

# Advancing Education for Neurodiverse Students in Morocco: A Repository for Teachers, Parents, and Students

Sponsored by Educall

An Interactive Qualifying Project submitted to the faculty of  
Worcester Polytechnic Institute in partial fulfillment of the requirement  
for the degree of Bachelor of Science



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*<http://www.wpi.edu/Academics/Projects>*

# **Abstract**

The Moroccan educational system has overlooked the importance of inclusive education, leaving many students with different learning styles unaddressed by traditional teaching methods. In response, we conducted an evaluation of the status of inclusive education, focusing on the Vision School in Morocco. Through interviews with experts, teachers, and parents, we identified the needs of teachers, parents, and students. Based on our findings, we developed a comprehensive repository of education resources to support members of the educational ecosystem in terms of neurodiversity. These resources are now easily accessible online through the [Educall.ma](http://Educall.ma) website.

# Executive Summary

As both medicine and education have improved in the last few decades, recognition of learning disabilities has increased drastically. With this increased recognition comes a rise in the diagnosis rate of those with learning disabilities. In recent years there has been a concerted effort to destigmatize “learning disabilities” and this process begins with referring to the condition as neurodiversity instead of learning disability, which has a negative perception. Neurodivergence refers to a broad range of neurological conditions that affect a person’s perception, behavior, and ability to process information. These conditions include but are not limited to: autism, dyslexia, ADHD, dyscalculia, dysgraphia, and dyspraxia. Neurodiversity leads to different styles of learning that allow those affected to better understand and retain information. These differences become strengths as students can learn better if taught using their preferred style, such as visual or hands on learning.

In Morocco, neurodiversity and the different learning styles are still mainly referred to as learning disabilities. Although there has been an effort in recent years to recognize that different learners have distinct skills and viewpoints, a large portion of Moroccan society still sees these different learning styles as handicaps. Due to this traditional attitude towards neurodiversity, there have not been many advancements in inclusive education within the classroom. If teachers and parents were made more aware of the learning difficulties those with neurodivergence face, they could create better environments that support and encourage learning differently. By recognizing the prevalence neurodiversity has in the classroom and teaching students with their preferred methods, the quality of education neurodiverse students receive will vastly improve.

The aim of our project is to improve upon the current practices for educating neurodivergent primary school children in Morocco. We sought to accomplish this by providing teachers and parents with useful information on supporting neurodivergent students, specifically those who have learning styles aligning with dyslexia, dyscalculia, and ADHD. To do this, we developed an online repository that informs teachers, parents, and students about neurodiversity. To assist us with this goal we had immense help from our sponsor at Educall, co-founder and CEO Dr. Yassine Ettayal. Educall is a non governmental organization based in Rabat, Morocco whose mission is to provide equal education to all children, regardless of their social class. They have partnered with the Vision School, a private primary preschool, due to

their aligning ideologies regarding quality of education. Without the dedicated help of Educall and the Vision School, we could not have met our project goals as effectively.

To begin our project, we outlined three essential objectives to accomplish the completion of our goal. These steps were: determine the status of inclusive education via stakeholder input, develop a repository of educational resources for students, teachers, and parents, and demonstrate the repository to teachers and parents for feedback. Each achievement was important to the completion of our project as a whole.

In order to create this repository, we first had to understand the current state of inclusive education in Morocco, specifically at the Vision School. It was crucial to consult with all stakeholders to solidify our comprehension of how well-established neurodivergent education was in Morocco, in terms of both knowledge and awareness. Destigmatizing the negative perceptions that surround learning differences requires input from all members within the student's educational environment. Neglecting any one of these members would leave a significant portion of primary school education unaffected by our repository.

To accomplish the first objective, we conducted interviews with the appropriate stakeholders in our project. This included Educall's co-founder and program coordinator, four experts, six teachers from the Vision School, six Vision School parents, and a class of masters students studying education at the Mohammed V University. We took into account every comment and concern during the process of developing the repository in order to fully meet the needs of all those involved in the educational ecosystem. With the completion of the interviews we were then able to move into our next objective of constructing the repository.

We created both an online repository and an informational paper guide. Both of these deliverables were completed in three separate languages, English, French, and Arabic. These three languages are the most commonly used in Morocco, allowing our project to have a wide reach to as many Moroccans as possible. The paper guide we made provided basic information regarding neurodiversity; including what neurodiversity is along with a brief explanation of ADHD, dyslexia, and dyscalculia. Also included was a section with professional contacts so that teachers and students are able to reach out to an expert for help or diagnosis. Lastly, there was a summary of our repository's goals so that those reading are able to familiarize themselves with what the repository hopes to accomplish.



The online repository was completed and attached to Educall’s main website under the tab labeled “Lighthouse”. The repository was developed using the platform Strikingly, to allow easy access and maintenance for our sponsors who had previous experience with the application. The name Lighthouse was created to transcend the three languages. It is recognizable in English, Arabic, and French, and helps visualize our goal of shining a light on neurodivergence across Morocco. Lighthouse contains six main sections. These sections include an overview of the repository, information about neurodivergence, how neurodivergence affects parents, teachers, and students, supportive resources, frequently asked questions, and a section to contact Educall. All of these sections aim to improve the understanding and awareness of neurodiversity through information and resources.



*Figure ES.1: Educall Lighthouse Home Page*

Feedback on our work was necessary to determine if our repository would serve the stakeholders needs. For this, we interviewed six different Vision School teachers. Two of the teachers also had children attending the school, making them vision school parents as well. Overall, the feedback was very positive. These teachers were not experts, however they agreed that the information included would greatly serve their needs as educators. The teachers and parents agreed that our website was simple to access, had clear organization, was easy to navigate, and contained clear information. Two teachers, however, did recommend features to be added. One teacher thought it would be beneficial to add an email alias for private or specific questions, as the jamboard and whatsapp groups are not anonymous. Another teacher

recommended that we lengthen the answers to some of the frequently asked questions to include more in depth information.

After extensive research into inclusive education in Morocco and the development of a repository of educational resources, it is clear that promoting inclusivity in education is crucial for the success of all learners. Our research highlighted the significant challenges that exist in creating an inclusive educational environment in Morocco, such as inadequate resources, lack of teacher training, and societal attitudes towards students with neurodiversity. Despite these challenges, our study has demonstrated that, with the right support and resources, inclusive education can be successful in Morocco. Based on the feedback we received from parents and teachers, our repository of educational resources can be a valuable tool in promoting inclusive education throughout Morocco.

There are multiple details our team would recommend looking into for the future. For our sponsor Educall, who will be maintaining the website, future improvements to the site's functionality and content can attract more first time users. The current repository contains spaces where parents and teachers can interact with each other through WhatsApp chats and Jamboard pages. We strongly encourage Educall to host an additional space on their website where parents and teachers can interact without needing to use these other sources. Developing a chat feature directly located on Educall's website would be more secure and easier to use. Additionally, neurodiversity and inclusive education are becoming more recognised, especially within Moroccan education. As more information and research continues towards these subjects, Educall and their Lighthouse program should update the repository to reflect the most current, accurate information for parents, teachers, and students.

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## Authorship Page

**Lucy Buda** was a co-author of this report. She focused on conducting the interviews with experts and teachers, transcribing interviews, and creating content for the informational pamphlets. Lucy contributed to writing and editing all sections of our final report, final presentation, informational guides, and informational pamphlets.

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**Ethan Wolf** was a co-author of this report. He represented the group while speaking with the parents of Vision School students at Digital Literacy 4 Parents Day, conducted expert interviews with the team, and collaborated to create the content for the online repository. Ethan contributed to writing and editing all sections of the final report, final presentation, informational guides, and informational pamphlets.

# 1: Introduction

Neurodiversity is a term used to describe people with different styles of learning, which challenges the traditional view of neurological differences. The term neurodiversity is used to place an emphasis on the natural variation of each person's thinking as well as their unique perspectives on the world. "Neurodiversity may be every bit as crucial for the human race as biodiversity is for life in general. Who can say what form of wiring will prove best at any given moment?"<sup>1</sup> This quote from Harvey Blume, who popularized the term "neurodivergent", acknowledges that different learners such as students with autism, attention-deficit/hyperactivity disorder (ADHD), dyslexia, dyscalculia, and other recognized learning styles, have distinct skills and viewpoints that are beneficial to society. This positive outlook toward neurodiversity is being used to advance an inclusive and welcoming society that honors, embraces, and educates both the public and educators about neurological diversity. Cultural progress has sparked crucial discussions and modifications as to how we handle our social, professional, and educational relationships with those who have different thinking and learning styles.

In Morocco, neurodiversity and the different learning styles are still frequently referred to as learning disabilities. Although there has been a greater push to recognize that different learners have distinct skills and viewpoints that are beneficial to society, a large portion of Moroccan society still sees the different learning styles as handicaps. Due to this traditional attitude towards neurodiversity, there have not been many advancements in inclusive education within the classroom.

Some Moroccan private schools, such as the Vision School, have begun to make accommodations for students with different learning styles and have been building an education system that works towards each student's strengths. This progressive philosophy toward teaching is largely due to them having a source of revenue from parents that allows them to afford to focus on individual students. Additionally, they have created partnerships with organizations, such as Educall, that focus on providing an equal education for all their students. However, in public schools the education system is not fully equipped to support the specific needs of neurodivergent students. There is also no precedence of focusing on the individual needs of students. Teachers primarily focus on completing what they are given in their syllabus, and do

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<sup>1</sup> Blume, H. (2019, August 15). Neurodiversity. The Atlantic. Retrieved Feb 2, 2023, from <https://www.theatlantic.com/magazine/archive/1998/09/neurodiversity/305909/>

not work to accommodate each individual student's learning style. For neurodiverse students who do not learn the same way as neurotypical students, this can be devastating for their education.

Education is a basic need of any individual, regardless of their circumstance. Investing in the education of youth is an investment in the future of our world. Neurodivergent students are susceptible to falling behind in the classroom as many traditional teaching methods are not catered towards these students' strengths. Traditional classroom environments can negatively impact students who have been diagnosed with: ADHD, dyscalculia, dysgraphia, dyslexia and dyspraxia. While these learning styles have been viewed negatively in the past because of the educational struggles associated with them, it is important to remember that each learning difference also has its own strengths. Although most classrooms focus on the majority of the students and their preferred styles of learning, the classrooms are still often accompanied by students with nontypical learning styles. These students can require learning techniques that differ from how other students understand certain topics.<sup>2</sup>

The goal of this project was to improve upon the current practices for educating neurodivergent primary school children in Morocco. To achieve this goal, we improved inclusive education by providing teachers, parents, and students with easily accessible, useful information on supporting neurodivergent students, specifically those who have learning styles aligning with dyslexia, dyscalculia, and ADHD. We sought input from all members involved in a child's education to outline the major elements missing from parents and teachers' knowledge of the issue. We then designed an online repository and paper guide with a general explanation and information about neurodivergent learning styles in an effort to destigmatize any negative stereotypes. The online repository also has resources that parents, teachers, and even students can use to promote inclusive education. The repository is able to be updated in the future by our sponsor, Educall, so they are able to add any new information including additional learning styles and up-to-date information.

