversations, all six students highly favored extrinsic rewards such as edible treats, tangible toys and social rewards. These were clear subthemes of Reward. When asked the question inquiring about the kind of rewards they receive in school, the students described a two main types of

reward: 1) a point system for good work, whereby students could redeem rewards in a pastoral shop based on the number of points they accumulate and 2) peer and teacher nominations.

Edibles

Firstly, regarding edible treats, students were able to redeem their rewarded points for small treats such as drinks, sweets, and snacks from a pastoral shop located on the school premises. Students regarded these rewards as highly favorable. When asked which item from the pastoral shop was most favored, “sweets” [student 1] were among the most bought. It was clear that “normally we like to get snacks most” [student 2]. This could suggest that the use of edible treats are an effective reward across multiple students, as they opted to use their points to redeem snacks and sweets. However, one thing to be considered was that the sweet treats available from the store could be redeemed with the lowest number of points. When inquiring about the point system we were told that “If you don’t get enough points... you can get a medium or small prize, you can get a snack” [Student 2]; this instant gratification could be a reason why edible rewards were mostly bought as students preferred instant rewards in comparison to saving and accumulating points for bigger rewards. Although student 1 has “been saving for the whole week... for a long time to get a bigger prize. He’s been saving for most of his points” [student 2]. Furthermore, another aspect of this choice could be the perceived value of the edible treat. The cost-benefit ratio could have influenced their decision to opt for edible rewards since it weighs cheaper than bigger, more expensive items. Some students may be uninterested in the larger rewards available, whilst others who have an interest in the larger items, might be more prone to save up. However, if the students are content with smaller prizes, they may not see the value in saving up for more substantial rewards. Overall, none of the students said how much they *enjoyed* the edible treats in particular which suggests that the students’ preference for redeeming edible treats suggests that motivation is driven by immediate gratification and convenience rather than accumulating points for delayed gratification.

Tangibles

Other rewards which could be redeemed from the pastoral shop included tangible objects such as: rubics cubes, paint brushes, pencils and slime and the items available were “different every time” [student 2]. Such prizes were categorised into three sizes: small, medium and big varying in points cost. Students found that if there was a medium or big item of interest to them, they put in more effort to save up more points for it. Students would have to save up for weeks for a medium or big prize. Some students are more prone to forward thinking and “saved up for quite a while and bought a keyboard for [his] computer at home” [Student 1]. This student preferred to save his points to accumulate enough to afford the prize he wanted, rather than spending weekly at the shop. The keyboard was a driving force for the student to save

up more points and continue doing well in school to receive a meaningful reward. For student 1, there was a goal-oriented motivation as he delayed immediate gratification in pursuit of a more meaningful reward. The driving force was stronger to receive a prize which held more importance than those from small rewards. Similarly, one student had a goal-driven motivation to obtain a certain prize “for 800 points you can get like bouncy balls and toys” [Student 6]. This student was working his way towards accumulating sufficient points for a bouncy ball, which the teacher mentioned was one of his favourite toys. The student demonstrated an intrinsic drive and desire to earn a reward that aligned with his own interests and preferences. These examples highlight how students’ personal interests and perceived value of rewards can significantly impact their motivation and drive to perform well.

Social

In the present school, a nomination system is in place whereby teachers can nominate students to receive a certificate and breakfast on a Friday for doing extraordinary work. This system works in two ways, 1) where teachers can nominate students, and 2) where students can nominate peers and members of staff for the award. When asked about the reward system, it “gives a little encouragement to do better in your classes” [Student 3]. When students get nominated, “you can put it in the classroom on the board that we’ve got and take it home or stick it on the form and be proud of it” [Student 2]. Furthermore, the social rewards of being awarded a certificate gave students a sense of accomplishment which they positively associated with doing well in school. Even though the certificate acted as a tangible object, the nominations seemed to have a higher preference “I prefer nominations... if a teacher nominates you can get a certificate and a breakfast if you want one” [Student 2]. Students’ sense of accomplishment was associated with being recognised by parents and teachers. It acts as a strong positive reinforcer, encouraging the students to continue to strive for excellence, it “makes me feel better like they are rewarding me for doing a good job in class” [Student 3]. The use of nominations was a highly preferred reward, when students were asked whether they would prefer a reward or allowed independent time to work harder, one student said “I would want a reward, but then again if I’m being honest, there’s always a next time to get a reward. So, I think I would stick, I would rather have help rather than work hard and not be able to do it” [Student 3] However, this was not the case for all students, “I’ll say that reward” [Student 2]. This indicates that even though students want the reward, some students are aware of the extent of their understanding such that even if they spend extra time, they will not get to the answer. This implies that students value the effort-based nature of the nomination system, as it allows them to showcase their abilities and recognition for hard work. When student 3 was willing to consider “a next time” for getting a reward, this suggested a future orientation and skill for delayed gratification striving towards recognition.

Sense of Accomplishment

The students' intrinsic motivation was closely tied to their desire for a sense of accomplishment. These were manifested in two ways. Firstly, students displayed a strong orientation towards future goals and qualifications. Secondly, students placed high value on receiving parental acknowledgement for validation of their efforts. These elements of student's motivation are explored in the following paragraphs.

Qualification

When asked why students aim to do well in class, students tended to respond with implications for the future: careers opportunities, college admissions and personal interests. A student responded, "It can be very helpful for, like, what qualification you want to do when you're older" [Student 3]. This denotes that students who have clear goals for their future may have increased motivation to work hard in school. Some students have goal-oriented motivation, "so that I can get a job and all that when I'm older and that I can buy tons of cars and probably a garage. I want to be a mechanic when I'm older you see" [Student 4]. Furthermore, they believed that learning in class can lead to positive outcomes, "I can go to class so I can get a good job so I can maybe move somewhere away, take my family with me" [Student 5]. This infers that the student does not view learning as an end in itself, but rather as a means to achieve their long-term goals, which is driven by their intrinsic motivation.

Parental Acknowledgment

Furthermore, students believed that parental acknowledgement was a rewarding consequence for their hard work. Upon receiving a certificate, two options were provided "take it home or stick it on the form" [Student 2]. The student opted to show their parents, as a way of being proud of their efforts. This normally coincided with parental acknowledgement for their good work as verbal praise. Verbal praises seem to elicit positive feelings, "when I get told good job, and like well done when I've done really good work and all that...from my parents... sometimes the school tells my parents for doing such and such." [Student 4]. This gives them a good consequence to their actions and boosts their motivation to continue working well in school. This positive affective experience would further strengthen their intrinsic motivation to continue working hard. This further fuels student's academic motivation and engagement in the learning process.

