‘To what extent can sensory design and the social orientation of a classroom within an independent, ASD-focused formal education space, positively stimulate the behaviour of autistic children at primary school age more effectively than that of a mainstream school?’

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Figure 01: Children Playing

Abstract

Research into the functions and responses within autism spectrum disorder has increased over recent decades. However, it could be seen that the link to the effect of the built environment and how a space can influence one's behaviour, significantly a child with ASD, is not always seen as a priority. The aim of this paper is to explore how the design & social orientation of classrooms within formal educational spaces can affect children with autism effectively, focusing on designing for the senses. The purpose of this research is to investigate if those in primary education, between the ages of 4-11, are limited by the design of classrooms and how their social orientation within this environment affects their learning and well-being. This study will be significant through increasing the knowledge regarding the design and social conditions of educational spaces that can be proven to positively stimulate and comfort children with autism to benefit them in the future. Through investigating whether children with autism are well-recognised or restricted in mainstream schools, or how an independent, design-focused learning environment could be significantly more beneficial for children with ASD, can form the result for which type of classroom space can provide the best overall well-being and social orientation construct; therefore, which I can take forward into a FPP design project. The study acknowledges what is needed within a classroom to provide autistic children with educational equality, where research justifies improvements that are needed within mainstream classroom environments, suggesting how children with ASD may benefit significantly through attending a specialised school for early years of education.

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Introduction

This study discusses the importance of design within educational spaces to influence the positive experience and behaviour of children, focusing on its impact on children aged 4-11 with autism spectrum disorder (ASD). ASD affects how people learn, communicate and behave with others due to being a neurological and developmental disorder, displaying a wide range of severity and variations of symptoms between each person (NIMH, 2022). The primary aim of the study to understand how interior architects can create spaces to capture the best and most beneficial design for a child with ASD. My objectives are to show the effects of sensory design and interior architecture within these settings, showing how they can be adapted and designed specifically to improve learning environments, focusing on the relationship between children in mainstream and specialised schools.

The topic of this dissertation is important through raising awareness of how significantly design effects a person's mood and behaviour, particularly within educational environments to encourage a good attitude towards learning and reduce anxieties and bad behaviour within schools; concluding which type of educational environment a child with ASD can benefit the most within and achieve equal opportunities to thrive in a learning space that suits them. This study addresses current issues in which mainstream schools are experiencing, acknowledging the strains of integrating autistic children into their classrooms to the best of their abilities. Many classrooms and schools are designed traditionally, where teachers experience disruptive and anxious behaviour from children with ASD, however over recent years the link between design to help the mind and influence positive behaviour has become more relevant, justifying the need for good design, particularly for the design of education spaces. I will be exploring the topical debate today as to if severely autistic children are being disadvantaged through attending mainstream schools. It is extremely common for children with ASD to attend these environments; however, it may need to be recognised further that at a very young age, the children may benefit to a greater extent to learn how to navigate the world and learn communication skills in an environment that is designed specifically to suit their needs, not causing segregation and damaging social skills. It can be assumed that an issue to face within this sector is the cost of designing or adapting schools to achieve friendly design, suiting the needs of all children; this study can help to prove the importance of design for the experiences of school for children through analysing secondary, primary and precedential research to conclude which type of environment can benefit them best in the future. I will be doing this by exploring how the design of a space influences behaviour, evaluating how mainstream schools can effectively integrate students with ASD, and discussing why specialised schools for autistic children can be beneficial, with a focus on the impact of designing for the senses.

Literature Review

Within this study I will be evaluating sources of literature that cover the broad issues within the integrating of children with ASD into educational environments; exploring the debates and experiences from a range of studies to form a justified conclusion regarding if a specialised school can significantly benefit a child with ASD more so than that of a mainstream environment. The evaluation of literature will allow me to gain insight, comparison and reasoning for the importance of interior design, identifying trends and the change in attitudes to design for well-being. The concepts I will be exploring from this research can be drawn together to form a suitable and evaluated proposal to help young children's learning experiences.

A collection of journals and reports have been used to gain an understanding of the theory of how a space can impact the mood and actions of those within it, focusing on the factors surrounding learning environments. Colbert displays within 'Classroom Design and How it Influences Behaviour' the importance of effective functionality of a space to encourage positive and non-disruptive behaviour, as well as the level of attractiveness of the classroom shapes a child's physical and mental learning experience (Colbert, 2016). Ultimately this research is useful to add to my study, not only regarding how classrooms can be formed, but the impact it results in within a child's behaviour on the time and efficiency of the day-to-day running's of the classroom. This is useful to understand the consequences of controlling misbehaviour has for teachers to carry out their job effectively, where the physical environment can be used to teachers' advantage if designed well to encourage a positive environment. Furthermore, within Gilavand's report 'Investigating the Impact of Environmental Factors on Learning and Academic Achievement of Elementary Students: Review', the results of how sensory design can affect the general learning experience and atmosphere of an education space has been explored. This research was useful within providing an explanation as to which environmental factors within education must be considered, understanding the general relationship between the senses and the children within a given environment (Gilavand, A. 2016). This source, used in conjunction with Colbert's research is useful to me to understand and expand upon the basis of the types of senses explored within design, bring this forward to explore their further relationship with the stimulation of autistic children, providing how a suitable and functional environment including the advanced design aspects can be created. Additionally, this proved used to understand the general position and views of how schools may be lacking with designing for the senses currently. Furthermore, within this chapter Jones & Frederickson's report has been used to explore factors surrounding the behaviour experienced within the inclusion of children with autism in 'Multi-informant Predictors of Social Inclusion for Students with Autism Spectrum Disorders Attending Mainstream Schools'. This source contributed to my research by investigating how children with ASD may adapt and interact with mainstream students (Jones & Frederickson, 2010), becoming useful as an insight into understanding more about predictions of negative attributes or behaviour faced by autistic children through attending mainstream schools; within my study this can be used as a conclusive argument for which environment may be most beneficial and give direction for my FPP. Finally, within this chapter factors involved to create an effective learning process are explored within Ghazali's report 'A Review of Sensory Design Physical Learning Environment for Autism Centre in Malaysia' to support which positive design suggestions work effectively to provide a setting for positive behaviour. This paper aims to develop a conceptual physical sensory design learning environment for those with Autism, looking at and beyond the five senses showing needs for spaces (Ghazali et al, 2014). This literature is useful to identify sensory issues within design considerations and learning environments, understanding whether these aspects would be necessary in mainstream environments and work as effectively; this source was used to gain a larger understanding of the relationship between the senses and responsive moods within autistic children, informing which spaces and sensory considerations to take further.