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<sup>2</sup> Nicole Baumer, M. D., & Julia Frueh, M. D. (2021, November 23). What is neurodiversity? Harvard Health. Retrieved Feb 13, 2023, from <https://www.health.harvard.edu/blog/what-is-neurodiversity-202111232645>



## 2: Background

This chapter provides the background knowledge required to understand the problems associated with neurodivergent learning in Morocco. First, we define “neurodiversity” and the various types that can be present. Next, we cover the educational system in Morocco, including the past influences upon it and its current structure. We explain the best programs and practices to assist neurodivergent students that are currently being utilized around the world. Then we discuss the current state of neurodiversity in Morocco in terms of acceptance among parents. Lastly, we provide an overview of our sponsor, Educall (Education for All), who worked with us to provide critical information about the Moroccan Education system as well as put us in contact with teachers, parents, and experts. By the end of this chapter, you will have a better understanding of the contextual factors that impact neurodivergent learning in Morocco.

### 2.1 Neurodiversity

Neurodivergence refers to a broad range of neurological conditions that affect a person’s perception, behavior, and ability to process information. These conditions include but are not limited to: autism, dyslexia, ADHD, dyscalculia, dysgraphia, and dyspraxia. Neurodivergent students may have challenges with attention, communication, social interaction, and executive function, which neurotypical students might not experience themselves.

These challenges may arise because traditional teaching methods do not effectively reach neurodivergent students. These students may struggle with lectures, group work, and standard assessments. Some neurodivergent students may also have sensory sensitivities, such as aversion to loud noises, bright or fluorescent lights, or certain textures, which can make the educational environment overwhelming or distracting. Social interaction difficulties can also arise for neurodivergent students, including difficulty with communication, understanding social cues, or maintaining relationships.<sup>3</sup>

Other challenges include executive function differences that can make it challenging for neurodivergent students to plan, prioritize, and manage time effectively, which can consequently affect their academic performance, measured by traditional methods. Neurodivergence leads to

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<sup>3</sup> What is neurodiversity? Child Mind Institute. (2023, January 9). Retrieved Feb 12, 2023, from <https://childmind.org/article/what-is-neurodiversity/>

students having unique learning styles which results in them processing information differently, such as with reading, writing, or retaining information, which can impact their academic success in traditional schooling. They may also face communication difficulties, such as stuttering, speaking in a monotone voice, or difficulty understanding sarcasm, which can make it challenging for these students to effectively communicate their thoughts and ideas.<sup>4</sup>

Neurodivergent students also face external challenges. Stigma and discrimination can result in lower self-esteem, reduced academic motivation, and decreased opportunities for neurodivergent students, who may feel marginalized and excluded from mainstream education and society. Finally, a lack of accommodations in the educational setting can make it challenging for neurodivergent students to fully access the curriculum and participate in the classroom. These types of issues can be addressed in the classroom by creating more flexible seating arrangements, alternative testing options, or support for organization and time management.

On the other hand, neurodivergent students may have strengths in areas such as creativity, problem-solving, and critical thinking. Additionally, they may have strong capabilities for attention to detail and the ability to focus on specific interests as well as have high levels of perseverance and determination. Finally, neurodivergent students can have exceptional memory skills, and a strong ability to think outside of the box. They can have natural talents in a specific area or skill, and can improve their capacity for empathy and understanding of the experiences of others. It is important for educators to understand and support the unique needs of neurodivergent students in order to help them succeed in their academic and personal lives.

### **2.1.1 Signs of neurodivergence**

Every child is unique and develops at their own pace. However, it is important to note that there are some potential signs that could indicate a child is neurodivergent. Some potential signs of neurodivergence include, but are not limited to any of the following:

- *Delayed speech or language development*
- *Difficulty with fine or gross motor skills*
- *Difficulty with social interaction*

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<sup>4</sup> Jones, C. (2022, March 31). Parents' guide to 504 plans and IEPs: What they are and how they're different. EdSource. Retrieved January 30, 2023, from <https://edsource.org/2022/parents-guide-to-504-plans-and-ieps-what-they-are-and-how-theyre-different/669493#:~:text=What's%20the%20difference%3F,as%20speech%20or%20occupational%20therapy.>

- *Difficulty with transitions or changes in routine*
- *Difficulty with impulse control*
- *Sensory sensitivities*
- *Repetitive behaviors or movements*
- *Lack of eye contact*
- *Not responding to their name being called*
- *Unusual or intense interests that are not typical for their age*

Exhibiting these signs does not necessarily indicate that a child is neurodivergent, but seeking a diagnosis from a healthcare professional is recommended if multiple of these signs are present.

### **2.1.2 Attention-Deficit/Hyperactivity Disorder (ADHD)**

ADHD stands for attention-deficit/hyperactivity disorder, and is one of the most common neurological disorders for children to experience. Children diagnosed with ADHD may experience difficulties with maintaining focus and regulating impulsive actions, such as acting without considering the consequences, or exhibiting excessive levels of physical activity. Symptoms can include: excessive talking, fidgeting, difficulty getting along with others, careless mistakes, and a wandering mind. This condition is often genetic and present at birth, however, one can also acquire ADHD through a brain injury, premature delivery, low birth weight, or exposure to harmful substances during pregnancy. It used to be thought that ADHD was a result of eating too much sugar, watching too much television, and poverty. However, research has subsequently found that there is no casual relationship between any of these factors and ADHD.<sup>5</sup>

### **2.1.3 Dyslexia**

Dyslexia is a neurological disorder that impairs someone's ability to read. Symptoms of dyslexia can include difficulties with spelling, visual-verbal responding, and manipulating sounds. It is important to understand that dyslexia is not caused by laziness, lack of intelligence, or poor vision. Dyslexia is a neurological condition that affects the way the brain processes information.<sup>6</sup>

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<sup>5</sup> Centers for Disease Control and Prevention. (2022, August 9). What is ADHD? Centers for Disease Control and Prevention. Retrieved February 20, 2023, from [https://www.cdc.gov/ncbddd/adhd/facts.html#:~:text=ADHD%20is%20one%20of%20the,\)%2C%20or%20be%20o verly%20active](https://www.cdc.gov/ncbddd/adhd/facts.html#:~:text=ADHD%20is%20one%20of%20the,)%2C%20or%20be%20o verly%20active).

<sup>6</sup> Shaywitz, S. E., & Shaywitz, J. (2020). *Overcoming dyslexia*. Alfred A. Knopf.

## 2.1.4 Dyscalculia

Dyscalculia is a learning style that impairs an individual's capability to comprehend numerical and mathematical information. Individuals with dyscalculia can struggle with math and number-related concepts, but it is important to remember that these individuals are not less competent or intelligent than those without dyscalculia. This learning style can affect anyone, however, it is most common to notice symptoms in early primary school, or between the ages of six and nine. Dyscalculia has been shown to affect between 3% and 7% of people worldwide.<sup>7</sup>

There are several components that go into understanding and solving a math related problem. First, one must use their visual processing to read the problem and send the information to the brain. Then, short-term memory must hold onto the details of the problems. The brain must also interpret the symbols and numbers into actual quantities and meanings. Then finally, one must complete the calculation, combining all of the above steps to complete the problem.<sup>8</sup>

## 2.1.5 Preferred Learning Styles

Neurodivergent students have many positive attributes, allowing them to strive in nontraditional ways. Every student has their own strengths and weaknesses, leading to preferred learning styles. A student's unique way of intaking information is known as their learning style. Some of the common learning styles are:

**Audio:** This refers to a student who comprehends subjects more effectively through verbal communication.

**Visual:** This pertains to students who learn better by observing and processing visual information such as text, images, and slideshows.

**Physical:** This relates to students who benefit from engaging in hands-on activities such as puzzles and games.

While many of these styles of learning are currently incorporated into school curriculum, the styles of learning mentioned may not suit every student in the classroom. Students diagnosed with a neurodiversity can have a distinct learning style that may not be accommodated for in the

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<sup>7</sup> Dyscalculia: What it is, causes, symptoms & treatment. Cleveland Clinic. (n.d.). Retrieved Feb 4, 2023, from <https://my.clevelandclinic.org/health/diseases/23949-dyscalculia#:~:text=What%20is%20dyscalculia%3F,of%20people%20without%20this%20disorder>.

<sup>8</sup> Dyscalculia: What it is, causes, symptoms & treatment. Cleveland Clinic. (n.d.). Feb 18, 2023, from <https://my.clevelandclinic.org/health/diseases/23949-dyscalculia#:~:text=What%20is%20dyscalculia%3F,of%20people%20without%20this%20disorder>.

current educational framework. Inclusive education involves incorporating each student's preferred learning style in the classroom to ensure that they all have an opportunity to thrive. Being able to incorporate each student's preferred style of learning in the classroom is inclusive education, making sure that each student is given the opportunity to succeed. Understanding the many ways students learn can help them excel throughout their education.

## 2.2 Education in Morocco

On March 2nd of 1956, the efforts of Moroccan nationalists finally paid off. After twelve long years of protesting and several thousand protestor lives lost, France ended its protectorate relationship over Morocco, under which, many Moroccan citizens were deprived of a basic education.<sup>9</sup> The number of students in secondary schools increased, minimally, from 7,500 to 10,000. While school enrollment numbers did increase, a majority of the population was still without an education. New schools had to be built to accommodate a larger number of students. Scholarship programs were implemented, specifically for technical fields such as engineering, english, mathematics, and public works. A brand new Morocco School of Engineering was opened in 1960, helping high school students in math, physics, and chemistry.<sup>10</sup> School enrollment and graduation rates have continued to rapidly increase in the last thirty years. As seen in figure 1, secondary education graduation rates were 33.2% in 1990, with an increase to 75.6% in 2021.<sup>11</sup>

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<sup>9</sup> University of Central Arkansas: *UCA*. Political Science. (n.d.). Retrieved February 13, 2023, from <https://uca.edu/politicalscience/dadm-project/middle-eastnorth-africapersian-gulf-region/francemorocco-1930-1956/>

<sup>10</sup> Fassi, A. E. (1955). The Present Situation in Morocco. *Pakistan Horizon*, 8(2), 327–330. <http://www.jstor.org/stable/41392176>

<sup>11</sup> World Development Indicators. Databank. (n.d.). Retrieved February 14, 2023, from <https://databank.worldbank.org/reports.aspx?source=2&series=SE.SEC.CMPT.LO.ZS&country=>

### Secondary Education Graduation Rates

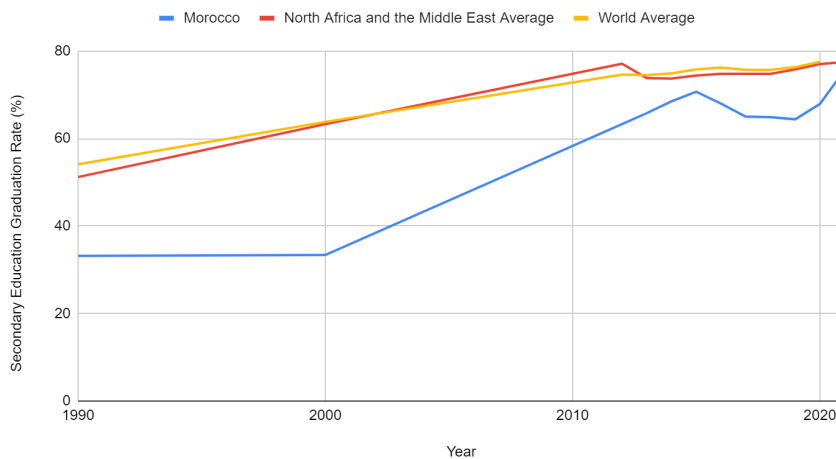


Figure 2.2.1 : Secondary Education Graduation Rates<sup>12</sup>

In post-French-rule Morocco, Hassan II focused on improving his country's educational system. The years of 1999-2009 were declared the “decade of education.” With that, the education system witnessed many changes and reforms, but remained heavily influenced in structure by the French pedagogical system. The goals of this time were to decrease the illiteracy rate, improve the quality of education, combat various inequalities, and continue the development of private education. Education, however, was still based in Islamic religious contexts. The main goals of schooling were to create an ideal citizen, who like the Prophet Mohammed, would display the highest moral standards, including integrity and commitment.