In summary, students like to be rewarded with immediate gratification, such as snacks and sweets. Yet, when faced with a reward which is both edible (breakfast) and praise (nomination) they tended to be more excited about the praise. This indicates that for these students, the intrinsic motivation of being praised for their efforts was a stronger driver than the tangible reward of food.

Research Aim 2: To identify any differences in preference linked to individual student factors.

The formation of the focus group aims to uncover some individual student factors linked to preference in motivation. Regarding the differences in student factors, the focus groups provide insights into how age and sex may shape the students' sense of accomplishment and related motivational drivers. The inclusion of both younger and older students, as well as a gender-balanced representation enables the exploration of these individual factors.

Age

Some differences were found in the way students of different ages preferred rewards. When conversing with the students from year 8, they preferred rewards which made them feel good within, favoring more intrinsic rewards. When addressing rewards, a student mentioned "I don't really expect an award" [Student 4] for doing good work. This student mentioned he doesn't like having expectations and prefers getting through all the necessary work as he must. Similarly, when asked how they felt if the teacher doesn't reward you for your hard work, one student replied "I don't mind it personally" [Student 5]. This could infer that students are completing tasks based on intrinsic motivation, as opposed to being driven by the opportunity for rewards. When discussing similar questions with students from year 10, it was thought if teachers didn't give out rewards "it'll make us feel like we haven't achieved the best that we've tried to do" [Student 2]. This denotes that there is a dependence on rewards for external validation, which helps students feel good about themselves intrinsically.

When asked how students know they are doing a good job, some students had different opinions. The younger students placed more emphasis on internal consequences, "if you just like get it and if it's starting to feel less like a strain on you and more of like just getting easier and easier that's when you know like you've done something good" [Student 6]. Likewise, teacher's input in their schoolwork such as "I get ticks for my work" [Student 5] can contribute to their comprehension of performing well.

In comparison, students in year 10 preferred rewards which had an external influence such as nominations and treats from the store. It was revealed that some students "preferred nominations... a certificate and breakfast" [Student 2] over gaining points. Whereas others "think(s) they are both equally as good" [Student 1]. This was a pattern seen across all three students, where both rewards were equally viewed as good rewards. Students didn't show any preference in choosing which they found held more value. This suggests that the year 10 students placed greater emphasis on outward recognition and tangible objects rather than solely intrinsic motivators.

Sex

Since there was only one female student who took part in the focus groups, the results were not conclusive to distinguish clear differences between both genders from the qualitative data. However, it was found that the female student preferred extrinsic rewards such as edible treats: she “like(s) to get snacks most”. Furthermore, she mentioned she is most likely to purchase sensory toys from the shop as that’s something she enjoys. This includes mainly Rubics cubes; however, her mother does keep telling her “don’t get sensory toys every time”. This preference of edibles and sensory toys could be personal to this student and may not be applicable to other girls. Yet, some preference for edible reinforcement was seen in males as well. The potential difference in the salience of sex as a motivational factor could be further explored.

In summary, the individual student factors, particularly age, play a significant role in shaping students’ preferences and motivational drivers. Some students (year 8) tended to favor intrinsic rewards, whereas year 10 students displayed a greater need for extrinsic motivators. Moreover, the influence of sex on motivational factors was less clear due to limited female representation.

4. Discussion

The current study took a mixed-method approach to investigate the motivational preferences towards learning, of students in special schools, specifically examining the role of intrinsic and extrinsic motivation. The findings of the study provide insights into the complex dynamic of student motivation within the context of students with special educational needs and disabilities (SEND).

Research Aim 1

The first research aim examined whether students were motivated based on intrinsic or extrinsic factors. There were two main findings identified: 1) there was a higher mean score preference for extrinsic motivation, and 2) there was a positive relationship between intrinsic and extrinsic motivation scores.

Greater Preference for Extrinsic Motivation

Motivation is a crucial factor in the academic success and engagement of students, including those with special educational needs and disabilities (SEND). The results of this study provide insights into the motivational preference towards learning, of students with SEND. Based on the quantitative data, students tended to exhibit a slightly higher preferences for extrinsic motivation when compared to intrinsic motivation. Extrinsic motivation refers to students completing tasks and activities due to an external influence, in this case, such as working on a point system, opportunities for certificates and nominations, while intrinsic motivation involves engagement which stems from innate interest or

enjoyment (Ryan & Deci, 2000). Therefore, the current sample of students presented a higher preference for rewards and incentives rather than internal drivers for learning.

This finding aligns with an extensive body of research on the motivational preferences of students, as studies have shown that students with SEND tend to exhibit a stronger reliance on extrinsic forms of motivation compared to their typically developing peers (Cerasoli et al., 2014). One reason for this difference could be the rising pressures from the educational system: if students with SEND face greater challenges with the academic content, they may experience lower feelings of competence causing intrinsic motivation to be undermined (Niemi & Ryan, 2009). Therefore, when learning in class is perceived as being overly difficult, the students may be more inclined to engage in learning solely for the opportunity for external rewards, praise or possibly to avoid punishment. If students are unable to internally drive themselves towards personal goals and achievements, they may require other means of motivation, hence requiring external rewards.

Additionally, the environment is an important factor to consider when examining the instructional approaches to learning. Students in special schools may be exposed to a greater promotion of extrinsic motivation strategies. Evidence suggests that teachers in special schools may rely more heavily on external rewards: tangibles, and point-based systems to support and manage students' behaviour and engagement (Witzel & Mercer, 2003). This was reported as teachers claimed that the internal drive for motivation tends to build and grow in time. Similarly, the current study's findings show a greater preference for extrinsic motivation, this could be due to the familiarity and fulfilment students have been receiving during their academic journey. Likewise, when students participated in the focus group, the qualitative findings suggest similar preferences. Based on the present school, the focus group found high preferences for social rewards such as nominations and the chance to redeem treats from the pastoral shop as two major incentives. Students had a higher preference for nominations, "I prefer nominations... if a teacher nominates you can get a certificate and a breakfast if you want one" [Student 2]. This strategy worked well to encourage students to receive a positive reward contingent on good behaviour. Students were focused on putting in greater effort in order to gain opportunities for rewards, and if there wasn't a reward at the end of hard work, "it'll make us feel like we haven't achieved the best that we've tried to do" [Student 2]. This emphasises that students have a high dependence on external rewards for encouragement, thus complementing the quantitative results received from the questionnaire data. Another potential reason for students preferring external rewards could be instant gratification from their achievements. If students prefer quick rewards, they may strongly lack intrinsic motivation. In order to persist through the temptation, intrinsic motivation would need to be built up over time. Research suggests that the concept of delayed gratification would increase with age (Atance & Johnson, 2009), hence suggesting younger students may be more tempted to obtain quicker, easier rewards. grows