The concept of exploring how children with autism can be effectively integrated within mainstream schools is written about by authors Russo & Koegel, Rouvali & Riga and Tse, in which I used in conjunction with primary research to understand different experiences of ASD integration within mainstream environments. 'A method for integrating an autistic child into a normal public-school classroom' written by Russo and Keogel (1977) summarises how effective environments can be for autistic children regarding the difficulties and effectiveness of staff training in mainstream schools. This source however was useful to me to see results of social interactions between children, and how they can learn from each other and with effective training learn effectively in a mainstream setting. This journal has been used to debate the effects of ASD integrating, debating disruptions it may cause and to the extents the social orientation can work to provide positive, current and long-term experiences. Additionally, Rouvali & Rigas research article 'Listening to the voice of a pupil with autism spectrum condition in the education of a mainstream early years setting' (2020) reinforces this investigation on the effectiveness of learning experiences for those with autism in mainstream environments; however, this source is useful for understanding adaptions a specific child had to undertake in a mainstream school and precautions teachers take to ensure inclusion. This source was used to identify adaptions such as learning plans that would need to take place to create a comfortable setting that is not restrictive, evaluating the stains on the school. 'Designing Buildings for the Future of Schooling' (Tse, H et al 2019) is used to identify how mainstream school designs are adapting to fit the needs of children in recent years, exploring to what extent they can be seen to correspond with future aims of education in general. This book proved useful to gain insights on the initial debates of professionals regarding how schools, government and educational schemes are changing their viewpoints of seeing design as worthwhile and beneficial enough for the cost to improve schools and how it has changed overtime. This source is useful for my study within identifying the position authorities take on whether the design of schools, particularly focusing on creating autism-friendly spaces within mainstream schools, where they may not see this as a priority. Therefore, this source is useful to provide evidence to debate upon if children with ASD will receive a guaranteed positive experience within specialised schools to feel that the quality of their schooling experience is recognised well.

Authors Gaines, Morewood and Ghazali argue the importance of specialised design for the stimulation of autistic children within both ASD schools and mainstream environments. Within 'Designing for Autism Spectrum Disorders' (Gaines et al., 2016), considerations for ASD specialised design, human-interaction environments, cognition and sensory design are explored, understanding how to create realistic and effective environments. This book is extremely informative due to its wide study field of environmental effects, design considerations and the neurological factors experienced by those with ASD, informing anargument displaying the significance of applying autism-friendly design within children's classrooms; additionally, it is useful to evaluate to what extent different types of spaces are needed within designing education spaces. This source allowed me to understand how to respond to the needs of those with ASD more effectively within design, informing my FPP with additional knowledge of designing for the senses, where I was able to conclude

that to ensure that these factors can be used effectively, a specialised environment for autistic children can be better equipped. Furthermore, 'Autism & Inclusion: the saturation model explained' (Morewood, 2022) explores approaches to the inclusion of autistic children to create comfortable and welcoming principles, explaining the importance of effective teacher training and the social suitability of the environment. This is useful to understand how these principles can be applied to mainstream environments, however, may be more effectively put to use within a specialised space where there is a common goal to provide a space for children with Autism. Another source which provides additional information to Morewood regarding a more physical approach is 'A Review of Sensory Design Physical Learning Environment for Autism Centre in Malaysia' (Ghazali et al, 2018). This source here was used to expand on understanding the importance and impact of the physical education space, where I could further understand aspects other than sensory design that would create a more suitable design that ASD specialised schools could take on. This source was useful in providing reasoning for architectural design aspects to help create an effective space in which I can take forward. Furthermore, used in conjunction with my primary research survey, 'Autism Architects – Friendly Design' (ga architects, 2022) was a helpful tool to increase my understanding of putting design aspects into practice and how this company put friendly design and layout considerations into practice. In relation to this, researching 'Montessori and Autism' (Fidler, 2022) was useful to provide a precedential concept as to how specialised schools are ran to help the adjustment and needs of those with learning difficulties, providing reasoning for specialist environments.

Methodology

The methodology I am adopting to create a meaningful and accurate study consists of collecting both primary and secondary research. Secondary research has allowed me to consider different methods of collecting data, where I can expand my knowledge through analysing books, articles, reports, websites and precedential designs. Here, I can gather both qualitative and quantitative data from a range of experts surrounding the autism spectrum disorder and the impact of their environments, forming an argument suggesting which type of educational setting is most beneficial.

Through considering different methods to collect data, primary research allowed me to gather information from different people involved with working with children with ASD within different schools across the UK, gaining insights from mainstream educational environments and specialist ASD classes and afterschool clubs. I was able to gain first-hand information through online surveys using Survey Monkey (see appedices); in which I can use in conjunction with secondary resources to form conclusions as to which type of social orientation can benefit children with ASD most, and the impact of sensory design. All survey results have been completed by adults from the two types of surveys; mainstream or ASD environments, who have volunteered or worked with autistic children in a teaching environment. This allowed me to conduct ethnographic research and qualitative data to collate into statistical analysis and percentage results, discovering patterns and comparisons which can be presented visually. Through conducting primary research, a challenge I faced was the incapability of guaranteeing survey responses from schooling institutes I reached out to, as well as how no child with ASD is completely alike or has the same experiences.

Figure 02: Children Drawing

How does design influence behaviour?

The progression of classroom design

It is well known that entering a space can create a subconscious influence of one's behaviour, whether it be acting respectfully in a library, or running in a playground. This chapter will be exploring how the design of classrooms can create positive responses to learning and general behaviour of children, showing the progression of classroom design and the importance of environmental factors. For a child, a classroom can be a daunting or exciting place. Therefore, it is crucial to understand the direct influence of the physical setting on a child's own experience of the classroom that needs to function effectively, as well as being attractive to the eye (Colbert, 2016, p1). Where a child feels comfortable in their surroundings, the primary aim of education spaces can be met within a well-organised setting, providing effective learning. It is important to create these spaces with "open pathways that clearly lead to activities" (Colbert, 2016, p1), meaning that children can explore and stay occupied with the reduction of problem areas (Colbert, 2016, p1) caused by unorganised spaces. Therefore, it is pivotal to avoid creating spaces which can influence mishaps within a child's behaviour, ultimately reducing the pressure on teachers and aim to create positive and functional environments through effective planning.

Attention to the design of classrooms have become more apparent over recent decades; reflecting the needs of children, becoming less mundane to boost morale. Development of exploiting the senses within new educational design can be seen to have "effective internal efficiency of students" where "elements such as colour, light, sound and equipment" (Gilavand, 2016, p361) can be used to create good user experiences; particularly the use of colour to spark positive correlations between spaces and feelings. Furthermore, exceeding comfort levels can provide children with positive learning experiences and contributes to influencing behaviour within these spaces; as "studies have shown that noise pollution is the main cause of discomfort among teachers and students" (Gilavand, 2016, p367), subsequently causing disruption to the environment. With effective design and soundproofing, discomfort can be tackled, enhancing positive relations within the classroom.