The current educational system in Morocco begins around the age of four. Children enter into pre-primary education where they stay for three years before entering into primary education. Pre-primary education focuses on the development of sensory, motor, creative, and expressive skills, in addition to religious and ethical values. These courses also prepare children to read and write in Arabic. Pre-primary education comes in a few forms in Morocco, including Qur’anic schooling and modern schooling. Qur’anic schools fall into two categories, M’sid and Kuttâb. Fewer students, 12.88%, attend M’sid schools. These kinds of schools are traditional and overseen by the Ministry of Religious Affairs. Their purpose is solely for religious education, and they are most popular in rural areas. A majority, 77.34%, of students attend a Kuttâb school,

<sup>12</sup> World Development Indicators. Databank. (n.d.). Retrieved February 14, 2023, from <https://databank.worldbank.org/reports.aspx?source=2&series=SE.SEC.CMPT.LO.ZS&country=>

which is headed by the Ministry of National Education. This kind of pre-primary school focuses on the necessary skills to succeed in primary education, in addition to religious education. For example, developing reading, writing, and grammar skills.

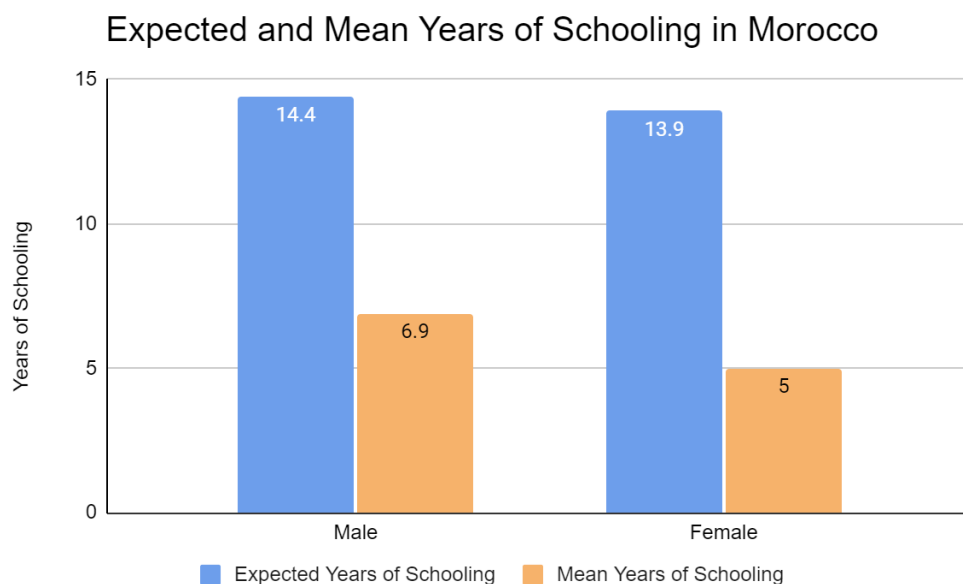
Students begin their primary education at the age of 6 and remain until they are 12 years old. Learning is organized into two cycles. The first cycle lasts two years, and aims to reinforce the learning from pre-primary education. The next cycle, the intermediate cycle, lasts four years, and its objective is to develop a child's abilities. Previous topics are explored in more detail, and important skills such as technology use and communication are taught.

After primary education, students advance to secondary education. Unfortunately, children in rural areas have always been less likely to attend secondary education or university compared to youth in urban areas.<sup>13</sup> Two independent cycles make up secondary education: mandatory collegial (high school) education and qualifying secondary education. The *brevet d'enseignement collégial* (BEC), a certificate allowing progression into the subsequent educational cycle, may be obtained at the conclusion of the three-year collegial education. Qualifying secondary education is structured in three different branches: general, technical, and vocational.<sup>14</sup>

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<sup>13</sup> Yassine, A., & Bakass, F. (2022). Youth's poverty and inequality of opportunities: Empirical evidence from Morocco. *Social Sciences*, 12(1), 28. <https://doi.org/10.3390/socsci12010028>

<sup>14</sup> Llorent-Bedmar, V. (2014). Educational reforms in Morocco: Evolution and current status. *International Education Studies*, 7(12). <https://doi.org/10.5539/ies.v7n12p95>



*Figure 2.2.2. 2021 Expected and Mean Years of Schooling in Morocco<sup>15</sup>*

Current Moroccan students are expected to accomplish about 14 years of schooling beginning from primary school, as depicted in Figure 2.2.2. The Mean Years of Schooling is the average amount of education received by people ages 25 and older in years. The Expected Years of Schooling is a projected number for the years of schooling if current age-specific enrollment rates persist throughout the child's education. In practice, many children do not meet the educational expectations set for them.

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<sup>15</sup> United Nations Development Programme. (2022). *Human development report 2021/2022: Uncertain Times, unsettled lives: Shaping our future in a transforming world.*



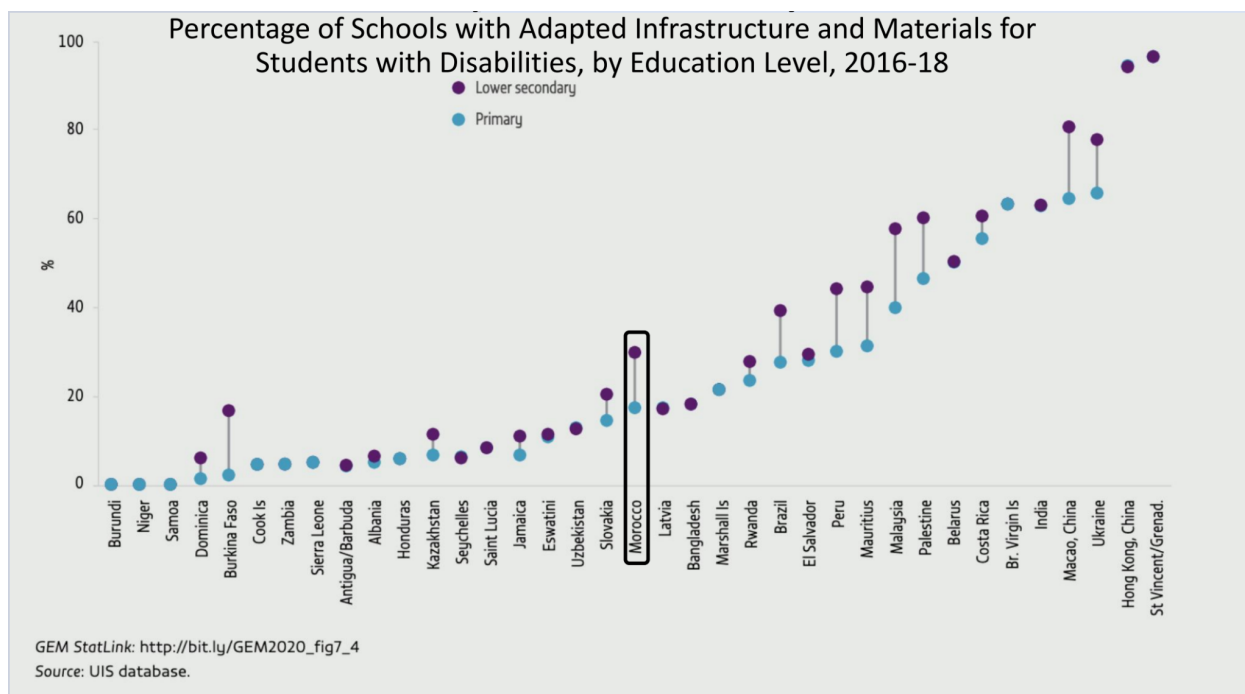


Figure 2.2.3 : Percentage of Schools with Adapted Infrastructure and Materials for Students with Disabilities, by Education Level, 2016-18

Currently, about 20% of Morocco’s primary schools, and 35% of its secondary schools have the adopted infrastructure and materials for students with disabilities, as seen in figure 2.2.3. Many other countries included in this graph ranked much higher than Morocco, with some countries nearing 100% inclusion rates. This shows that Morocco has room to grow when it comes to providing accommodations and inclusive education to students with disabilities.

## 2.3 Best Programs and Practices in Special Education

UNICEF (The United Nations Children's Fund) is an organization working to advance children's rights and to help provide them with proper nutrition and health care. In Morocco, 700 schools were targeted to implement a new non-governmental inclusive education plan, between 2019 and 2021.<sup>16</sup> UNICEF also expanded their inclusive education model and training to 1,022 teachers and 10,200 children in 98 primary schools in 2019. In addition to their education plan,

<sup>16</sup> United Nations Children's Fund (UNICEF). (2019). State of the Children in Morocco 2019. <https://www.unicef.org/media/90651/file/Morocco-2019-COAR.pdf>

UNICEF has also developed training modules for teachers, heads of schools, and parents about inclusive education.

In UNICEF's "*Country Office Annual Report 2020*" of Morocco, the organization states that they have worked with the Ministry of Education (MoE) to develop a kit that allows parents to keep track of their preschool aged children. UNICEF has worked to target 10% of Morocco's primary schools to be converted into an inclusive education model. Through these efforts, the organization estimates that they have doubled the amount of neurodivergent children attending primary school from 10,200 to 22,240 from 2019-2020.<sup>17</sup>

Although UNICEF has helped make significant advances towards improving access to education for children with disabilities, UNESCO (The United Nations Educational, Scientific, and Cultural Organization) reported that, in 2021, only 20% of primary schools in Morocco have access to modified infrastructure and materials for students with "disabilities".<sup>18</sup> The surprisingly low percentage reported is consistent with the challenges that UNICEF has faced. Some of these shortcomings include the lack of trained teachers, inadequate infrastructure and resources, as well as a lack of inclusive policies and practices. Despite these challenges, UNICEF is continuing to work with the government of Morocco to promote inclusive education and to support the development of policies and practices that ensure that all children have equal access to education.

Successful deployments of learning inclusivity have been accomplished in places around the world that began with conditions similar to Morocco. In Sri Lanka, a teacher training program was put into place and the results noted a substantial increase in the teachers' understanding, acceptance, and readiness to accommodate neurodivergent students. The teachers that attended the workshop stated they gained a significant understanding of learning differences and the implications for the classroom. Out of the teachers chosen for the study, 120 out of 125 reported that the program was able to increase their knowledge. An interview at the start of the program revealed 118 out of 125 teachers didn't know or weren't confident about what *dyslexia* was. This study established that countries dealing with the issue of noninclusive education are lacking the necessary discussions to provide teachers the information they need.