Within the quantitative results between intrinsic ($M = 17.62$) and extrinsic ($M = 20.31$) preferences, there was only a 2.69 mean score difference, inferring that intrinsic motivation plays a significant role in maintaining learning attitudes. A systematic review conducted by Deci and Ryan (2017), found that intrinsic motivation was positively associated with higher educational outcomes for students with SEND, due to its nature to promote self-determination and engagement. This aligns with the qualitative insights from a student who noted “I would want a reward, but then again if I'm being honest, there's always a next time to get a reward. So, I think I would stick... I would rather have help rather than work hard and not be able to do it” [Student 3]. The student's comment stated they would prefer to get help from the teacher and learn a challenging task, rather than to work hard independently without being able to actually do it. This indicates that the intrinsic satisfaction of mastering a skill can be more important than simply earning a reward. In turn, this relates to the importance of intrinsic motivation for positive academic outcomes, as the desire for self-improvement can be a stronger driver than short-term extrinsic incentives. In mainstream schools, research suggests that students are highly driven by their own passion, interest and desire to develop expertise in the subject, rather than relying on external rewards or pressures (Reeve, 2012). However, Lepper and colleagues (2005) found that extrinsic motivation can be more effective for short-term benefits but over time holds the risk of undermining intrinsic motivation. This was particularly the case in academic subjects where students did not show a natural interest. Yet, it is important to note that even within mainstream schools, the balance between intrinsic and extrinsic motivation varies across different educational contexts, lessons, and students (Anderman & Dawson, 2011). Incorporating the potential differences in reward systems between mainstream and special education settings is an interesting consideration when analysing students' motivational preferences. Research suggests that students in SEND classrooms are often exposed to more frequent usage of external rewards such as snacks, toys, and other reinforcements as part of their behaviour support plans (Simonsen et al., 2008). This increased reliance on extrinsic motivators in SEND contexts could shape the students' expectations around the value of external rewards. Hence, given the current findings, causes a drive towards external rewards over intrinsic motivation. In contrast, in mainstream settings students may have less exposure to such extensive reward systems, potentially allowing them to develop a stronger drive for intrinsic motivation (Neimiec & Ryan, 2009). The type of system employed in each educational setting could influence how students in these contexts view the purpose and value of rewards. This analysis could lead to a more nuanced understanding of the underlying influences on student motivation.

Intrinsic and Extrinsic Correlation Analysis

The study found a statistically significant positive correlation between intrinsic and extrinsic motivation. This represents that as an individual's intrinsic motivation increases, their extrinsic

motivation tends to increase as well, and vice versa. This finding is supported by the self-determination theory, suggesting that both motivation factors can be complementary rather than mutually exclusive (Ryan & Deci, 2000). The theory infers that different types of motivation can work in collaboration to drive behaviour and achievement. As for students with SEND, they may employ a combination of motivational forces to achieve their goals, drawing on both internal and external sources where available. Students may have the desire for self-improvement and personal satisfaction of completing tasks independently, however, they are not limited to receiving external rewards such as praise, points and the drive to meet the expectations of others. For students with SEND, this ability to use a combination of motivational sources may be beneficial, as it allows them to gain more positive feedback and increases engagement in the classroom. This pattern has been observed in literature focusing on mainstream schools, whereby both intrinsic and extrinsic motivations often coexist to drive academic performance and student engagement (Lepper et al., 2005; Reeve, 2012). At the classroom level, contextual factors such as the teacher's instructional style and the learning environment have also been examined to influence the interplay between intrinsic and extrinsic motivation (Kusurkar et al., 2013).

Educators and schools should consider strategies that nurture intrinsic and extrinsic motivation, rather than focusing on one or the other. Evidence suggests that students who display higher motivation tend to rely on intrinsic and extrinsic drivers (although in this study, extrinsic motivators were still the overall preference). The findings in the current study may contradict some previous research suggesting an increase in extrinsic rewards could undermine intrinsic motivation (Deci & Ryan, 1999). However, other studies have found positive relationships between these two types of motivation, similar to the results found in this study (Lepper, 2005). Lepper and colleagues found a positive relationship between intrinsic and extrinsic motivation within a sample of elementary, middle and high school mainstream students. They found a significant correlation, indicating that as students' intrinsic motivation increased, their extrinsic motivation tended to increase as well. This positive relationship was observed across all age groups respectively. The current findings align with Lepper et al., (2005) suggesting the two motivation types can work in a complementary manner to influence student outcomes. In accordance with the current findings, for students with SEND, motivation seems to work not as two exclusive types but rather as complementary factors to drive learning. The current results highlight the importance of considering the nuanced nature of the relationship between intrinsic and extrinsic motivation, especially when examining the contextual factors of students.

Overall, fostering a balance between intrinsic and extrinsic motivation is crucial for supporting students' long-term academic growth and well-being: intrinsic causes a deeper sense of satisfaction in the learning process; extrinsic causes increased levels of short-term engagement and performance. Teachers and staff should aim to create learning environments that nurture the feelings of autonomy, competence

and relatedness which are the key psychological needs linked to intrinsic motivation (Deci & Ryan, 2000). Such strategies could include providing students with more choices in their learning, along with offering meaningful feedback which could encourage learning. Research conducted in mainstream schools suggested that intrinsic motivation and academic performance hold a bidirectional relationship (Corpus et al., 2009). Whereby students who are more determined to achieve goals start applying intrinsic motivation, and those students with higher intrinsic motivation tend to be more determined to achieve goals. However, further research is needed to clarify the specific directionality of this relationship, a longitudinal study could shed light on the interplay between motivation types and how it evolves over time and across different developmental stages.

Both quantitative and qualitative results display the complexity of the interplay between intrinsic and extrinsic motivation to foster motivation for learning in students with SEND. Both aspects can be meaningful forces for students' performance in school, taking into account both short and long-term benefits. Overall, the balance between intrinsic and extrinsic motivation may vary between mainstream and special education settings, whereby special education contexts may rely more heavily on extrinsic rewards. However, educators should aim to strike a balance between nurturing intrinsic motivation, and only strategically using extrinsic rewards for students with special educational needs and disabilities.

Research Aim 2

This aimed to investigate whether there are differences in preferences based on demographic information such as age, sex, type of educational need and time at school. To tackle this question from a multifaceted approach, both quantitative and qualitative data were analysed for each individual student factor.

Age and Motivation Preference

Understanding how students' age influences their preference for intrinsic or extrinsic motivational factors is important for designing effective strategies for schools, which meet the unique learning needs of students at different developmental stages.