The impact of design in mainstream and ASD specific classrooms

For children with ASD, the spatial planning and atmosphere of classrooms are largely significant to how they perceive the space and act in environments they find distressing, experiencing "challenges within navigating the social world" (Jones & Frederickson, 2010, p3). With 1 in 100 children in the UK being autistic (Hey, 2021), the importance of inclusion and the debate of if children ASD children can benefit within specialised or mainstream schools is heightened. A study of the inclusion of ASD students within a mainstream school highlighted predictors of the effects on behavioural aspects of children involved; for example, "students with ASD were significantly less well accepted by their peers" with "social and emotional difficulties" (Jones & Frederickson, 2010, p15). This shows how autistic children may struggle to feel comfortable in a mainstream environment, although they had no relations to disruptive behaviour; this leads to the analysis that asocial autistic children may be at risk of being perceived negatively (Jones & Frederickson, 2010, p18), creating a counter-inclusive environment, where enjoyment and disruptive behaviour could become an issue.

Figure 03: Sensory Design

The importance of designing for the senses

Suitable design, responding to the needs of children is a priority for enriching positive learning environments, encouraging students to thrive. Recognising which factors stimulate those with autism and creating environments that responds to their specific needs is vital; working with impairments such as social and behavioural skills can encourage attendance within a learning environment that suits them (Ghazali et al., 2018, p146). To create an optimum classroom experience for a child with ASD, sensory issues and design should be made aware of, as this is often forgotten in mainstream environments, particularly due to how spaces for autistic children are unique (Ghazali, et al., 2018, p146). Design considerations involving the senses (figure 03) and factors such as suitable wayfinding, can influence positive behaviour and attributions for autistic children through sensitive stimulation to create an effective physical learning process (figure 04).

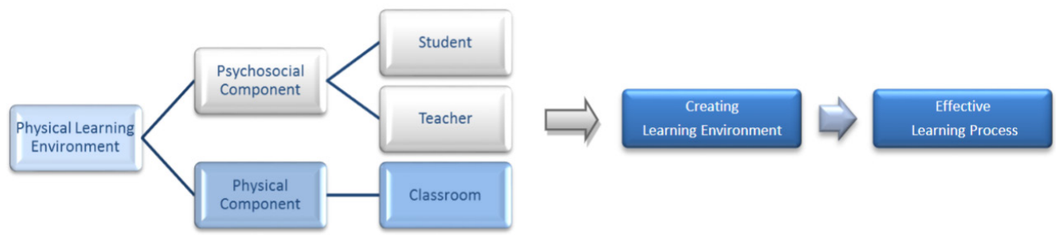

Figure 04: Creating an effective learning process

The integration of children with ASD into mainstream learning environments

How can the integration of children with ASD into mainstream schools' work?

No two children with ASD are completely alike or have the same needs or responses. This can often create challenges within mainstream environments where not every teacher is ASD trained or one-to-ones can be offered; however, it is very common for a variety of children with autism to attend a mainstream school. A study investigated how autistic children can successfully attend mainstream schools and integrate with other students, particularly highlighting the significance and need of specialised training of teachers. This demonstrated better establishment of control within the classroom and the reduction of disruption, where overtime the behaviour of the children improved (Russo & Keogel, 1977, p588). Therefore, through the additional training of teachers focusing on the control of general behaviour, children with ASD can adapt to a mainstream environment successfully, where not all children with autism should be assumed that they need to attend a specialist school. However, it is recognised that training may be time consuming or costly for several teachers, yet it is highly significant in supporting the children, although only "40% of teachers feel that they received adequate training to teach children with autism" (Morewood, 2022), showing the need for more teacher support to ensure good quality of learning for all.

Additionally, to enhance the integration process of autistic children, "previous one-to-one training before entering" (Russo & Keogel, 1977, p589) can be beneficial. From this, there may be less need for constant support, where ASD children can develop their social skills and be influenced by other children in the classroom (Russo & Keogel, 1977, p589). Furthermore, a study in Greece displayed the significant benefits of integrating children with ASD having an Individual Learning Plan, tailored to the child's preferences and strengths, highlighting the trust with their one-to-one teacher. (Rouvali & Riga, 2020, abstract). This could show how autistic children may risk not being able to obtain optimum experiences and reach their potential within mainstream environments, unless they experience special treatment, which may vary between students.

Figure 05: Light wayfinding corridor

How are mainstream schools adapting to integrate ASD children?

Due to high costs of good quality design and space planning, development of school and classrooms interiors has often been seen as "overindulgent" (Tse et al., 2019, p3); however, it is evident how this view is beginning to change due to design being recognised as a vital part of the school experience to help all students. The recognition to produce good quality spaces for children to learn in considers acoustic environments and quality of daylight (Tse et al., 2019, p4), which ultimately may be expensive, yet is incredibly important to increase the well-being of students and cost effective in the long run, displaying how educational design is being re-envisioned and developed to meet new expectations of learning quality. Due to how the establishment of quality design within mainstream classrooms is recognised, yet still growing, the more complex needs of children with autism may not be met to a great enough extent within these environments, due to the design of a wide range of schooling difficulties.

Primary research

Through conducting primary research, I was able to understand more about the experiences of teaching assistants (TAs) within mainstream primary schools, working with autistic children day-to-day *(see appendices)*. Results show the correlation between my research and their personal experiences, where TAs felt they were under more pressure to help provide equal learning opportunities (figure 06) and agreed that some children with ASD would benefit further by attending a specialised school, due to how their mainstream environment may not provide enough stimulation. However, with the development of mainstream classrooms, the exploration of the senses would help the engagement of ASD children, where an autism-friendly classroom would not counteract or dismiss children without autism. The survey demonstrated how each child obtains different experiences and responses to their environments due to mixed results regarding if it would be beneficial for autistic children to integrate into mainstream schools (figure 07). *(see appendices page 23 for full primary research survey results & consent forms)*