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<sup>17</sup> United Nations Children's Fund (UNICEF). (2020). State of the Children in Morocco 2020. <https://www.unicef.org/media/100426/file/Morocco-2020-COAR.pdf>

<sup>18</sup>The United Nations Educational, Scientific, and Cultural Organization (UNESCO). (2022). Morocco Country Dashboard. SDG 4 September 2022. <http://sdg4-data.uis.unesco.org/>

Teachers from the Sri Lanka study also claimed to feel more confident with implementing changes to their curriculum or changing their teaching techniques in order to accommodate more students. Again this shows the benefits of holding teacher workshops to provide the teachers with improved “content knowledge” for neurodiverse learners.<sup>19</sup>

A workshop like this can be beneficial to Moroccan teachers as a small study of 10 teachers in Morocco concluded that all of the participating educators had limited awareness of inclusive education. While progress has been made by organizations like UNICEF and Educall to increase the awareness and growth of inclusive education in the classroom, a study by Mohamed Achamrah argues that the Moroccan Ministry of Education, whose public schools teach the majority of Moroccan students, support for inclusive education is “limited or non-existent”.<sup>20</sup>

Something common in places with minimal knowledge of neurological diversity is a lack of compassion. The teachers in this study confirmed that they have a new outlook when approaching students who are not doing as well as mainstream students. A common practice in Sri Lanka was to punish the students by labeling them and neglecting efforts to teach them in a way they could apprehend. Stigmatizing and negligence not only pushes the students away but also takes a mental toll on the students. After the training camp with the teachers had been completed, the teachers reported that positive reinforcement and increased attention resulted in students having productivity and focus. Without the informational sessions these teachers might still look negatively upon their neurodiverse students.<sup>21</sup>

### **2.3.1 Educating Students with ADHD**

When it comes to educating a child with ADHD, it's important to approach the situation with patience, understanding, and a willingness to try different strategies until you find what works best for the individual child.<sup>22</sup> Remember that every child with ADHD is unique, and what

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<sup>19</sup> Individuals with disabilities education act (IDEA). Individuals with Disabilities Education Act. (2023, January 30). Retrieved January 30, 2023, from <https://sites.ed.gov/idea/>

<sup>20</sup> Achamrah, M. (2022). Examining Inclusive Pedagogy and practice: Moroccan primary teachers’ attitudes and practices in Moroccan primary schools. *World Journal of Advanced Research and Reviews*, 14(2), 181–184. <https://doi.org/10.30574/wjarr.2022.14.2.0413>

<sup>21</sup> United Nations Children's Fund (UNICEF). (2021). State of the Children in Morocco 2021. <https://www.unicef.org/media/117261/file/Morocco-2021-COAR.pdf>

<sup>22</sup> U.S. Department of Health and Human Services. (n.d.). *Attention-deficit/hyperactivity disorder*. National Institute of Mental Health. Retrieved March 1, 2023, from <https://www.nimh.nih.gov/health/topics/attention-deficit-hyperactivity-disorder-adhd>

works for one child may not work for another. Be patient, flexible, and willing to try different strategies until you find what works best.

Treatments can include behavioral therapy and medication. Behavioral therapy aims to eliminate negative behaviors and promote positive behaviors. Common forms of this behavioral therapy include parent training, classroom interventions, peer interventions, and organizational skills training. Treatment is most effective when methods are used in combination, and teachers collaborate with parents. For most children with ADHD, a structured home life with the help of parents can be very beneficial. This structured home life can include having a routine, minimizing distractions, creating a plan, implementing rewards, and creating a healthy lifestyle.<sup>23</sup>

General techniques for improving the education of students with ADHD include, but are not limited to any of the following approaches:<sup>24</sup>

- *Create a structured routine:* Children with ADHD benefit from routines that are consistent and predictable. Routines can help them stay focused and manage their behavior. Establishing a clear routine for meals, homework, and other activities can be helpful.
- *Use visual aids:* Visual aids can be very helpful for children with ADHD. These can include things like color-coded calendars, picture schedules, and checklists, which can help guide remind children of proper timing for their activities
- *Break tasks down into manageable chunks:* Children with ADHD may become overwhelmed by large tasks, so breaking them down into smaller steps can be helpful. Smaller, successive tasks can help them stay focused and make progress.
- *Use positive reinforcement:* Children with ADHD respond well to positive reinforcement. Praise and rewards for good behavior can help encourage positive behavior and build confidence.
- *Use a multisensory approach:* Children with ADHD often benefit from a multisensory approach to learning, including hands-on activities, movement breaks, and visual aids.

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<sup>23</sup> Centers for Disease Control and Prevention. (2022, August 9). Treatment of ADHD. Centers for Disease Control and Prevention. Retrieved February 20, 2023, from <https://www.cdc.gov/ncbddd/adhd/treatment.html>

<sup>24</sup> Centers for Disease Control and Prevention. (2023, January 25). *Learn about attention-deficit / hyperactivity disorder (ADHD)*. Centers for Disease Control and Prevention. Retrieved March 1, 2023, from <https://www.cdc.gov/ncbddd/adhd/index.html>

- *Be patient and flexible:* Every child is different, and what works for one child with ADHD may not work for another. Be patient and flexible, and be willing to try different strategies until you find what works best.

### 2.3.2 Educating Students with Dyslexia

When it comes to educating a child with dyslexia, it's important to approach the situation) with patience, understanding, and a willingness to try different strategies until you find what works best for the individual child.<sup>25</sup> Remember that every child with dyslexia is unique, and what works for one child may not work for another. Be patient, flexible, and willing to try different strategies until you find what works best.<sup>26</sup>

General techniques for improving the education of students with dyslexia include, but are not limited to any of the following approaches:<sup>27</sup>

- *Create a supportive learning environment:* Children with dyslexia often feel frustrated and discouraged by their difficulties with reading and writing. As an educator, it is essential to create a supportive and positive learning environment. Encourage the child to express their feelings and provide them with emotional support.
- *Using a multisensory approach:* Children with dyslexia often learn best through a multisensory approach that engages multiple senses, including visual, auditory, and kinesthetic. This approach can include using manipulatives, drawing pictures, and using technology to enhance learning.
- *Focus on phonics:* Phonics instruction can be particularly helpful for children with dyslexia. Phonics teaches the relationship between letters and their sounds, which can help children decode words more easily.
- *Use assistive technology:* There are many assistive technologies available that can help children with dyslexia. Text-to-speech software, spell-checkers, and speech recognition software can all be useful tools to help children with dyslexia access information and complete assignments.<sup>28</sup>

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<sup>25</sup> The Yale Center for Dyslexia & Creativity - Yale School of Medicine. Yale Dyslexia. (n.d.). Retrieved February 27, 2023, from <https://dyslexia.yale.edu/>

<sup>26</sup> ...until everyone can read! International Dyslexia Association. (n.d.). Retrieved February 18, 2023, from <https://dyslexiaida.org/>

<sup>27</sup> Dyslexia. NCLD. (n.d.). Retrieved February 20, 2023, from <https://www.nclld.org/?s=dyslexia>

<sup>28</sup> Nuttall, J. R., & Nuttall, L. M. (2013). *Dyslexia and the iPad: Overcoming dyslexia with technology*. James Nuttall and Linda Nuttall.

- *Providing extra time:* Children with dyslexia may need extra time to complete assignments, particularly those that involve reading and writing. It is important to be patient and provide the child with the time he or she needs to complete their work.
- *Work with the child's strengths:* Children with dyslexia often have strengths in other areas, such as art, music, or math. It is important to recognize and celebrate their strengths and use them to help the child feel confident and successful.<sup>29</sup>

### 2.3.3 Educating Students with Dyscalculia

When it comes to educating a child with dyscalculia, it is important, as we've already said concerning other divergent learning styles, to approach the situation with patience, understanding, and a willingness to try different strategies until you find what works best for the individual child. Remember that every child with dyscalculia is unique, and what works for one child may not work for another. Be patient, flexible, and willing to try different strategies until you find what works best.<sup>30</sup>

General techniques for improving the education of students with dyscalculia include, but are not limited to any of the following approaches:

- *Use a multisensory approach:* Children with dyscalculia often benefit from a multisensory approach to learning math, which can include using manipulatives, such as blocks or counters, as well as visual and auditory aids. Seeing and touching tangible objects will incorporate more senses, for better understanding of abstract math principles. Tangible objects also assist in the visualization of grouping numbers. Resisting the use of worksheets, teachers and parents should utilize games whenever possible. Games will present math as a fun challenge, engaging the child far more than a worksheet. If worksheets are essential, it can be very useful to highlight or underline key numbers or topics, to help guide the child's focus. Creating visual models is similar to using manipulatives, however this technique focuses on the visual rather than the tactile sense. Simple images of objects can be very helpful in understanding quantities and other aspects of math problems

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<sup>29</sup> Foss, B. (2016). *The Dyslexia Empowerment Plan: A Blueprint for Renewing Your Child's confidence and love of learning*. Ballantine Books.

<sup>30</sup> *Dyscalculia*. Learning Disabilities Association of America. (n.d.). Retrieved February 23, 2023, from <https://ldaamerica.org/disabilities/dyscalculia/>

- *Use a structured and systematic approach to teaching math:* Children with dyscalculia benefit from a structured and systematic approach to teaching math. This can include explicit instruction in number sense, basic math facts, and problem-solving strategies.
- *Provide extra time and accommodations:* Children with dyscalculia often need extra time and accommodations to complete math tasks and demonstrate their knowledge. This can include things like extended time on tests, calculators, and assistive technology.
- *Build confidence and self-esteem:* Children with dyscalculia often struggle with math, which can lead to low self-esteem and confidence. It's important to provide opportunities for success and build on the child's strengths to help increase confidence and self-esteem.
- *Foster a supportive learning environment:* Children with dyscalculia often benefit from a supportive learning environment that emphasizes their strengths and accommodates their needs. Such support can come from small group instruction, peer support, and positive feedback. Making accommodations for these students can also include circling key topics, providing extra time for tests, and the use of a calculator.<sup>31</sup>

## 2.4 Parental Acceptance of Neurodiversity

The current environment surrounding neurodiverse children in Morocco is not one of great acceptance. While there has been a push to normalize neurodiversity among students, parents still oppose admitting their child has a different learning style because of the negative stigmas associated with this concept of learning difference. In private schools, the administration has more of a role in helping parents understand that the different learning style is not a negative characteristic or handicap, and that it is just what it is called - a different style of learning. By having parents accept that their child may be neurodiverse and possibly having them receive a diagnosis, the teachers will be better aware and suited to meet the students educational needs. In public schools the school administration is not as proactive in helping the parents understand what different styles of learning are, compared to private schools. This causes the negative stigmas to remain, ergo the problem of unequal education continues.

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<sup>31</sup> 7 practical ways parents can help a child with dyscalculia. Brain Balance Achievement Centers. (n.d.). Retrieved March 1, 2023, from <https://www.brainbalancecenters.com/blog/practical-ways-parents-can-help-child-dyscalculia>

## **2.5 Educall, Education For All**

Educall is a non governmental organization based in Rabat, Morocco, which works for the development of children, regardless of their social class. All kids despite their circumstances can fit in and benefit from their programs. They also deliver services for different people in the educational ecosystem, including parents, teachers, schools, child protection centers and civil society. Educall incorporates playful learning with technology to engage students in the classrooms and at home, providing an enjoyable, personalized experience for each student. It is important to Educall to make learning fun, exciting, and interactive.