The quantitative analysis revealed that age was a significant predictor of extrinsic motivation, but not intrinsic motivation. Further, younger students exhibited higher levels of extrinsic motivation, compared to their older peers. This finding is supported by research studies demonstrating that there are age-related declines in extrinsic motivation among mainstream students (Lepper et al., 2005). Research shows that younger students often respond better to extrinsic rewards, while older students tend to be driven by intrinsic rewards (Corpus & Wormington, 2014). This could reflect that older students' intrinsic motivation for learning comes from an increased awareness of social comparisons, and future

consequences of their academic performance, therefore, creating a greater reliance on intrinsic factors (Corpus et al., 2009). One aspect that could be examined is age-related motivational strategies, where younger students could benefit from more opportunities to develop intrinsic interests and self-guided learning.

To further delve deeper into the qualitative findings, similar results were obtained stating some students tended to be more intrinsically motivated towards the learning process. A year eight student noted his parents have always taught him “don’t really expect an award” [Student 4] for doing good work. Even though the principle came from his parents, the student has begun to live by it as well, indicating a focus on learning rather than external rewards. One explanation could be that during this developmental stage, there is an innate drive for exploration and achievement which acts as the primary driver of academic engagement (Deci & Ryan, 2000). Based on previous literature, studies indicate that there is a general trend of declining intrinsic motivation as students move from elementary to early secondary school years (Harter, 1981). One possible explanation could be environmental factors, such as teacher’s instruction or parental values. This suggests that some older students can maintain their intrinsic motivation, especially when they have internalised the value from their parents or from the environment (Vansteenkiste et al., 2009). One interesting finding in the qualitative transcripts suggests that the year 10 students placed a higher preference on extrinsic rewards. The focus group of year 10 students seemed to place greater importance on rewards such as nominations, certificates, and special treats from the pastoral shop rather than feeling good about what they can achieve. This aligns with the pattern observed in the literature, where secondary students exhibit higher levels of extrinsic motivation as they approach key transition points (Corpus & Wormington, 2014). The important transitional points include GCSEs, and college applications during which students exhibit a greater preference towards extrinsic motivation. This suggests a heightened need for outward validation of their achievements. One possible explanation for this could be the environmental factors of the school setting; as the current focus group took place in a school where the external rewards were attractive treats. The opportunity to earn points and purchase items from the pastoral shop based on the school premises could have been an exciting opportunity, hence why the extrinsic rewards weighed heavier for all students. Perhaps if the external rewards such as edible treats and toys were not an option, the focus would have shifted more to a drive based on intrinsic motivation instead.

Sex and Motivation Preference

The analysis of the relationship between sex and motivation preference revealed some intriguing gender differences. The quantitative data suggested that female students reported significantly higher levels of extrinsic motivation when compared to males. This finding of motivation orientation is

consistent with an extensive body of research (Deci & Ryan, 2002). Girls and boys may seek academic validation and approval in different ways. Girls prioritised external validation and tangible rewards, whereas boys may have been encouraged with more intrinsic views or creating a personal goal. These differences in motivational preferences highlight the importance of personalised and targeted interventions to support SEND students. Teachers should be familiar with the unique profiles of their students in order to cater for them individually, rather than applying a one-size-fits-all approach.

With regards to the qualitative data, since there was only one female and five male students taking part in the focus group, the results for gender differences were not conclusive. The male students who were driven by intrinsic motivation tended to have personal goals such as future career plans and a personal drive towards learning. One male student claimed, “I want to be a mechanic when I'm older you see”, this displays his goal-oriented motivation towards learning which holds more personal value in comparison to sweets and other external rewards. whereas, the female student stated, “I prefer nominations... if a teacher nominates you can get a certificate and a breakfast if you want one”. The positive reinforcer and sense of accomplishment in this case was associated with acknowledgement from her teachers, peers and parents. Yet, the gender differences between sex and motivational preference need to be explored with an equal sample of boys and girls. Based on the existing literature, there are gender differences in motivation, some studies suggest; that girls tend to be more extrinsically motivated, while boys are more intrinsically driven (Meece et al., 2006). However, other studies indicate that the relationship between gender and motivation is more complex, and several additional factors influence this relationship such as students’ academic domain, age, and cultural contexts (Corpus & Wormington, 2014). The motivational preferences of students in specialised education settings for students with SEND may differ from those observed in mainstream schools. This potentially exhibits a less pronounced pattern compared to the general student population (Ames & Archer, 1988).

Type of Educational Need and Motivational Preference

The study can account for learners’ type of needs based on two distinct groups: 1) Autism and 2) Social, Emotional, Mental Health (SEMH) difficulties.

In terms of the learners' type of educational need, the results found that the type of educational need was a significant predictor of their intrinsic motivation preference. Specifically, learners from SEMH schools yielded higher levels of intrinsic motivation, compared to those in Autism schools. This implies that SEMH schools were able to foster greater intrinsic motivation among their student population.

When specialised schools are able to provide students with more specialised instructional approaches, the learning environment can effectively support the growth of intrinsic motivation. Research

has shown that for students in specialised schools, schools can better meet their psychological needs for autonomy, competence and relatedness, which are the essential components in building intrinsic motivation (Guay et al., 2010). Considering special schools provide students with teachers who are trained to provide additional support, this could go further to question whether similar findings would persist in mainstream schools. Exploring the extent to which mainstream schools are able to meet students' psychological needs, and how this could impact their intrinsic motivation provides insights for inclusive education practices (Wahmeyer & Abery, 2013).

One factor which can be considered when understanding preferences of students with SEND, is that different types of needs may require one type of motivation type more than the other. It is plausible that students with ASD and those with SEMH have differing needs in terms of environmental and school factors. Based on research, students with ASD have instructional programs which may focus primarily on providing structure and scaffolding to address challenges (Gillespie-Lynch et al., 2012). This could potentially lead to a greater emphasis on the use of external rewards as a means of supporting their development. Whereas, for students with SEMH, their needs may benefit from a more specialised setting which prioritises autonomy, self-expression and emotional skills (Poulou, 2015). Therefore, these environmental factors could cater to the further growth of intrinsic motivation, as their psychological needs for autonomy and relatedness are better met. By exploring these dynamics, it can provide valuable insights into the learning environment for fostering intrinsic motivation across diverse learners' populations.

Duration at school and Motivation Preference

The duration that learners were at school for was one of the essential questions added to the demographic information in the questionnaire. This was done for the purpose of understanding whether the current practices of the schools taking part in the study were effectively motivating students or better practices should be in place. The questionnaire provided four options dating before September 2023, since September 2023, since January 2024 and since April 2024 intake. The findings from this study indicate a negative relationship such that the longer a student has been enrolled at the school the higher their reported extrinsic motivation preferences. This suggests that students enrolled for longer periods, tended to favour the current extrinsic rewards in the schools. One possible reason for this finding could be that exposure to attractive school-based rewards could demean students' innate curiosity and interest in learning over time. The presence of attractive external rewards can shift students' motivational preferences away from the inherent satisfaction and enjoyment of learning, towards a greater focus on pleasing and gaining approval from teachers and parents instead. These findings could also be supported by the qualitative data from the focus groups. Since the school from which the data was collected was

providing different unique external rewards, it could be possible that students were drawn to these forms of validation. The use of point systems and nominations were strong motivators for learning, however, the extent to which students rely on these influences requires further exploration. Schools should be mindful of how the environment can shape the students' motivation preferences over time.