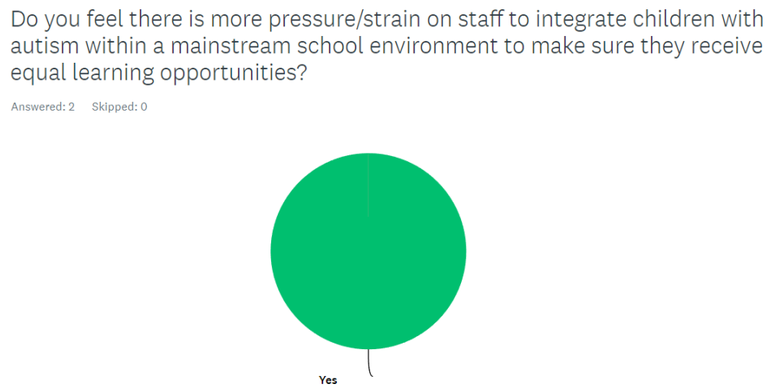

Figure 06: Primary mainstream survey question 3

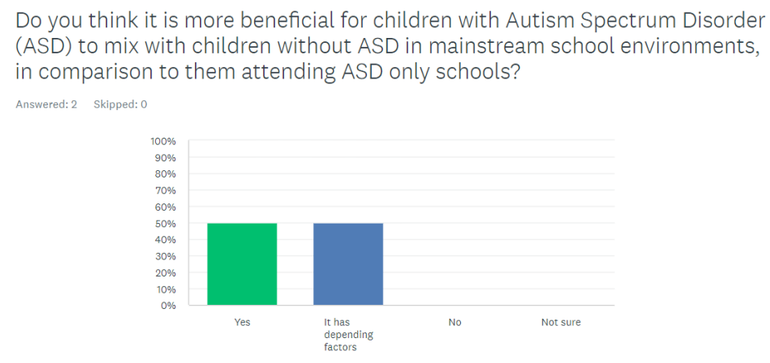

Figure 07: Primary mainstream survey question 4

ASD specialist learning environments

What makes specialist classrooms better for suited autistic children?

Children with autism are often highly sensitive to their surroundings, and where they must navigate a new environment on their own, such as a school, it is vital that they feel comfortable to obtain a positive outlook. Learning to understand ASD responses is needed to design suitable spaces; for example, sensory processing can vary, where children are hypo or hyper-sensitive to their surroundings (figure 08), comprehending responses can improve children's well-being and safety (Gaines et al., 2016, introduction), where within a specialised environment, these needs can be met to allow children with ASD to navigate the world and develop life skills more thoroughly than that of a mainstream classroom.

Table 1.1 Hyper- and Hypo-Sensitive Symptoms of ASD.

Sense	Hypo-sensitive	Hyper-sensitive
Auditory (Sound)	Does not respond when name is called; Enjoys strange noises; Enjoys making loud, excessive noises	Overly sensitive to loud noises; Appears to hear noises before others; Cannot function well with background noise
Tactile (Touch)	Touches people and objects unnecessarily; Has abnormally high pain threshold (does not appear to be hurt after a hard fall); Does not appear to feel extreme temperatures	Avoids wearing certain fabrics; Becomes distressed during grooming; Does not like being wet or going barefoot; Reacts negatively to being touched
Visual (Sight)	Disregards people or objects in environment; Can see only outlines of certain objects; Likes bright colors and bright sunlight	Bothered by bright lights (covers eyes or squints); Easily distracted by movement; Stares at certain people or objects
Vestibular (Motion)	Moves around unnecessarily; Enjoys spinning in circles; Becomes excited about any task involving movement	Seems unbalanced; Becomes distressed when upside-down or when feet leave the ground
Smell/Taste (Olfactory)	Some reports of Pica or eating non-food substances; "Feels" objects with mouth; Seeks out strong smells; Oblivious to some scents	Picky eater; Will only eat foods with certain textures, with particular smells, or at a certain temperature
Proprioception (Sense of body's location)	Unaware of body position in space and body sensations like hunger; Often lean against people or objects	Odd bodily posture; Uncomfortable in most positions; Difficulty manipulating small objects

Figure 08: Hyper & hypo sensitive symptoms

Although autistic children share as many differences from each other as they do similarities (Morewood, 2022), it is important that these challenges are recognised in learning environments to improve educational experiences and behaviour of children. The "need for autism-friendly principles" (Morewood, 2022) that can also be integrated into mainstream schools, is becoming more recognised; Morewood explains the use of a whole-school saturation model (figure 09) for effective inclusion of autistic children into learning environments where they need to be emotionally and physically supported, understanding the perspective of autistic children. This highlights the importance of trained teachers; giving direct support, embedding practices and peer awareness (Morewood, 2022), which could be more difficult within mainstream environments where a broad range of students are additionally considered, meaning that the attention to supporting the complex needs of those with autism may be lost.

As well as designing for the senses and creating tactical learning spaces, additional considerations can be made when creating well-suited environments. Ghazali demonstrates ideas to take forward to produce a well-rounded, inspiring building for young autistic children involve making the most of the space available; for example, creating a stress and fuss-free entrance space, where children can often become overwhelmed, welcoming them through the threshold. Reducing disorientation is also crucial to minimise anxiety within the space, with an emphasis on flow between nodes. Quiet rooms and soft surfaces are useful if children are overstimulated; whereas outdoor spaces, such as sensory gardens prove to restore attention and encourage positive responses (Ghazali, et al., 2018, p149-150) (figure 10). These considerations should work in conjunction, creating an inviting space to support the more sensitive needs of autistic children, than those attending mainstream schools, making them incredibly important to create functional, effective spaces.

Figure 09: Austism & inclusion saturation model

Figure 10: Design considerations

Theory and in practice: Precedential design that works well

As an architectural firm exciting and suitable schools for autistic children, GA architects bring educational spaces to life by using "friendly design" (ga architects, 2022), creating purpose made solutions to negativity experienced by children with autism. Design factors involved structural aspects, along with designing for the senses; good layout of circulation spaces and curved walls, good quality natural light and ventilation, underfloor heating and personal spaces reducing anxiety, are suggestions from GA Architecture that can subconsciously create positive attitudes to spaces. Furthermore, the use of low arousal colours and no complicated patterns can keep children content, with noise control to reduce anxiety, avoiding harsh lighting by using indirect sources and dimmed lighting (ga architects, 2022) are how sensory design can be 'friendly' for any young child, yet particularly important for children with ASD to experience a controlled, enjoyable environment. For example, Whitton Gateway in Twickenham (figure 11) was completed in 2008 with a £1.1M value is a great example of a specialist teaching unit for 15 children with ASD (ga architects, 2022), demonstrating a carefully considered layout and circulation plan to create positive interpretations with a central social space as the main hub, as well as sensory rooms to provide escapism. Specialised educational approaches, such as Montessori schools, can help children with challenging behaviour, experiencing difficulties with communication, socialisation and imagination; understood as the "Triad of Impairment" (Fidler, 2022). Controlled and understanding environments ensure stability

and engagement within the children's educational experience, which can lack within mainstream environments: here, "constant stimulation and an education through movement concept" (Fidler, 2022) can be applied to encourage involvement from the children where challenging behaviour can be reduced. It is important to explore the use of sensory design and involve ASD trained teachers, however, it is vital to not overwhelm or overstimulate the children; this can be done by keeping a controlled and calming learning space.