Educall was founded in 2012, when they joined the Enactus National Institute of Posts and Telecommunications (INPT-Rabat). This organization is made up of students and academic/business professionals who strive to improve students' lives and create a sustainable world. Educall partners with several organizations like Réseau Entreprendre Maroc, which gives business advice from experienced professionals to entrepreneurs. More organizations in partnership with Educall include: The Association of Businesswomen of Morocco (AFEM), Social Enterprise Morocco, and Yunus & Youth.

Co-founders of Educall are Yassine Ettayal and Nada Bouzid. We worked directly with Yassine Ettayal and Educall program coordinator, Mohammed Benhsain for assistance on this project. Educall has been partnering with the Vision School since 2021, focusing on courses delivered to kids, social entrepreneurship, and various school programs. Together, they are fulfilling their mission of reconnecting the educational ecosystem with parents, teachers, and children. They ensure that their impact is not only to one member of the ecosystem, but to all.

Yassine and Mohammed have similar stories for how they got into the realm of inclusive education. They both grew up with strong attention to details, being interested in how things worked and wanting to excel at everything they did. Mohammed's little brother was diagnosed with dyslexia at an early age, so they worked together in different aspects. Mohammed would help with his social connections and abilities, as well as helping him with his studies. As for Yassine, his parents were in the educational fields, so he grew up in a very educational environment. Upon his university studies, he got involved in a voluntary program, helping orphans with their education. He viewed this experience to be life changing, as he loved seeing the impact he was making in these students' lives. Although he enjoyed this program, they faced many challenges. This led him to brainstorm ways he could ensure a continuous and sustainable



impact. From this, he came up with the idea for Educall. It started as a tutoring program for orphans, but he wanted to widen his reach to incorporate more people into his programs. While advancing his experience, he began to develop an expertise in the domain. Step by step, he built the entire concept and approach of Educall. By seeing his programs make a real impact, he switched Educall from just a university project to a life project. We feel very blessed to have been able to work with Educall over these past fourteen weeks, and are excited to see the future of their impact on Moroccan education.

## **3: Methodology**

With this project, we hoped to identify the best educational practices and information to support Moroccan students who have different learning styles in order to destigmatize the negative stereotypes associated with them. We set as our project goal to create a repository where neurodivergent learning styles would be explained for parents and teachers and where useful tools for teaching neurodivergent students would be available. This chapter will describe our methods for completing our objectives:

1. Determine the status of inclusive education at the Vision School via stakeholder input
2. Develop a repository of educational resources for students, teachers, and parents
3. Demonstrate the repository to teachers and parents for future improvements

To determine which types of neurodiverse students to focus on, we gathered information about various learning differences through our background research. There is not a significant amount of information in English about the prevalence of these tendencies in Morocco. However, we worked with Educall to determine the most common non-traditional learning styles that needed to be addressed in our project. We decided to focus on dyslexia, dyscalculia, and attention deficit/hyperactivity disorder (ADHD). Our progression towards completing our project was as follows: we began seeking input from all stakeholders who would be involved in advancing inclusive education, we then identified the gaps in knowledge and necessary resources that would fill these gaps, we then created our repository containing our findings and demonstrated it to teachers and parents, and finally we received and implemented feedback from our stakeholders. Educall plans to move forward with the repository after we are completed with our project, which means having the repository be easily updatable was a major factor for our project's future.

### **3.1 Determining the Status of Inclusive Education via Stakeholder Input**

In order to create a repository aimed at providing teachers, parents, and students with essential information and resources, we first had to understand the current state of inclusive education in Morocco. It was crucial to consult with all stakeholders to solidify our comprehension of how well-established neurological education currently is in Morocco, in terms of both knowledge and awareness. Destigmatizing the negative perceptions that exist

surrounding learning differences requires input from all members within the student's educational environment. Neglecting any one of these members would leave a significant portion of education unaffected by our repository. Changing the entire educational system to better help neurodiverse learners would be impossible to do, but seeking advice from these key members of primary school education is an important first step.

Advancing the inclusivity of students with different styles of learning requires constant attention from all those involved, whether it is at home or at school. These environments must be understanding and supportive of the student before any change can be made. This is why gathering stakeholder information is imperative to better understanding how familiar and comfortable each group is with talking about neurodiversity. While this varies for each individual, if the general perception among stakeholders is positive, we can be more specific and descriptive with the information we add into the repository. In contrast, if the feedback is generally hesitant or negative, we would need to approach the matter more carefully and offer simplified descriptions of the learning styles. We built the repository entirely based on our discussions with stakeholders to effectively meet their needs.

Our repository could not be established without the participation of experts in the conversation. Neurological experts possess extensive knowledge of these complex topics and have found the best ways to explain different learning styles to those who may not be familiar or accepting of them, such as some parents and teachers. Their expertise and years of research were invaluable in enabling us to make the most informed choices about which information to include into the repository.

### **3.1.1 Gathering Information and Resources from Neurological Experts**

Through the assistance of Educall, we were able to connect interviews with four experts in the field of neurology, each with their own unique focus. We conducted interviews with each of these experts utilizing the consent form and questions found in Appendix A. Our main goal was to gain a general overview of different learning styles within the Moroccan context. Specifically, we hoped to learn more about the three styles of learning that we previously confirmed to be most prevalent, and gain an insight into the process that takes place for a child who had been diagnosed with one of these learning differences. Additionally we sought to gather any academic resources or information that the experts could provide us to include into our

repository. Providing teachers and parents with expert advice would be a huge step toward advancing their knowledge and awareness of neurodiverse students. It was also important for us to gather information on the methods that teachers can utilize in their classroom to ensure an inclusive environment for all styles of learning. With these interviews we planned to build the foundation of our repository, not only by applying the information we gained regarding neurodiversity in Morocco, but also by including any of the recommended resources provided to us. Our sponsor Yassine served as the translator for each of these interview's to clarify any information that may have been lost in translation between us and the experts.

The four experts that we interviewed are listed as follows:

- **Dr. Zineb Alaoui** - Orthophoniste (Speech and Language Therapist)
- **Dr. Alham Moutez** - Clinician Neuropsychologist
- **Dr. Aasmae Boumediane** - Child Physiotherapist
- **Anonymous Expert** - Child Paedopsychology

### **3.1.2 Identifying the Needs of Primary School Teachers**

Our team conducted individual teacher interviews at the Vision School to gain insight into their experiences both while at the Vision School and previous employment. These interviews were to determine the general awareness there was regarding neurodiversity. To achieve this, we asked them questions about what training they have received, where they received it, and if any of their training covered teaching students with different styles of learning. Additionally, we inquired about any personal experiences they may have had working with neurodiverse students and how they approached these situations. The last crucial part of these interviews was to better understand what specific resources teachers would find useful in the repository. We asked them their areas of interest and what they would like to learn more about, this way we can begin building a list of potential inclusions into the repository. The teacher interviews were completed individually so as to not have any teachers be biased by other answers and to obtain the most information possible from each interview.. The consent statement and questions for this interview can be found in Appendix B.

### **3.1.3 Assessing Educall’s Means of Promoting Education for All**

Following the teacher interviews, we took time to interview our sponsor Yassine Ettayal, CEO of Educall, and Mohammed Benhsain, Educall’s program coordinator. The questions and consent form can both be located in Appendix C below. Yassine helped to develop the program that the teachers use during their training at the Vision school and has received training from a program started at Virginia University titled Learning How to Learn. With the interview we hoped to better understand his recommendations regarding teacher training and what the potential limitations might be in terms of education surrounding neurodiversity. We asked questions about the origins of Educall and the current state of the education system within Morocco, located in our background section above. Meeting Yassine and Educall’s expectations for the repository was very important to us, which is why we wanted to get his opinion on the information we have gathered thus far and identify any gaps in our research. With our improved understanding of Educall’s mission and history we can more effectively develop the repository to align with Educall’s mission of inclusive education.

### **3.1.4 Recognizing the Gaps in Parent’s Understanding of Neurodiversity**

We met with six parents at a *Digital Literacy 4 Parents* event hosted by Educall and the Vision School to gain more knowledge and understand about what a parent would want to see in our online repository. Our group conducted informal conversations as the environment was not suited for professional interviews. The general structure of the conversations are located in Appendix D. We provided the parents with an overview of our project and current plans for the repository, all outlined on pamphlets we created for this event, which can be seen in Appendix E. We encouraged feedback as to what other information they believe would be beneficial to them or to other parents in these situations. These conversations and interviews are vital as parents are part of the target audience for the repository and have a significant role in providing a supportive environment for their children.

### **3.1.5 Assessing the Knowledge of Master Students Studying Education**

We spent an afternoon at the Mohammed V University in Rabat speaking with Master students who are studying a combination of linguistics and education to teach English to non-English speakers. We wanted to have an open discussion to not only learn more about their

awareness surrounding different learning styles, but also see what kinds of resources future teachers might find useful in the repository. We prepared discussion questions and talking points that we used during the discussion in order to have an organized conversation, which can be found in Appendix E. The students also got to see the first draft of our repository and were asked to share any feedback they thought would be useful moving forward.

## **3.2 Developing the Repository**

Before we began to develop our repository, there were some crucial factors that needed to first be considered. The first being what language the repository would appear in. In Morocco, many different languages are spoken, which made it difficult to choose which language or languages to feature in our repository. The next factor we considered was how we would deliver the repository. Due to the significance of technology in the modern world we decided an online repository would be the most effective form of a repository. However, we also opted to create a paper informational guide for those who may not have access to modern technology because we wanted to reach as many people as possible. The limitation of physical space resulted in the informational guide containing less content compared to the online repository, which virtually had unlimited space. The online repository's advantage was its ability to offer a more comprehensive collection of content, divided into various sections and subcategories, allowing for more efficient organization and searchability. Additionally, the online repository can be easily updated, expanded, and accessed from anywhere that has internet connection. Overall, the online repository provides a dynamic and versatile form for the repository. The platform we selected for the online repository also required consideration to ensure the repository was effective in its delivery and not held back by the platform's formatting.

### **3.2.1 Selecting which Languages the Online Repository and Informational Guide would Feature**

We had determined that it would be unfair and exclusive to not incorporate as many languages as possible into the repository. Deciding this led us to begin investigating what languages, in Morocco, would be the most appropriate to include in our repository to allow as many users as possible to navigate the website. Originally we created our repository in English to easily understand the formatting as we designed what the individual sections looked like. In

addition to English, we decided to add French and Arabic as options, these being the two languages most widely spoken in Morocco. Since there are many different versions of Arabic, we decided that Modern Standard Arabic, or Fusha, would be the best to include as many Arabic speakers as possible. We felt these three languages would allow a broad audience of users to have access and understand the content of our repositories.

### **3.2.2 Determining What to Include in the Informational Guide**

The Morocco population has roughly 31.6 million internet users; around 85% of the country's population. Although the Moroccan population has increased their internet usage year after year, there are still roughly 5.5 million people without internet access. The paper repository is important, but does have limited space for information. For this reason we had to specifically select what we felt should go onto the paper repository, which will come in the form of a pamphlet. Due to teachers on average having access to the internet while at school, we concluded that the paper repository will mostly be for parents. This conclusion led to the decision of including just basic information in the pamphlet and having it serve as an introduction to the online version. The paper repository features an overview of what neurodiversity is and an general summary of dyslexia, dyscalculia, and ADHD. We will also have a description of what the repository attempts to accomplish and have our background information included on the back. We believed that this information along with a QR code to our online repository was sufficient enough for the paper repository.