The impact of the school environment on students' engagement is a crucial factor to consider. A study by Hedges et al. (2018) found that there is an association between social rewards and engagement such that students with ASD have a 'tipping point' that influences participation and self-investment in school activities. This suggests that the expected progression from extrinsic to intrinsic motivation as students mature may not happen as naturally for those with educational needs, as they face unique challenges and rely heavily on extrinsic support. These findings highlight the struggle of developing autonomous and intrinsic motivation without targeted intervention and strategies. Therefore, it is important that specialised education settings strike a careful balance between the use of extrinsic support and intentional strategies to foster intrinsic motivation.

Collectively, these findings highlight the multifaceted nature of motivational preferences among students with SEND. The strategies from literature which support mainstream schools may not be applicable when directly applied to students with special educational needs and disabilities. Though intrinsic motivation is generally associated with more positive educational outcomes, educators should be trained with a diverse range of opportunities for extrinsic and intrinsic rewards. Tailoring support to align with students' individual factors is important to foster the drivers of learning in schools. Based on previous literature, there are a few steps schools can take to foster intrinsic motivation. Firstly, providing students with SEND opportunities to make decisions allows them to take an active role in their learning (Wery & Thomson, 2013). This enhances their sense of autonomy and in turn, supplies them with a personal drive towards learning. Next, when schools provide targeted and constructive feedback for students, it emphasises improvement rather than social comparison. Thus, developing a sense of self-efficacy and competence for students with SEND to continue in a positive direction (Corpus et al., 2009). By carrying out this research, different individual differences can be investigated to draw conclusions about developing a personalised and effective program for students with SEND.

In summary, taking into account all findings from research aim 2, the research indicates that most of the students in the current sample tend to exhibit higher extrinsic motivation. The quantitative data suggests that female students reported higher levels of extrinsic motivation compared to males, which aligns with research claiming both genders seek academic validation differently. Furthermore, the type of educational need was a significant predictor of motivation in students, especially focusing on intrinsic motivation. Students with SEMH exhibited higher intrinsic motivation compared to those with ASD. This infers that specialised schools for SEMH may be fostering intrinsic motivation in a more beneficial way. In contrast,

students with ASD seemed to have a higher preference for external rewards. These differences highlight the importance for tailored, student-centered approaches to provide strategies for learning and development.

Limitations

Despite extensive research on the role of motivation in student learning, there has been limited focus on examining the motivational experiences of individuals with SEND. To help address this gap, the current study aimed to contribute to the understanding of SEND students' motivation for learning within the context of special school environments across the United Kingdom. While the findings provide valuable insights into the motivational factors influencing SEND students' learning in special school settings, the generalisability of the results may be limited to a specific population of SEND students attending only two types of special schools: Autism schools and SEMH schools. Therefore, future research should expand the exploration of SEND students' motivation by incorporating a wider range of educational needs.

Furthermore, there is no current scale of measuring motivation which is validated for special needs children. The questionnaire framework used in the current study was devised for typically developing students, and there could have been some misinterpretation for students with special needs. Hence, the current study adapted the questionnaire to better suit the capability of lower-functioning students by adding visuals, and simplified language. This may have been helpful for comprehension, however, it cannot be concluded whether the meaning of specific questions or the questionnaire as a whole was altered. Although it may be unknown whether the questionnaire was measuring a true motivation score, the Cronbach alpha for total motivation score was high at .87. Nonetheless, it is important to validate self-report measures and interview questions with the target special needs population to ensure they are comprehensible and elicit the intended information. Future work should validate the questionnaire against other methods of measuring motivation, to ensure methodological rigour and accuracy of conclusions.

Within the field of motivation, there are seven proposed types ranging from extrinsic to intrinsic (Gagné & Deci, 2005). This study focused on solely intrinsic and extrinsic, excluding amotivation, external regulation, introjection, identification, and integration. Hence, skipping out on other contextual factors may overlook different motivational factors. A piece of research conducted to examine amotivation among students concluded that a lack of motivation has been linked to several negative educational outcomes, such as poor performance, disengagement and an increased risk of dropout (Legault et al., 2006). Therefore, for students with SEND, addressing amotivation, along with other types of motivation would be particularly important to support their academic and social-emotional development. Future studies could delve deeper into the interplay between these seven types of

motivation, how they interact with specific educational settings and their impact on students' performance.

The current study had data collected from student self-reported questionnaires, along with short interviews with students. These findings are generated by the students in special schools hence the question assessing whether the data responses gathered is a reliable representation of their feelings. One potential limitation of relying solely on self-reported data would be that special needs children may have difficulty accurately recalling or articulating their experiences (Dykens, 2006). Furthermore, participants may be more inclined to respond in a way that they perceive as more socially acceptable, rather than reflecting their true feelings (Krumpal, 2013). Additionally, students may have limited insight into their own cognitive and emotional processes, which could lead the results to be inaccurate. Students with SEND, may be susceptible to response biases when providing self-reports about their motivational orientation. They could provide socially desirable responses instead of reflecting on their internal states (Dritschel et al., 2010). Furthermore, some students with SEND struggle with language and communication skills. They may have a difficulty which hinders their ability to express and reason their feelings accurately (Jacobsen, 2005). Such issues could become problematic when investigating personal topics such as motivation, especially among students with SEND. Therefore, one possible method to enhance the source could be triangulation of data: which could be done through 1) observation of student behavior, which offers insight into their references for rewards, 2) teacher and parental reports of the frequency and distribution of rewards, and 3) academic performance assessments which could determine the relationship between their preferences and learning outcomes. By triangulating these multiple sources of data, researchers can gain a more nuanced understanding of the factors influencing student motivation.

Conclusion

The findings of this paper provide valuable insights into the complex interplay between students' motivational preferences. Through a combination of quantitative and qualitative investigations, the research has uncovered important patterns and nuances in how students with SEND develop and evolve in their academic journeys: 1) there is a significant correlation between intrinsic and extrinsic motivation, 2) students had a higher preference for extrinsic motivation, 3) significant predictors of extrinsic motivation were age, sex and time at school, whilst type of educational need and time at school were predictors of intrinsic motivation.