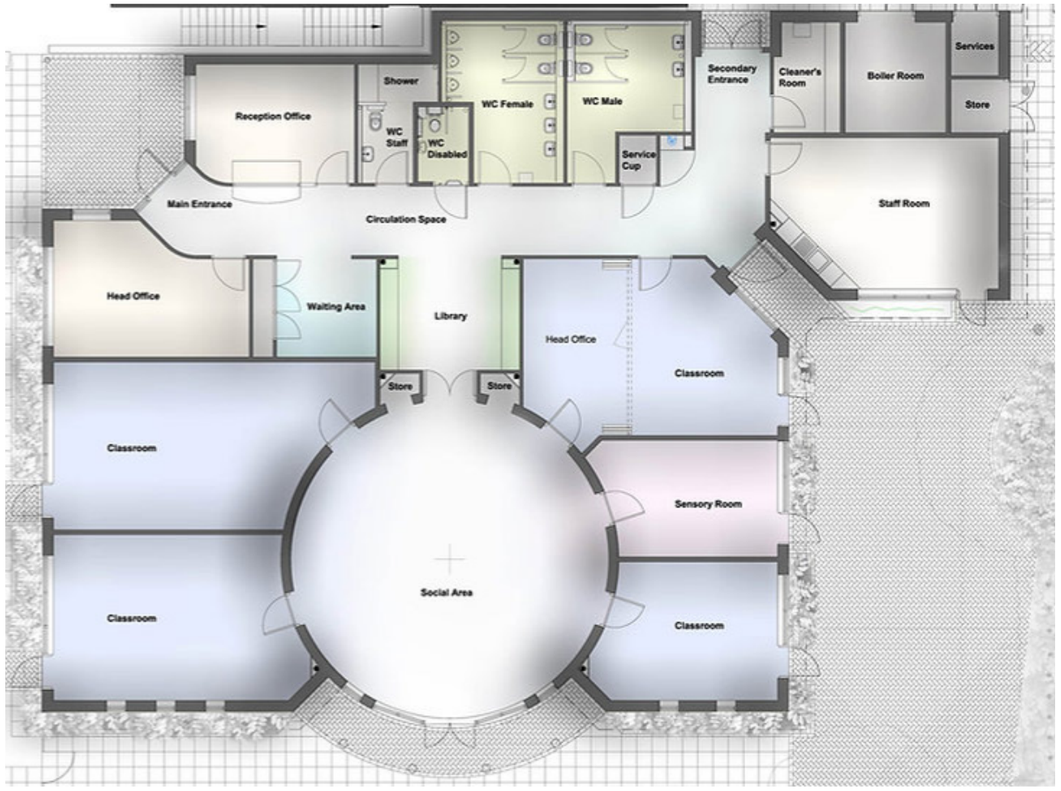

Figure 11: Whitton Gateway

Primary Research

Through conducting a survey to teachers and volunteers *(see appendices)* that have worked with autistic children in specialised settings, I collected first-hand information regarding the social orientation of the classroom and its effects. Results concluded that every child responds differently to environments, with the majority stating that there are a number of depending factors as to if an autistic child would benefit significantly or would recommend a child to attend a specialised school, with mixed responses considering if there are social restrictions in specialised environments (figure 12). However, it is evident how the design of a specialised space can have a significant impact; where 66.7% of the adults asked

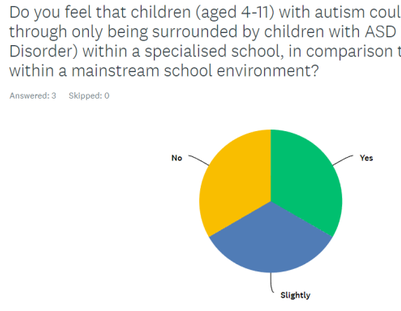

Figure 12: Primary ASD survey question 2

noticed students being strongly stimulated by sensory design in their classrooms (figure 13), all saying this created a positive impact on the children's experience. 100% of TA's believed that the interior design of their classrooms is just as important as its social orientation, where consistency can be provided in comparison to mixed mainstream environments. Furthermore, light and sound were chosen as the most popular sensory aspect (figure 14) to provide effective stimulation within specialised classrooms, which can be taken and explore further to create supportive environments. *(see appendices page 24 for full primary research survey results & consent forms)*

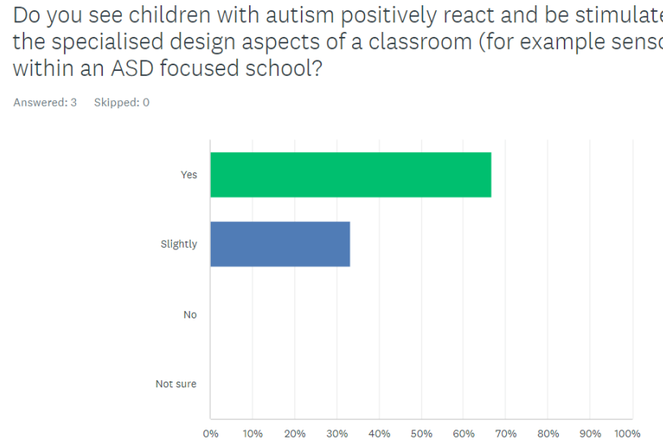

Figure 13: Primary ASD survey question 4

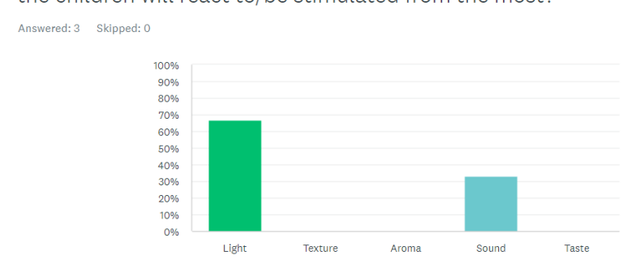

Figure 14: Primary ASD survey question 7

Disscussion

Collecting primary research from teaching assistants and volunteers from both mainstream and specialised ASD primary schools has allowed me to compare a range of viewpoints to understand contributing factors of social orientation and sensory design in both environments, highlighting the debate of which learning space is most beneficial for children with ASD. It is evident how for less extreme cases of ASD, children may be able to function and socialise well within mainstream spaces; with survey results often stating how there are 'depending factors', due to the differences of autistic children. However, conclusions obtained from mainstream survey's suggested how their environments would benefit all young children to obtain ASD-friendly classroom designs and the use of the senses particularly that more could be done for autistic children in these settings. On the other hand, results from specialised environments also suggested how not all autistic children should attend or would strongly benefit from a specialised environment, due to the individuality of the child.