### **3.2.3 Reasoning for Selecting Strikingly as a Platform for our Online Repository**

We first heard about Strikingly through our sponsor, Yassine. Yassine had previously used Strikingly for the Vision School and had a pro account that he paid for. We had discussed using other applications to create our repository, such as google sites, but decided that Strikingly would be the most beneficial. Yassine's pro account granted us access to many helpful features, and just about everything we would need to create an official website. Additionally, since we were making the repository with Yassine's account, he would be able to update it and maintain it once our project concluded.

### **3.2.4 Naming the Online Repository, “Lighthouse”**

When creating the name of the online repository we wanted to come up with something that transcended language. Names like *Facebook* and *Google* do not change regardless of what language they are in, whether it's English, French, or Arabic. We just had to come up with a way to brand the online repository in the same way. Ultimately, we gave Yassine a list of potential names we had developed from some of the interviews we had conducted in the previous section of our methodology. He came to the decision that the repository should be called *Lighthouse* because it would shine a light on neurodiversity in Morocco.

### **3.2.5 How Lighthouse was Formatted**

Lighthouse was ultimately put onto Educall’s main page. This provided both easy access to the repository for parents and teachers that already knew about Educall, and it also made updating and maintaining the repository easier for Educall. Lighthouse was divided into six main sections based on our background research along with what we learned from the previous section of our methodology. The first is an overview that includes background information about the development of the repository. The second entails general information about signs of neurodiversity and some specific examples of neurodiversity. The specific examples of neurodiversity include ADHD, dyslexia, and dyscalculia. In the third, users get to select what they are accessing the site as, a parent, teacher or student, and based on what they select, are given descriptions of how they can be impacted by neurodiversity in their lives. Supportive materials for parents, teachers and students are contained in the fourth section. These materials include discussion boards for parents and teachers, a library of helpful documents and information, podcasts relating to the topic of neurodiversity, contacts of professionals in neurology and psychology, and games that help with the gamification of education and increasing cognitive skills. The fifth contains commonly asked questions with answers. Finally, the last section provides users a way to contact the maintainers of the online repository. With all of these implemented into the repository, those who have access to the website should have the proper amount of information to feel informed on the topic and have a new outlook on neurodiversity.



### **Incorporating an Overview of the Repository**

The overview section contains background information about the development of the repository. It is divided into four subsections. The first is a description of Lighthouse that includes a general overview of what the repository is and what it focuses on. The next is a brief description of the individuals who contributed to forming the repository. Following that is a page that recognizes all the partners that helped in the development of this project. Finally, there is a section containing the methodology of how the team collected the information in the repository, and how the repository was designed.

### **Including Information about Neurodiversity**

The section of neurodiversity is divided into two main categories. The first is different potential signs of neurodivergence. These signs are not specific to any one type of neurodiversity, but rather identifiers of neurodivergence in general. These signs do not guarantee a diagnosis, but should warrant further research and communication with experts. The second category is each different neurodiversity we researched. We researched ADHD, Dyslexia, and Dyscalculia, but intended for the repository to be able to contain more different types of neurodiversity in the future. Therefore, each section about a different neurodiversity contains the same format for continuity. Each section contains: a description of what that specific neurodiversity is, an uplifting video that helps destigmatize that specific type of neurodiversity, and tips and strategies for raising and educating a child or student with that specific neurodiversity.

### **Adding a Personal Section for Teachers, Parents, and Students**

This section of the repository asks users to identify themselves as either a parent, teacher, or student. They will then be brought to a page that provides a description of how a user would be affected by neurodiversity, based upon what they selected. The goal of this section was to help break down stigmas about neurodiversity where they start. By providing parents, teachers, and students information about how neurodiversity impacts them, they can be better prepared and equipped with knowledge about how to effectively respond to neurodivergence. Yassine also intends to collect stories from parents, teachers, and students positively impacted by neurodiversity and include the stories in their respective sections.

### **Building a Section of Supportive Materials**

This section is divided into five sub-sections of supportive materials. The first gives access to discussion boards made for parents and teachers where they can communicate with each other. The second is a library of different documents that are written resources with information about neurodivergence. The third is a collection of podcasts that are audio resources with information about neurodivergence. The fourth is a section with professionals in the field of neurodiversity, and finally the fifth section is a collection of educational games.

We created the discussion page using Google Jamboard and Whatsapp. Through these discussion boards, parents and teachers can communicate with each other about techniques they have found useful for their students and kids. We designed a Jamboard and Whatsapp for each language featured in the repository so that it is accessible for anyone in Morocco regardless of what language they speak. The primary goal was to provide a space where parents and teachers can learn more through each other, and help them through unique and challenging scenarios.

The library section contains a wide variety of books and documents that cover a range of topics related to neurodiversity. For parents of neurodiverse children, there are books that provide guidance on how to best support their children and navigate the challenges that may arise. Teachers can also find resources to help them better understand and accommodate neurodiverse students in their classrooms. For students who identify as neurodiverse, there are books and documents that provide insight into their experiences and offer practical advice for navigating life with a neurodiverse condition. These resources can be particularly helpful for students who are struggling to cope with their condition or who are looking for ways to better understand themselves. Any written resources we received from experts are also included in this section.

The podcasts section contains a wide variety of podcasts that cover a range of topics related to neurodiversity. For parents of neurodiverse children, there are podcasts that provide guidance on how to best support their children and navigate the challenges that may arise. Teachers can also find resources to help them better understand and accommodate neurodiverse students in their classrooms. For students who identify as neurodiverse, there are podcasts that provide insight into their experiences and offer practical advice for navigating life with a neurodiverse condition. These resources can be particularly helpful for students who are

struggling to cope with their condition or who are looking for ways to better understand themselves. Any audio resources we received from experts are also included in this section.

The professionals section of the repository was initially conceptualized as a way to give credit to the experts we interviewed, and to show where the information in the repository came from. However, after determining the status of inclusive education in Morocco via stakeholder analysis, we realized this section had more potential uses. From the focus group of masters students and parent interviews we learned that awareness of different learning styles in Morocco was not widespread, and many were shocked to learn speech and language therapists existed in Morocco who could deal with these issues. Hence, the professionals section evolved to include a range of experts in the neuropsychology field for parents and teachers to contact.

The section of educational games is specifically created to cater to the learning needs of primary school children. These games are designed to enhance the cognitive skills of young learners and help them develop critical thinking, problem-solving, and decision-making abilities. Additionally, there are games that Educall has used in its gamification of education that have been included in this section. Overall, there are various types of educational games, such as puzzles, quizzes, and simulations, which can be accessed online or downloaded onto a computer or mobile device. These games are designed with colorful graphics, animations, and sound effects, which make them more appealing and interesting to children.

### ***Developing a Section of Frequently Asked Questions***

While interviewing parents and teachers, we came across many of the same questions. This prompted us to include a section of frequently asked questions. After analyzing the interviews we conducted, we generated a series of questions summarizing a majority of the information parents and teachers wanted to know regarding neurodiversity. We separated the questions into three sections: questions parents would ask, questions teachers would ask, and questions students would ask. Then using the information we obtained from the subject experts and through independent research we provided answers to each of the questions.

### ***Including a Section to Contact Educall***

This section was designed with the goal of service and support of the repository's users. It will provide direct access to the maintainers of the repository. Users will be able to contact the

maintainers via a whatsapp, a lighthouse email, and additionally the Educall phone number. In addition to this section users will also be able to communicate with a chatbox regarding any questions they have.

### **3.2.6 Maintaining and Updating Information**

Educall and Yassine have total access to the repository and can make any desired changes or updates. Along with the feedback received from the parent and teacher meetings, we wanted Educall to improve the repository in as many ways as possible. To help with this, we have left the repository in a state where it is easy to update and maintain. For example, the format we have selected makes it easy to continue to add descriptions of learning styles in order to improve the education of each student. It is also simple to add any additional games to the student section or add any newly discovered resources to the parent and teacher sections. The amount of customization and improvement is limitless, making the repository an influential resource in improving inclusive education.

## **3.3 Demonstrating the Repository to Teachers and Parents for Feedback**

Educall had informed us that they were looking to take over the repository once our project has concluded. The fact that they wished to continue our work was very important to us and was a driving factor in our decisions, toward the end of the project. We had created a solid first iteration of the repository, but new improvements could be made. To make the process of taking over the repository as simple as possible for Educall, we decided to get feedback from the teachers and parents ourselves, leaving Educall with positives and negatives regarding the current state of our repository. Leaving them with a review of the current website was important for us to do before finalizing our project.

### **3.3.1 Obtaining Teachers' Feedback on the Repository**

With teacher's being one of the two most important parts of ensuring a child's proper education, their opinion of our repository is valued highly. We wanted to make sure that not only was the repository's layout and structure user friendly and easy to navigate, but that the information was also easy to understand. We met with the Vision School teachers again since they were the ones we had originally based the repository on. The discussion questions used

during these conversations are outlined in Appendix G. Similar to the teacher interviews, we met with the teachers one on one to get their individual opinion uninfluenced by the others. We hope that their feedback and suggestions will be beneficial to Educall for the further development of the repository.

### **3.3.2 Obtaining Parents' Feedback on the Repository**

The other most influential half of a child's education comes from their parents. After discussing with parents at the event located at Vision School, we included what they wanted to see in the repository. At this follow up meeting with parents we hoped to further their input on the repository by gathering their feedback and opinions. We wanted to see if they thought the repository was effective at answering their questions and wasn't difficult to maneuver through. All of the critiques were delivered to Educall for future editions of the repository.

## **4: Results**

This section details the findings and results of our three main objectives. The first section recounts our interviews with stakeholders and our analysis of their feedback for incorporation into our repository. The second section goes through the final layout of the repository and all the sections included in it. The third section contains the feedback we received from parents and teachers after they viewed the final result of our work.

### **4.1 The Status of Inclusive Education via Stakeholder Input**

The results we acquired from our time spent interviewing and discussing with stakeholders was imperative to our final design of the repository. Every single comment and concern we took into consideration during the process of developing the website in order to fully meet the needs of all those involved with the project. In this section we have outlined everything we learned from each stakeholder and described why the information is relevant to our repository.

#### **4.1.1 Information and Resources Gathered from Neurological Experts**

The experts we interviewed were a vital first step to our project. Not only were they able to provide us resources and information to include into the repository, but the amount of background information about neurodiversity in Morocco was invaluable. Our comprehension of neurology, diagnosis, and therapy all greatly improved after meeting with these experts. We felt more confident in our knowledge surrounding these topics, which allowed us to more effectively construct the repository.