The implications of these findings suggest the need for a multifaceted approach to fostering student motivation. While external rewards can be useful and beneficial for initial engagement, schools should also focus on cultivating self-directed learning and nurturing students' interest in learning for long-term effects (Reeve, 2009). Such targeted interventions can assess the development of motivation over

students' time at school, to ensure students are not at risk of becoming too overly extrinsically orientated. Hence, lacking any personal goals, interests and curiosity to learn new ways of life. As a school, it is important to maximise the potential of students allowing them to grow into creative inquirers and being open-minded thinkers. Furthermore, it may be beneficial for students if schools are not so readily available with extrinsic rewards. As these may be too attractive of a reinforcement to hinder personal goals.

Many studies have highlighted the link between intrinsic motivation and academic outcomes (Cerasoli et al., 2014). Previous research claims that intrinsic motivation is associated with better educational performance, along with long-term academic success. For example, a meta-analysis was conducted by Cerasoli et al., (2014) revealing that intrinsic motivation was associated with higher grades, test scores and other factors contributing to academic success. Similarly, another longitudinal study by Gottfried and colleagues (2001), tracked a group of students from childhood to adolescence and found that intrinsic motivation in elementary was a stronger predictor of academic achievement throughout the students' educational trajectories. Therefore, if schools and educators begin strengthening a child's intrinsic motivation from a younger age, they can foster more engaged, persistent and successful students in both the short and long-term. This study noted a slightly lesser preference for intrinsic motivators, and worryingly so for older students and for students who had been at the schools the longest. Perhaps schools should reconsider their focus and motivational drivers to foster and maintain intrinsic motivation throughout a student's academic journey.

A future outlook to support findings from this paper includes teacher involvement in students' learning; investigating whether teachers were making use of the same rewards in the classroom as SEND students' preferences. If these rewards are not aligned, there could be a lack of motivation from the students' perspective, along with a waste of teacher's resources for effective teaching. Therefore, it is potent to use efficient reinforcers for students to improve their intrinsic motivation and nurture personal goals. To increase students' intrinsic motivation, research suggests that teachers can employ evidence-based strategies. Such techniques include incorporating relevant real-world connections to help students see the value and meaning of their work (Hulleman & Harackiewicz, 2009). Moreover, providing mastery-oriented feedback can help a growth mindset and produce feelings of competence (Dweck, 2006). Lastly, teachers have shown to play a key role in students' school experience, therefore if positive, caring relationships are fostered, this may support their intrinsic motivation drive (Stipek, 2002).

Overall, investigating the long-term trajectories of students' motivation, along with the contextual factors which shape these trajectories would further enhance our understanding to support their growth and inform effective teaching practices.

References

- Alderman, M. K. (2013). *Motivation for achievement possibilities for teaching and learning*. Taylor and Francis.
- Areepattamannil, S., Freeman, J. G., & Klinger, D. A. (2011). *Influence of motivation, self-beliefs, and instructional practices on science achievement of adolescents in Canada*. *Social Psychology of Education: An International Journal*, 14(2), 233–259.
<https://doi.org/10.1007/s11218-010-9144-9>
- Billore, S., Anisimova, T., & Vrontis, D. (2023). *Self-regulation and goal-directed behavior: A systematic literature review, public policy recommendations, and research agenda*. *Journal of Business Research*, 156, 113435. <https://doi.org/10.1016/j.jbusres.2022.113435>
- Boggiano, A. K., Barrett, M., Weiher, A. W., McClelland, G. H., & Lusk, C. M. (1987). *Use of the maximal-operant principle to motivate children's intrinsic interest*. *Journal of Personality and Social Psychology*, 53(5), 866–879. <https://doi.org/10.1037/0022-3514.53.5.866>
- Braun, V., & Clarke, V. (2006). *Using Thematic Analysis in Psychology*. *Qualitative Research in Psychology*, 3(2), 77–101. <https://doi.org/10.1191/1478088706qp063oa>
- Cerasoli, C. P., Nicklin, J. M., & Ford, M. T. (2014). *Intrinsic motivation and extrinsic incentives jointly predict performance: A 40-year meta-analysis*. *Psychological Bulletin*, 140(4), 980–1008.
<https://doi.org/10.1037/a0035661>
- Conley, D. T. (2014). *Getting ready for college, careers, and the Common Core: What every educator needs to know*. Jossey-Bass, a Wiley Brand.
- Cook, D. A., & Artino, A. R. (2016). *Motivation to learn: An overview of contemporary theories*. *Medical Education*, 50(10), 997–1014. <https://doi.org/10.1111/medu.13074>
- Corpus, J. H., McClintic-Gilbert, M. S., & Hayenga, A. O. (2009). *Within-year changes in children's intrinsic and extrinsic motivational orientations: Contextual predictors and academic outcomes*. *Contemporary Educational Psychology*, 34(2), 154–166.
<https://doi.org/10.1016/j.cedpsych.2009.01.001>

- Davis, P., & Florian, L. (2004). *Teaching Strategies and Approaches for Pupils with Special Educational needs: Knowledge Production and Synthesis*. *Journal of Research in Special Educational Needs*, 4(3), 142–147. <https://doi.org/10.1111/j.1471-3802.2004.00029.x>
- Deci, E. L., Koestner, R., & Ryan, R. M. (1999). *A meta-analytic review of experiments examining the effects of extrinsic rewards on intrinsic motivation*. *Psychological Bulletin*, 125(6), 627–668. <https://doi.org/10.1037//0033-2909.125.6.627>
- Deci, E. L., Koestner, R., & Ryan, R. M. (2001). *Extrinsic rewards and intrinsic motivation in education: Reconsidered once again*. *Review of Educational Research*, 71(1), 1–27. <https://doi.org/10.3102/00346543071001001>
- Delight Omoji Idika, Owan Valentine Joseph, & Victor Ubungha Agama. (2023). *The Application of the Nominal Scale of Measurement in Research Data Analysis*. Zenodo (CERN European Organization for Nuclear Research), Vol. 6, No. 1. <https://doi.org/10.5281/zenodo.8319933>
- Delong, M., & Winter, D. (2002). *Learning to Teach and Teaching to Learn Mathematics*. Mathematical Association of America (MAA).
- Dykens, E. M. (2006). *Toward a positive psychology of mental retardation*. *American Journal of Orthopsychiatry*, 76(2), 185–193. <https://doi.org/10.1037/0002-9432.76.2.185>
- Filgona, J., Sakiyo, J., Gwany, D. M., & Okoronka, A. U. (2020). *Motivation in Learning*. *Asian Journal of Education and Social Studies*, 10(4), 16–37. <https://doi.org/10.9734/AJESS/2020/v10i430273>
- Gagné, M., & Deci, E. L. (2005). *Self-determination Theory and Work Motivation*. *Journal of Organizational Behavior*, 26(4), 331–362. <https://doi.org/10.1002/job.322>
- Gottfried, A. E., Fleming, J. S., & Gottfried, A. W. (2001). *Continuity of academic intrinsic motivation from childhood through late adolescence: A longitudinal study*. *Journal of Educational Psychology*, 93(1), 3–13. <https://doi.org/10.1037/0022-0663.93.1.3>
- Harlen, W. (2012). *The role of assessment in developing motivation for learning*. *Assessment and Learning*, 171–184. <https://doi.org/10.4135/9781446250808.n11>
- Hayamizu, T. (2002). *Between intrinsic and extrinsic motivation: Examination of reasons for academic study based on the theory of Internalization*. *Japanese Psychological Research*, 39(2), 98–108. <https://doi.org/10.1111/1468-5884.00043>
- Hopkins, E. G., Lyndon, M. P., Henning, M. A., & Medvedev, O. N. (2021). *Applying Rasch analysis to evaluate and enhance the Academic Motivation Scale*. *Australian Journal of Psychology*, 1–9. <https://doi.org/10.1080/00049530.2021.1904794>
- Javornik, Š., & Klemenčič Mirazchiyski, E. (2023). *Factors contributing to school effectiveness: A*