It is visible from both surveys' how the interior design of classrooms and involvement of sensory design should be taken on within specialised or mainstream classrooms, providing a stimulating environment for all to enjoy learning experiences, particularly for asocial autistic children who may struggle to feel comfortable in mainstream environments at a young age. From the collated results, it could be seen that children who attend a specialised environment can guarantee a tailored learning experience to encourage confidence and creativity, in which they may miss out on within a mainstream classroom.

Figure 15: Kollaskolan school entrance design

Figure 16: Our Lady of the Lake Children's Hospital wall design

Conclusion

This study contributes to revealing the significance of sensory design within classroom environments. I have explored how it can stimulate positive behaviour of children with autism to a great extent, particularly within focused ASD education spaces where this can be guaranteed to be put into practice. It can be concluded that the social orientation of a school regarding the inclusion of children with ASD is highly debated, where for many cases, it simply can depend on the preferences of the child; however, it is evident through my research how a specialised environment for autistic children, particularly in their early years of primary education, can significantly improve their personal development without the risk of social segregation. It is important to recognise through attending an ASD school, with specifically designed classrooms created to fulfil the specific needs and encourage exploration and comfort for children with autism, positive outcomes and stimulation to contribute to the future development of the children can be achieved to a greater extent, where they may choose to attend a mainstream school for later education using what they have learnt and achieved through attending an ASD education space prior.

Within researching the topic of providing excellent learning experiences for children, it allowed me to gain insight to take forward regarding how, and which techniques there are to explore the use of the senses within design. This can enable the ability to create an exciting yet comfortable environment to produce enjoyable learning experiences for those that may struggle with the challenges of autism within education. This study is significant through providing additional research and evidence within which of the senses can have a meaningful impact on a child; showing how the use of light and sound can be exploited to help with proceeding sensitive environments, along with the combined use of seamless architectural planning to provide calming and inspiring experiences for the children. Implications I have faced throughout this study have included the difficulty to secure a high number of survey responses from outside organisations. This would have allowed me to gather data to a more specific degree in relation to understanding the complexity of the needs and experiences autistic children face within their day-to-day lives in both mainstream and specialist schools, understanding further how no child with autism is exactly alike.

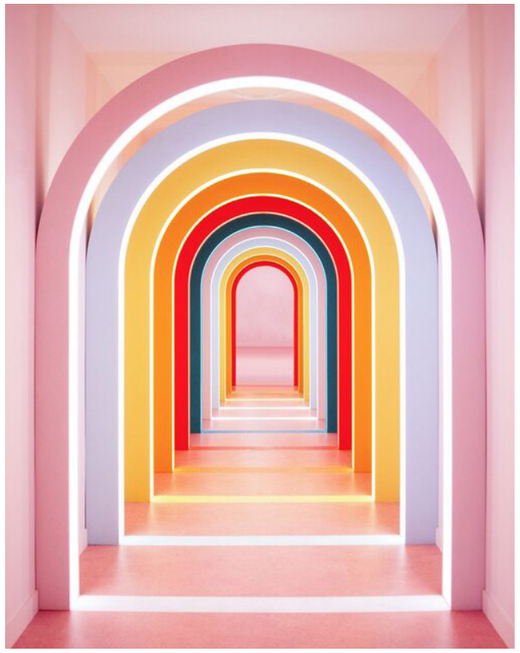

Figure 17: Friendly corridor design

I believe this study has been successful through allowing me to evaluate the positives and negatives of young children with autism attending either mainstream or specialist learning spaces, gaining first-hand information from adults working in these environments. Collating results and research informed how I can put the findings and ideas into practise within my final portfolio project; designing a well-suited education space for children aged 4-7 with ASD. Through focusing on their cognitive and social development in a specialist environment can provide autistic children with guaranteed, equal and tailored learning opportunities and stimulation. In conclusion, I therefore believe that an ASD specialised environment can promote positive behaviour and experiences effectively under less strain, more so than that of children within mainstream schools to a great extent.

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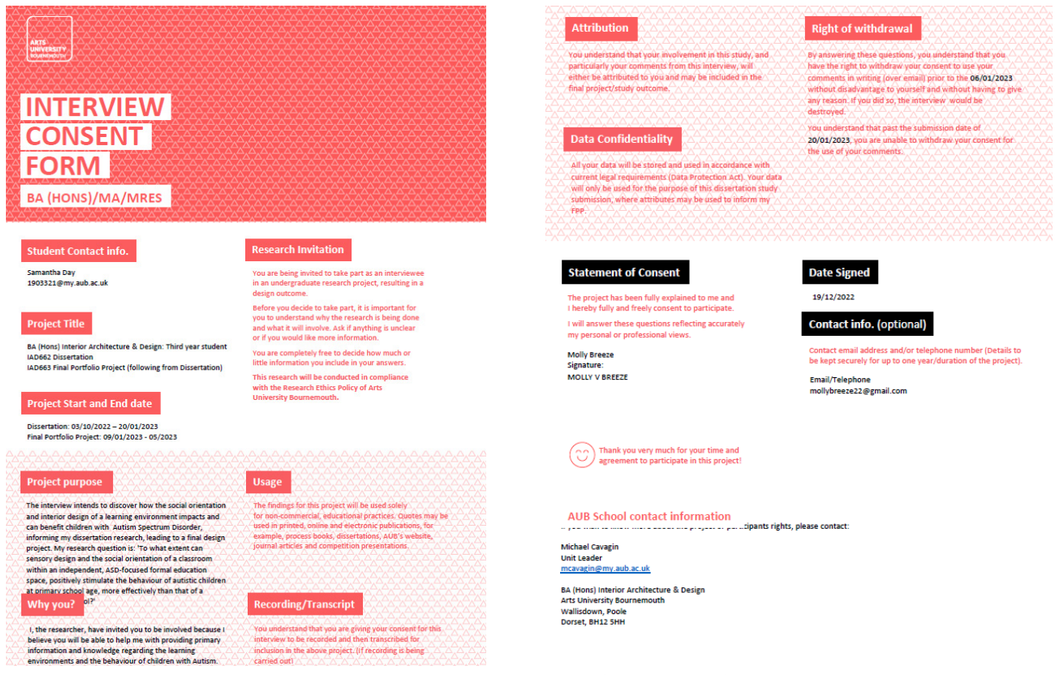
Appendices

Interview consent forms completed by those taking part in my primary research surveys.