##### **4.1.1.1 Orthophoniste Interview (Dr. Zineb Alaoui)**

Dr. Zineb Alaoui is a language and speech therapist who works with kids and adults, mainly on written and verbal language. From Dr. Alaoui, we learned about the diagnosis process for children with different learning styles, with a main focus on dyslexia. She mentioned to us that dyslexia is the one of the easiest neurodiversities to diagnose, since it has been recognized for some time, and has key signs to look out for, especially in younger children. When attempting to identify triggers in a child with dyslexia an important concept to consider is

milestones. The signs vary depending on the age and circumstances of each child, but still apply as the child continues to grow. If a student is not reaching proper speech and language milestones compared to other kids their age, it could be a sign they have developed dyslexia. Some of these signs to look out for are a **delay in speech, repeated stuttering, not speaking in general, unable to understand patterns or sequences, and confusing concepts like past, present, and future**. If a child is not hitting these milestones in a reasonable timeframe, then it is recommended to visit a speech and language therapist to determine if there is an issue. It is important to diagnose a child early, around the preschool years is when these signs may start becoming apparent. If not caught early these issues may begin to stack on each early making it difficult to catch up in school.

In her diagnosis, Dr. Alaoui mainly uses French tests and documentation as a baseline in order to properly diagnose and help these students with language difficulties. These French tests are not always applicable to situations in Arabic. The French words that are often confused in a child with dyslexia are not the same as the commonly confused Arabic words, meaning Dr. Alaoui has to apply the French research and documentation in order to correspond with the Arabic speakers. The tests Dr. Alaoui provides her patients usually consist of a document placed in front of the child with various pictures. She will then spell out a word, and the child is asked to point to the picture of the word which was spelled. Simple drills like this help build the child's ability and confidence in speaking, reading, and writing.

Dr. Alaoui also works at the Vision school where she works to help identify the children who are struggling and assists those who have a diagnosis. This made it easier for us to contact her and gather resources she believed would help in the repository. She provided us with charts that can allow teachers and parents to check off signs their children may be exhibiting and makes an educated conclusion as to whether the child should seek out help from a professional. She also provided us with examples of tests that she provides students during her sessions. We asked if we could be provided with her programs, but she explained how most of these documents required paid access to the websites and couldn't be directly linked to the repository.

Overall this was an extremely informative interview that provided us with lots of information which we inserted into our dyslexia section. The resources that she provided us also were very valuable and will help parents and teachers better understand how to identify signs that may point to a child being at risk.

#### **4.1.1.2 Neuropsychologist Interview (Dr. Alham Moutez)**

Dr. Alham Moutez is a clinician neuropsychologist who evaluates intelligence, working with language and dyslexia specifically, working towards standardization norms in Morocco (CPM 47). She emphasized the importance of early diagnosis, and that identifying a baseline will make it easier to diagnose students.

For students with ADHD, Dr. Moutez suggested that the student should work with special educators and experts and that it can be difficult for the parents to accommodate their kid due to the lack of understanding. In her practice, she utilizes Procomp, which is a device that monitors brain activity while performing different tasks. They can use this to set a standard for brain activity and track the progress of the student throughout their development. Dr. Moutez also suggested PIFAM (**Programme d'intervention sur les fonctions attentionnelles et métacognitives**). For parents, she states that the best way that they can help their students is by motivating them and not putting them in embarrassing situations. Parents should accept and love their child, and have a relationship outside of school such as cooking together and doing other activities that are not based around school.

For our repository, Dr. Moutez suggested that we look into providing open source software, designed to help students with dyslexia and dyspraxia with their reading, writing, and speech. We feel that the game section will meet this recommendation by providing students with entertaining ways to practice reading and writing. She also stated that teachers currently feel overwhelmed in the classroom and she thought that providing the teachers a list of accommodations will be beneficial for the students.

#### **4.1.1.3 Psychotherapist Interview (Dr. Aasmae Boumediane)**

Dr. Boumediane is a family doctor who specializes in working with children and women. She uses validated psychotherapies to help those who are affected with ADHD, anxiety, and depression. Dr. Boumediane began her work in 2017 and has received 9 diplomas throughout her training. The students she works with are introduced to her in a variety of ways, either via schools, pediatricians, or parents. The work she does is focused on attempting to break habits and form new routines based on new cognitions. This especially relates to ADHD since forming productive habits and breaking away from distractions is imperative to help with learning. This type of therapy also helps with behavior and trauma. For example, if a child cannot sleep alone,



it is usually a cognitive issue that needs to be identified and reprogrammed. Finding the issue will result in positive lifestyle changes, ultimately resolving the issue. Advice taken from her methods of therapy were included into the ADHD section of our repository.

A problem that Dr. Boumediene wanted to outline is the importance of teachers and parents when it comes to helping a child with different learning styles. According to her, there are two types of parents: the parents that quit because they get frustrated the therapy sessions are not working within the first few sessions and the parents that get overly excited the sessions are working and stop sending their child. Both of these parents are not fully trusting the process that was recommended by the therapist. Dr. Boumediene believes that having parents fully committed to trusting professionals while providing love and support is vital for a child's success.

She also provided us with recommendations for teachers to assist students with ADHD. The recommendation that stood out to us the most was to not penalize the student for acting up or showing signs of hyperactivity. The worst thing to do would be to isolate the child from others or take away free time which will later help them focus in class. Things teachers can do to support these students include: seating them in the front of the class away from windows or doors, seating them next to students who are generally calm and quiet during class, and providing the child time to move around outside of class time. Another suggestion was to have a younger student present while taking an exam in order to help any student struggling to stay focused. This way the student isn't getting any additional help material wise, they are just getting help staying on task. Dr. Boumediene was a tremendous help to us, specifically filling out the ADHD section of the repository. She suggested adding voice recordings on the website and images of MRI scans showing the successful effects of therapy.

#### **4.1.1.4 Pedopsychologist Interview**

This expert preferred to remain anonymous, but was still able to provide us with helpful advice moving forward with our project. We are still able to outline their area of expertise without revealing their identity. The expert we spoke to studied medicine in both Rabat and France in order to assist within hospitals. They work with kids before and after diagnosis, helping to recognize learning differences and improving the child's ability to learn. The process that they use to diagnose students is by attempting to eliminate any doubt before making the final

decision. The way they ensure this is by following set programs, which they outlined mainly are titled Connors and TEACH. Connors was actually mentioned before in our interview with Dr. Boumediene as a program she uses for diagnoses. The expert was very passionate in their belief that the best method to help children struggling with different learning styles was professional assistance. They encouraged parents and teachers to create a loving and positive environment for the child, while following the instructions of professionals. In addition to this, they stressed the importance of not grouping the learning styles together, and making sure each learning style gets appropriate help from the correct specialist. Recommendations they gave for the repository were to include a section to reach out to professionals and to include the opinion of more medical collaborators. We had planned to include the professional section into the repository already, but did not have time to reach out to any additional experts in the medical field for their feedback.

#### **4.1.2 The Needs of Primary School Teachers**

The feedback we received from the Vision school teachers served as the backbone of our repository. As one of the main stakeholders in our project, their feedback and knowledge was incredibly important for us to consider while developing the website. Even though all of the teachers interviewed worked at the Vision school, not all of them have had the same training or experiences during their time as a teacher. Some have worked at other schools before where they received official training to work with neurodiverse students. Overall, their understandings of neurodiversities varied. Some teachers had experiences working with students who had dyslexia or ADHD and other teachers had no prior knowledge about how to teach a student who is neurodivergent. The teachers interviewed suggested that our repository should include a main section focusing on **defining neurodiversity**, how a teacher can spot **indicators of neurodiversity** amongst their students, as well as how they can **encourage inclusive learning** in their classroom.

The teachers suggested having a **space where other teachers can communicate amongst themselves** about neurodiversity and practices they have seen beneficial in their classroom. This would be beneficial as even some teachers who have heard of neurodiversity, have not had experience teaching a child with a different preferred learning style.

The teachers we interviewed worked at the Vision School, a private school in Rabat that focuses on encouraging inclusive education in every classroom as well as making learning fun

through “gamification”. This term refers to the schools use of games and physical activities to appeal to more preferred learning styles of students. To achieve their goal of a fully inclusive learning space, teachers at the Vision School recommended that we include a space in the repository for **teaching techniques** and possible **curriculum catering to more students' preferred styles of learning**.

#### **4.1.3 Educall’s Means of Promoting Education for All**

Dr Yassine Ettaylal and Mohammed Benhsain provided services to increase inclusive education for kids in difficult situations. Through these student services, they began to understand that **focussing only on the student is not the solution**. More members of the educational ecosystem had an impact on the classroom and the students' life, including family support and their teachers' understanding of how they learn.

Educall designs programs for all members of the educational ecosystem. This includes teachers, by partnering with CEESAY center, which focuses on expanding teachers' understanding of learning styles. They also have programs for parents that focus on how to best support their student outside of the classroom, with emphasis on the negative impact that added pressures at home can have. Following their programs, they suggested we make a section for **teachers about how neurodiversity affects a students learning style** and a section for **parents describing how they can best support their kid** from home without overwhelming them.

Educall will be maintaining the website, to ensure the information is up to date. They requested that the **repository would be made using Strikingly** so it can be integrated into their current website.

#### **4.1.4 The Gaps in Parent’s Understanding of Neurodiversity**

Educall and the Primary Vision School hosted a *Digital Literacy 4 Parents Day*, where our team was able to explain the objective of our project and have parents provide feedback. We met with 6 parents in total, all of whom had at least one child attending the Primary Vision School. Although none of the parents had students who were directly affected by Dyslexia, Dyscalculia, or ADHD, each of them expressed their interest in learning more about how these learning styles affect students differently. We asked each of them if there was anything they would like to see in the online repository that was not previously discussed. Half of the parents

suggested that we add a **way for parents to communicate** with each other about the different styles of learning as this is something that can be easily overwhelming. Two of the parents also suggested that we could have a **page dedicated to the specialists** they can contact to learn more about their child's unique learning style.

#### **4.1.5 The Master Student's Knowledge of Neurodivergence**

The Mohammed V University is the only place in Morocco where students can receive a masters degree in both teaching and language simultaneously. Because of this, the students originate from all over Morocco with distinct backgrounds and opinions. This diverse group of students were able to provide us with a tremendous amount of information that we were not expecting. The main surprise we encountered was how varied the class' knowledge was regarding neurodiversity. Some of the class knew all about ADHD and dyslexia, while some had never even heard those words before. They expressed how they desired a way to standardize the educational process in terms of neurodivergent education. They believed all teachers should be adequately prepared to handle any situation with a neurodiverse student. Not only should teachers be prepared, but teachers should be equally prepared to work with students that have any learning style. They decided it was unfair to the students if each teacher didn't have similar training and experience to handle these situations.

The students in general were frustrated at the lack of information they received about learning styles in their training. They thought that a repository, similar to ours, would be a fantastic resource for all teachers to have. No matter the level of training, all teachers who have access to the repository will have basic knowledge of what neurodiversity is and what to do if a student is expressing any signs. The students had some suggestions as to how we could better educate with the repository. The first suggestion was to have an **informational page containing descriptions and videos** to inform teachers what each learning style is and how to help students who were diagnosed. The second recommendation was a **frequently asked questions (FAQs) section** where any common questions can be answered for easy access and viewing. Both of these ideas were implemented into the repository since the students seemed so passionate behind these additions.