- systematic literature review*. European Journal of Investigation in Health, Psychology and Education, 13(10), 2095–2111. <https://doi.org/10.3390/ejihpe13100148>
- Kamil, M. L., Borman, G. D., Dole, J., Kral, C. C., Salinger, T., and Torgesen, J. (2008). *Improving adolescent literacy: Effective classroom and intervention practices: A Practice Guide*. Washington, DC: National Center for Education Evaluation and Regional Assistance, Institute of Education Sciences, U.S. Department of Education. Retrieved from <http://ies.ed.gov/ncee/wwc>.
- Kiefer, S. M., Alley, K. M., & Ellerbrock, C. R. (2015). *Teacher and peer support for young adolescents' motivation, engagement, and school belonging*. RMLE Online, 38(8), 1–18. <https://doi.org/10.1080/19404476.2015.11641184>
- Kwak, S. G., & Kim, J. H. (2017). *Central Limit theorem: the Cornerstone of Modern Statistics*. Korean Journal of Anesthesiology, 70(2), 144–156. <https://doi.org/10.4097/kjae.2017.70.2.144>
- Lepper, M. R., Corpus, J. H., & Iyengar, S. S. (2005). *Intrinsic and extrinsic motivational orientations in the classroom: Age differences and academic correlates*. Journal of Educational Psychology, 97(2), 184–196. <https://doi.org/10.1037/0022-0663.97.2.184>
- Lestari, M. A. M. (2020). *Teachers' reinforcement and students' perception to the teachers in English classroom*. ELT Forum: Journal of English Language Teaching, 9(1), 96–106. <https://doi.org/10.15294/elt.v9i1.36461>
- Martin, C. (2021). *Motivation in special education: doing it differently or doing it better? Support for Learning*, 36(3), 450–469. <https://doi.org/10.1111/1467-9604.12372>
- Miot, H. A. (2020). *Analysis of ordinal data in clinical and experimental studies*. Jornal Vascular Brasileiro, 19, e20200185. <https://doi.org/10.1590/1677-5449.200185>
- Niemiec, C. P., & Ryan, R. M. (2009). *Autonomy, competence, and relatedness in the classroom*. Theory and Research in Education, 7(2), 133–144. <https://doi.org/10.1177/1477878509104318>
- Parsons, S., & Platt, L. (2017). *The early academic progress of children with special educational needs*. British Educational Research Journal, 43(3), 466–485. <https://doi.org/10.1002/berj.3276>
- Perin, D. (2013). *Literacy Skills Among Academically Underprepared Students*. Community College Review, 41(2), 118-136. <https://doi.org/10.1177/0091552113484057>
- Ravet, J. (2011). *Inclusive/exclusive? Contradictory perspectives on autism and inclusion: The case for an integrative position*. International Journal of Inclusive Education, 15(6), 667–682. <https://doi.org/10.1080/13603110903294347>
- REEVE, J. (2009). *Why Teachers Adopt a Controlling Motivating Style Toward Students and How They Can Become More Autonomy Supportive*. Educational Psychologist, 44(3), 159–175. <https://doi.org/10.1080/00461520903028990>
- Ryan, R. M., & Deci, E. L. (2017). *Self-Determination Theory: Basic Psychological Needs in Motivation*,

- Development, and Wellness*. Guilford Press. <https://doi.org/10.1521/978.14625/28806>
- Tasgin, A., & Tunc, Y. (2018). *Effective participation and motivation: An investigation on secondary school students*. *World Journal of Education*, 8(1), 58. <https://doi.org/10.5430/wje.v8n1p58>
- Tavakol, M., & Dennick, R. (2011). *Making Sense of Cronbach's Alpha*. *International Journal of Medical Education*, 2(2), 53–55. <https://doi.org/10.5116/ijme.4dfb.8dfd>
- Van Houtte, M. (2021). *Students' autonomous and controlled motivation in different school contexts: The role of trust*. *European Education*, 53(3–4), 203–217. <https://doi.org/10.1080/10564934.2022.2039069>
- Vansteenkiste, M., Sierens, E., Soenens, B., Luyckx, K., & Lens, W. (2009). *Motivational profiles from a self-determination perspective: The quality of motivation matters*. *Journal of Educational Psychology*, 101(3), 671–688. <https://doi.org/10.1037/a0015083>
- Wang, X., & Liu, H. (2024). *Exploring the moderating roles of emotions, attitudes, environment, and teachers in the impact of motivation on learning behaviours in students' English learning*. *Psychological Reports*. <https://doi.org/10.1177/00332941241231714>
- Wehmeyer, M. L. (2020). *The importance of self-determination to the quality of life of people with intellectual disability: A perspective*. *International Journal of Environmental Research and Public Health*, 17(19), 7121. <https://doi.org/10.3390/ijerph17197121>
- Wery, J., & Thomson, M. M. (2013). *Motivational strategies to enhance effective learning in teaching struggling students*. *Support for Learning*, 28(3), 103–108. <https://doi.org/10.1111/1467-9604.12027>
- Witzel, B. S., & Mercer, C. D. (2003). *Using rewards to teach students with disabilities*. *Remedial and Special Education*, 24(2), 88–96. <https://doi.org/10.1177/07419325030240020401>
- Zhao, X.-R., Tang, Y., Wu, H.-F., Guo, Q.-S., Zhang, Y.-J., Shi, M., Cheng, J., Wang, H.-M., Liu, M., Ma, C.-Y., Wen, G., Wang, X., Fang, H., Jing, H., Song, Y.-W., Jin, J., Liu, Y.-P., Chen, B., Qi, S.-N., & Li, N. (2022). *Influence of age as a continuous variable on the prognosis of patients with pT1-2N1 breast cancer*. *The Breast*, 66, 136–144. <https://doi.org/10.1016/j.breast.2022.08.005>
- Zhu, Y., & Leung, F. K. (2010). *Motivation and achievement: Is there an East Asian model?* *International Journal of Science and Mathematics Education*, 9(5), 1189–1212. <https://doi.org/10.1007/s10763-010-9255-y>