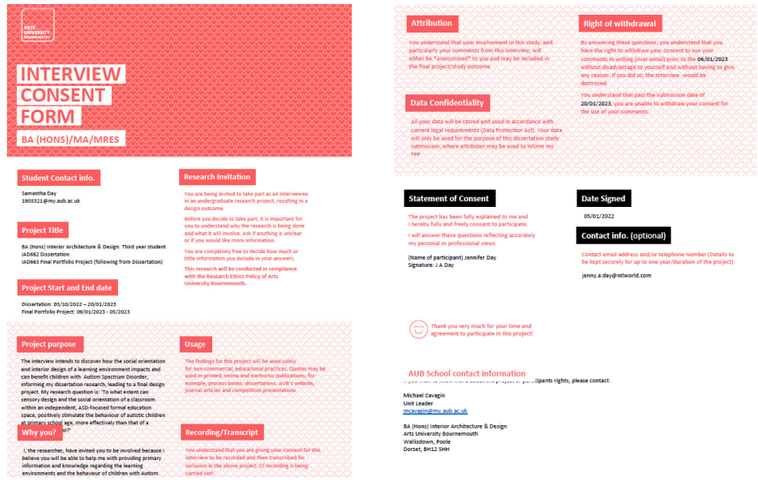
Mainstream environments survey: *'Investigating the Integration of Children with Autism within Mainstream Learning Environments': https://www.surveymonkey.com/analyze/B0JC5jfTMYvr5IzsQEPE2BjdyJ4P9NdWbJnAo3XQDUE_3D?tab_clicked=1*

Heather Jones: Teaching Assistant at Ladygrove Park Primary School (mainstream)

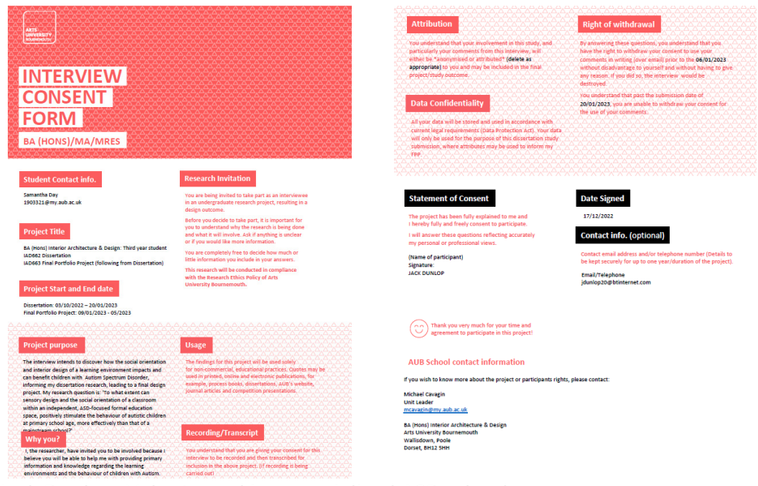


Molly Breeze: Teaching Assistant at Hagbourne Primary School (mainstream)

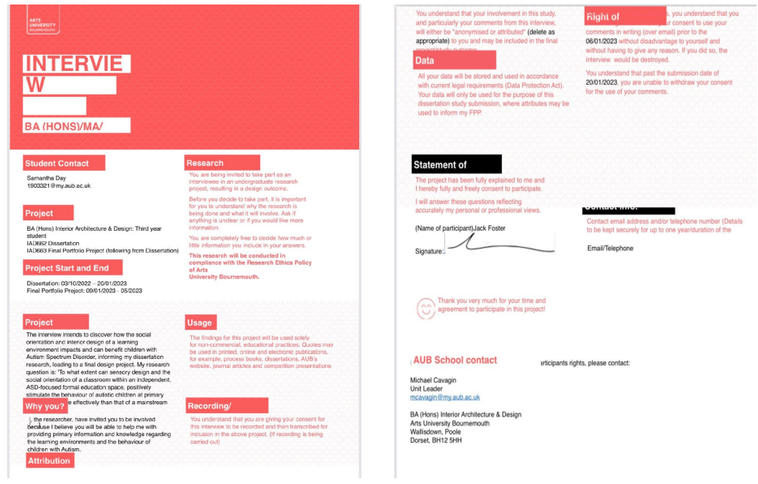
ASD environment survey: *'Investigating how Specialist Environments for Autistic Children are Beneficial': https://www.surveymonkey.com/analyze/3q4mVzqkuDCSx_2FD6SbfGNY2BBvS9Bi09Fqla8sWHKRo_3D?tab_clicked=1*



Jennifer Day: Volunteered in a specialised ASD school



Jack Dunlop: Volunteered in a specialised ASD school

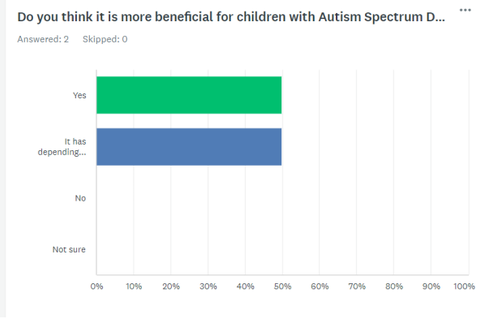


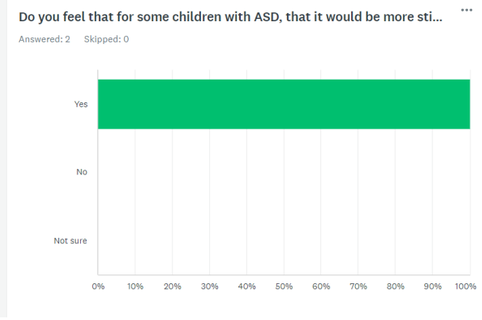
Jack Foster: Art teacher in a specialised school for children with ASD

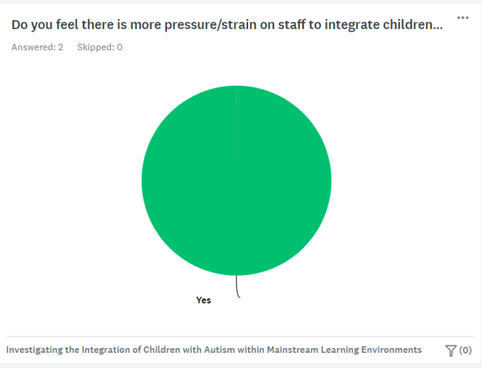
Mainstream survey results (primary research using Survey Monkey - authors own)

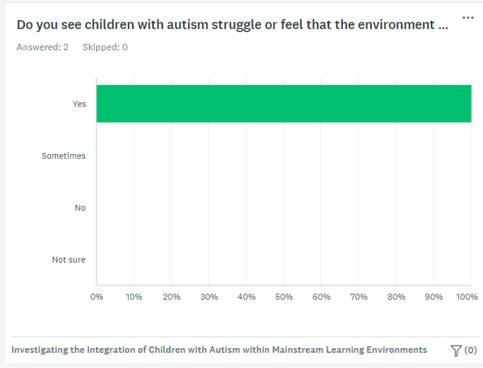
Investigating the Integration of Children with Autism within Mainstream Learning Environments