Appendix A
CUREC Approval

**SOCIAL SCIENCES & HUMANITIES
INTERDIVISIONAL RESEARCH ETHICS COMMITTEE**

Research Governance, Ethics & Assurance Team, Research Services, University of Oxford,
Boundary Brook House, Churchill Drive, Headington, Oxford OX3 7GB, UK
Tel: +44(0)1865 289881 Email: ethics@socsci.ox.ac.uk



23 April 2024

Research ethics approval

**Research title: Motivation factors for learning: Children and young people in UK
specialschools Research ethics reference: R92581/RE001**

The above application has been considered by the Social Sciences and Humanities Interdivisional Research Ethics Committee (SSH IDREC) in accordance with the University's procedures for ethical approval of all research involving human participants.

I am pleased to confirm that, on the basis of the information provided to the IDREC, ethics approval has now been granted for this study for the period 23rd April 2024 to 22nd October 2025.

Please note the following:

Personal data: It is the responsibility of the Principal Investigator to ensure that all personal data collected during the project is managed in accordance with the University's [guidance and legal requirements](#).

Fieldwork: The University's [Safety in Fieldwork Policy](#) must be followed.

Amendments: Please notify the committee if you intend to make any amendments to the information in your ethics application as submitted at date of this approval, as all changes must receive ethical approval prior to implementation. The **amendment form** is available on the [SSH IDREC webpage](#).

Adverse events: The SSH IDRECs must be notified within seven days of any unexpected adverse consequences to the research participants, researchers or other people involved in this research project.

Audit: The SSH IDREC audits a sample of projects each year to enable the Committee to monitor the ethical aspects of research in progress.

We welcome feedback on your experience of the ethical review process and suggestions for improvement. Please email any comments to ethics@socsci.ox.ac.uk.

Yours sincerely

DocuSigned by:
Yolande Monger
55238B5B6383436...

Mrs Yolande Monger, *for*

Jennifer Blaikie, Research Ethics Manager (SSH IDREC)

Appendix B

A copy of the SEND Motivation questionnaire

Demographic Information

Age of the learner

Sex of the learner: Male, Female

School Type: Options Autism, Acorn Schools

The learner has been at this school since: Before September 2023, Since September 2023, Since January 2024, Since April 2024

Intrinsic

I like to work in class when... I know I can do the work

I like to work in class when...I am learning new things

I like to work in class when...I am enjoying the work

I like to work in class when...My work makes me happy

I like to work in class when...I think the work is easier (not as hard)

I like to work in class when...The work is helping me learn new things

I like to work in class when... Other people in my class know I am doing well

Extrinsic

I like to work in class when...My teacher says well done for my good work

I like to work in class when...My teacher tells my mum and dad that I am doing good work

I like to work in class when...My teacher tells my friends that I am doing good work

I like to work in class when...My teacher spends time with me or helps me

I like to work in class when...My teacher rewards me with extra time on the iPad or computer

I like to work in class when...My teacher rewards me with extra choice time

I like to work in class when...My teacher rewards me with a sticker (star) on my chart, a certificate or a Dojo point

In terms of responses for each item: 'yes' 'not sure' 'no'

Appendix C

Focus group prompts

Is it good to learn in school?

Is it good to work hard in class?

What helps you want to work in class?

What helps you do your work in class?

What makes it hard to do your work in class?

How does it feel when your teacher rewards you for your work?

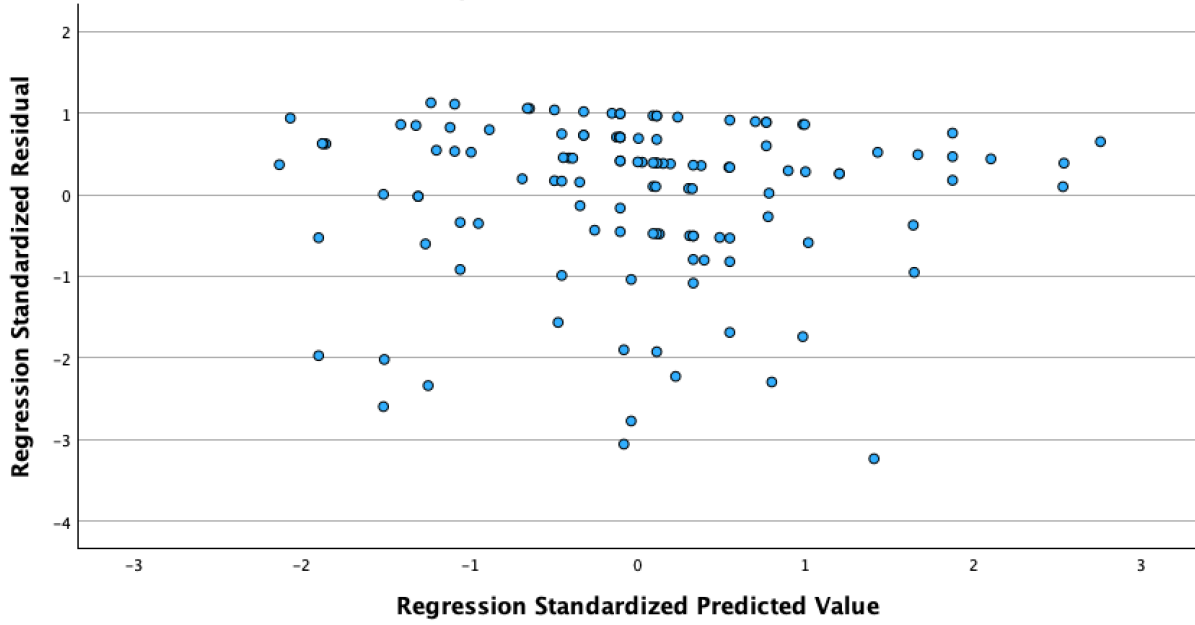
How does it feel when your teacher does not reward you for your work?

Appendix D

Homoscedasticity Test
Intrinsic and Extrinsic Variables

Scatterplot

Dependent Variable: Intrinsic



Scatterplot

Dependent Variable: Extrinsic