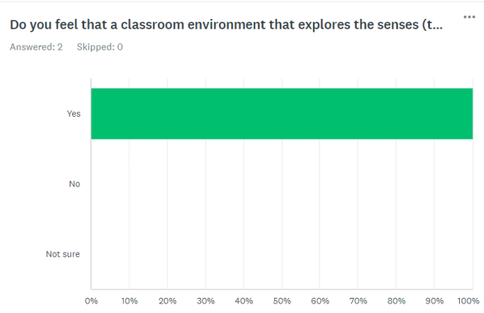
SUBTITLE

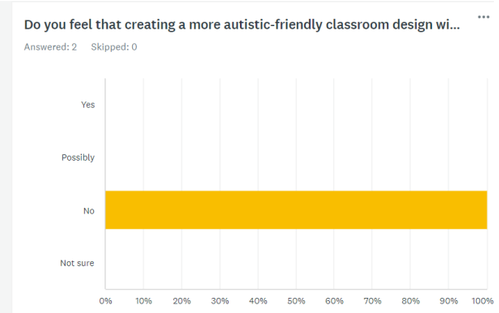


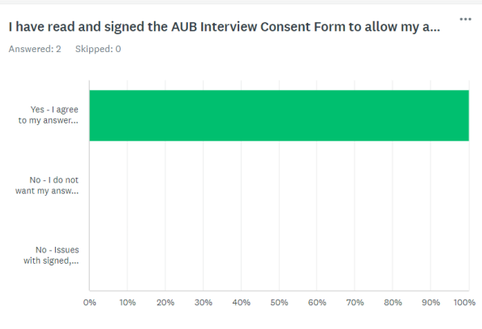












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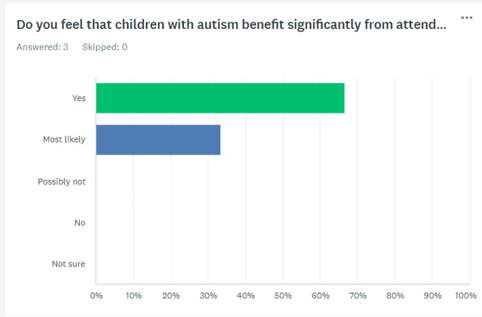
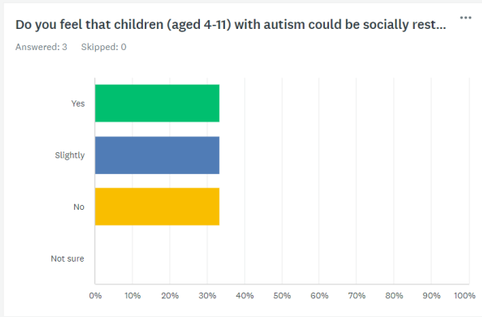
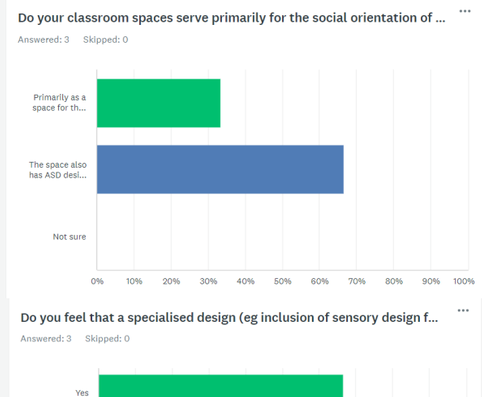
ASD environment survey results (primary research using Survey Monkey - authors own)

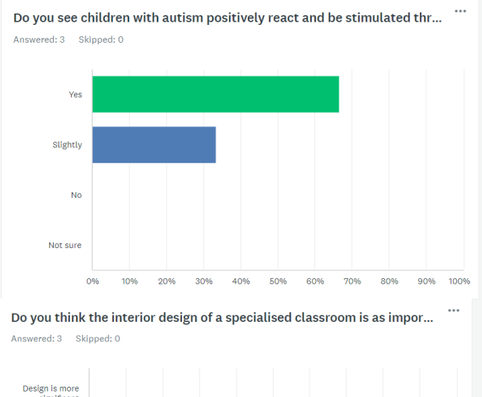
Investigating how Specialist Environments for Autistic Children are Beneficial

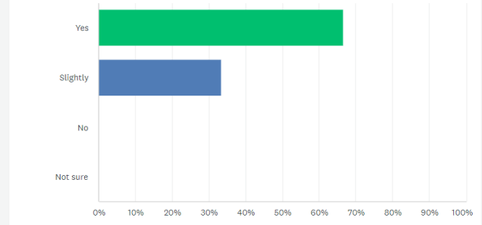
SUBTITLE

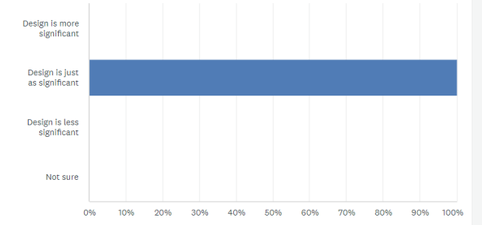


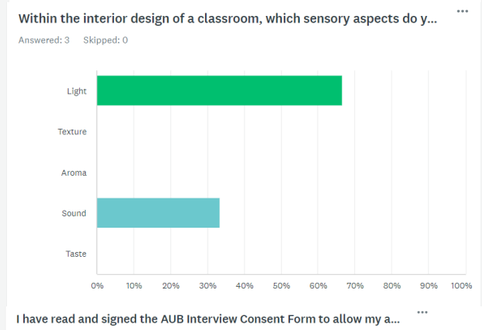


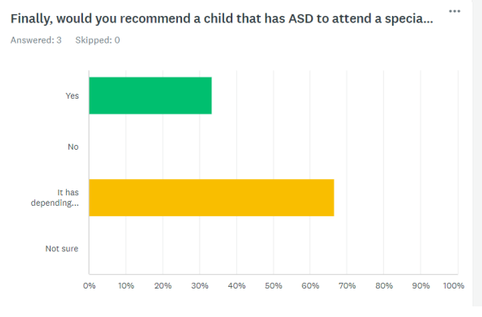


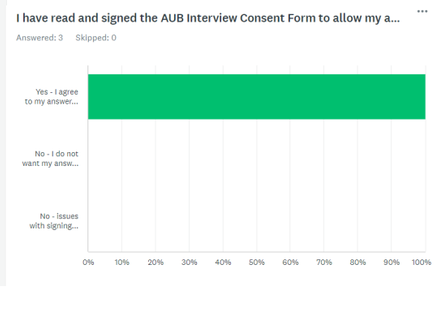












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