Beyond inclusions into the repository, the master students wanted to make sure we were aware of two major factors that may affect our repository. The first is the **distinction between**

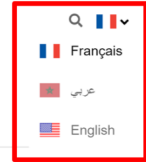
**private and public schools.** Private schools have a focus on the individual needs of students and often hold meetings with parents to make sure any student falling behind is getting the proper help. This is not the case for public schools where the main focus is on the class as a whole and pushing through the syllabus. The masters students wanted us to provide the repository to both private and public school teachers to help as many neurodiverse students in as many situations as possible. Secondly, just as most of the experts suggested the students, the students wanted the repository to explain to parents the importance of support and understanding. They said if parents are not advocating and helping to improve their child's education, the teachers are only doing half of the job. With the multiple languages and easy availability of the repository we plan to give complete access to parents, as well as, teachers from both public and private schools.

## **4.2 Repository of Educational Resources**

This section contains information on the repository we created during our time in Morocco, including content, organization, and languages. Attached are figures to provide better understanding of the repository's layout.

### **4.2.1 The Languages the Repository and Informational Guide Feature**

Our repository is being implemented on Educall's main website. The information was created in English, as this is the language we understand the best. With the help of Educall, we translated this information into French and Modern Standard Arabic (MSA). The home page will be in French as this is the language of Educall's main website and a tab will allow the user to switch between the languages.



## Educall Lighthouse

Bienvenue sur **Educall Lighthouse**, une initiative qui met la lumière sur les enjeux les plus importants du monde de l'éducation. Nous sommes convaincus que pour améliorer la qualité de l'enseignement et de l'apprentissage, il est essentiel de partager des bonnes pratiques et des connaissances approfondies sur une variété de sujets éducatifs.

Notre mission est de rassembler des experts de l'éducation, des enseignants, des parents et des étudiants pour explorer des thématiques telles que les approches pédagogiques innovantes, les stratégies d'apprentissage efficaces, les technologies éducatives, l'inclusion et la diversité, ainsi que de nombreux autres sujets pertinents.

Nous croyons que l'éducation est l'une des clés pour construire un monde meilleur, et nous sommes déterminés à contribuer à cet objectif en fournissant un espace de discussion et de partage d'informations pour tous les passionnés de l'éducation.

*Figure 4.2.1 Educall Lighthouse Language Selection*

The Educall Lighthouse home page in French, with the tab to switch between French, English, and Arabic, highlighted in the red box (Figure 4.2.1.1).

## 4.2.2 What is Included in the Informational Guide

Our Informational Guide can be printed and folded into a pamphlet with four pages. This pamphlet is an addition to our online repository, where people without internet access can learn about our project and what it means to be a neurodiverse student.

# Advancing Education for Neurodiverse Students in Morocco: A Repository for Teachers, Parents, and Students



VISION+SCHOOL



## WPI Inclusive Education Sponsored by Educall

*Figure 4.2.2.1 Front page of Informational Guide*

The first is our introduction page (Figure 4.2.2.1) where we state the title of our project as well as WPI and our sponsors, the Vision School and Educall.

## Project Goals

To provide resources to parents, teachers, and students with information regarding the different types of neurodiversity commonly present in Moroccan primary schools. Additionally, to reduce the negative stigmas and stereotypes commonly associated with neurodivergence.

## Professional Resources

### Dr. Zineb El Alaoui

- Speech Therapist
- Phone: 06 69 21 14 71
- E-mail: z.alaoui.ortho@gmail.com

### Dr. Aasmae Boumediane

- Child Psychotherapist
- Phone: 06 72 49 43 78
- E-mail: Aasmae.boumediane@gmail.com

### Dr. Ahlam Moutez

- Neuropsychologist and Clinician
- Phone: 06 58 64 40 24

## What is Neurodiversity?

Neurodivergence refers to a broad range of neurological conditions and learning styles that affect a person's perception, behavior, and ability to process information. Neurodivergent students may have challenges with attention, communication, social interaction, and executive function, which neurotypical students might not experience themselves. Some neurodivergent students may also have sensory sensitivities, such as aversion to loud noises, bright lights, or certain textures, which can make the educational environment overwhelming or distracting.

## Common Learning Styles:

It is important to understand that neurodivergence is not caused by laziness, lack of intelligence, poor vision, or social circumstances

### ADHD

ADHD is a common type of learning style in younger children that includes symptoms such as difficulty focusing, hyperactivity, and impulsive movement.

### DYSLEXIA

Dyslexia is a neurological disorder that impairs someone's ability to read. Symptoms of dyslexia can include difficulties with spelling, visual-verbal responding, and manipulating sounds.

### DYSCALCULIA

Dyscalculia refers to a difficulty in understanding mathematical concepts and number based information, generally in a child's developmental years.

*Figure 4.2.2.2 Inside pages of Informational Guide*

The inside of the pamphlet has two pages that contain (Figure 4.2.2.2). On the left side we state how we have created an online repository for parents, teachers and students in addition to this guide to provide more information and resources about neurodiversity. There are also contacts provided for specialists in this field that a user can contact with further questions. On the right side, there is a brief statement about what neurodiversity is as well as defining some common learning styles (ADHD, Dyslexia, and Dyscalculia).



# Meet our Team



Ethan Wolf  
Lucy Buda  
Nick Latsis  
Jacob McDonald

## CONTACT US

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+212 770-472548

Team Email



*Figure 4.2.2.3 Back page of Informational Guide*

The back of the pamphlet (Figure 4.2.2.3) has contact information for the team and Educall. There are QR codes linking to Educall's Lighthouse page and the email of the WPI team.

### 4.2.3 Strikingly as a Platform

Strikingly was the platform used to create our website. This application was suggested to us as our sponsor, Yassine, has used it to create the original Educall website. Educall also had access to a professional account, allowing us to use many more features, including a domain name, chat option, and a search option.

### 4.2.4 What is Lighthouse

After the creation of our website, Educall came up with the idea of incorporating our information into a new section of their website. They wanted to shine a light on different topics in the educational realm. Our repository was the first element added. Lighthouse has its own subsection on the educall website. Upon navigating to the lighthouse page ([www.educall.ma/lighthouse](http://www.educall.ma/lighthouse)), anyone can find information on dyslexia, dyscalculia, and attention-deficit/hyperactivity disorder (ADHD). We are convinced that to improve the quality of teaching and learning, it is essential to share good practices and in-depth knowledge on a variety of educational subjects.



*Figure 4.2.4 Educall Lighthouse Main Page*

The section of Educall’s website where our work is published can be viewed under the “Lighthouse”. Selecting this tab displays the Lighthouse home page as seen in Figure 4.2.4. This page gives a brief overview of the goals of Educall and their Lighthouse section. This includes

shedding light on the most important issues in the world of education and bringing together education experts, teachers, parents, and students to explore these topics.

#### **4.2.5 The Format of Lighthouse**

This section goes over the formatting and organization of our final repository which can be accessed via this link: [www.educall.ma/lighthouse](http://www.educall.ma/lighthouse)

Aperçu >

Neurodiversité >

Je suis >

J'ai besoin de >

FAQs >

Contactez-nous >

*Figure 4.2.5 The Sections of the Lighthouse Repository*

The Lighthouse page can be broken down into several sections shown in Figure 4.2.5 via the Lighthouse drop down menu of the repository. These sections include: Overview, Neurodiversity, I am, I need, FAQs, and Contact us. From these headings, users pick a heading, then view their subheadings.

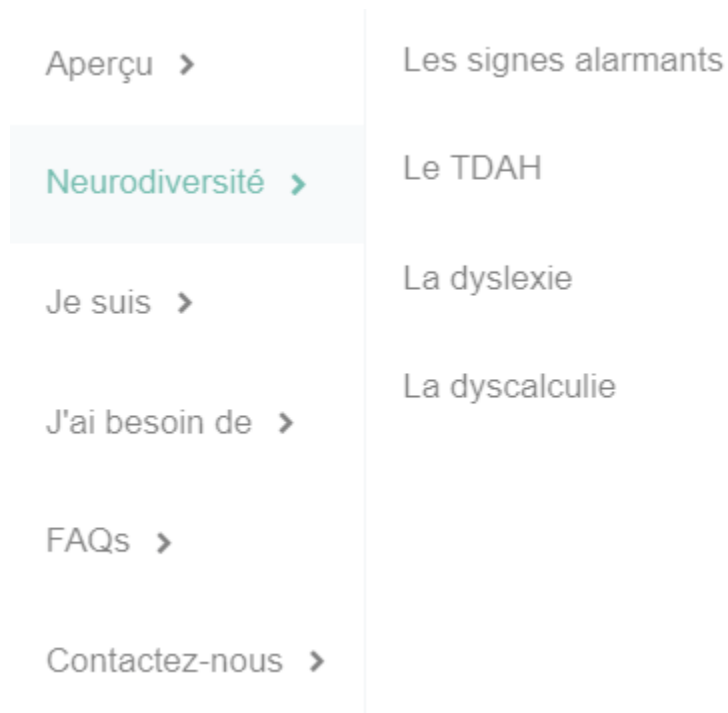
## Overview



*Figure 4.2.5.1 Overview Subheadings*

When hovering over a section, multiple subheadings will appear. In Figure 4.2.5.1, when hovering over the Overview tab, four subheadings will appear. These are: Lighthouse, Research Team, Key Partners, and Methodology.

## Information about Neurodiversity



*Figure 4.2.5.2 Neurodivergency Tab*

In Figure 4.2.5.2, when hovering over the Neurodiversity tab, four subheadings will appear. These are: The signs of neurodiversity, ADHD, Dyslexia, and Dyscalculia.

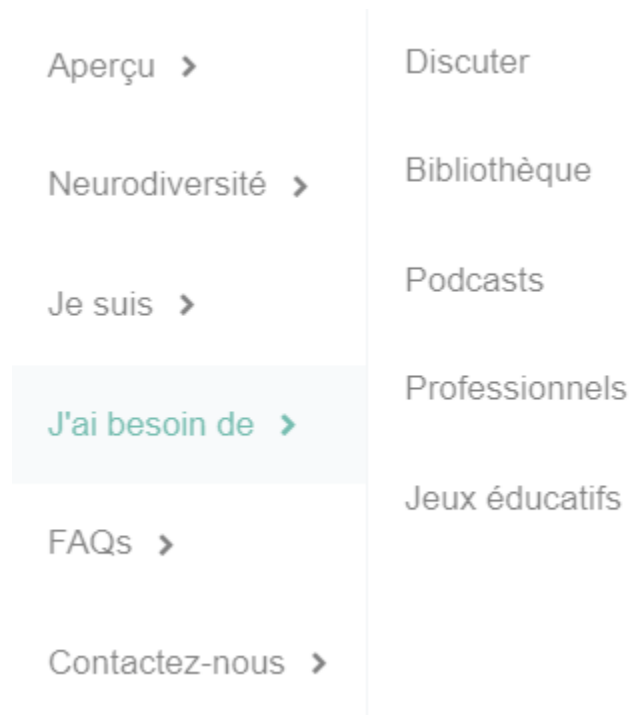
**Personal Section for Teachers, Parents, and Students**



*Figure 4.2.5.3 I am a Parent, Teacher, or Student Tab*

In Figure 4.2.5.3, when hovering over the I am tab, three subheadings will appear. These are: a parent, a teacher, and a student.

**Section of Supportive Materials**



*Figure 4.2.5.4 I Need Tab*

In Figure 4.2.5.4, when hovering over the I need tab, five subheadings will appear. These are: Discussion, Library, Podcasts, Professionals, and Educational games.

## Including a Section of Frequently Asked Questions

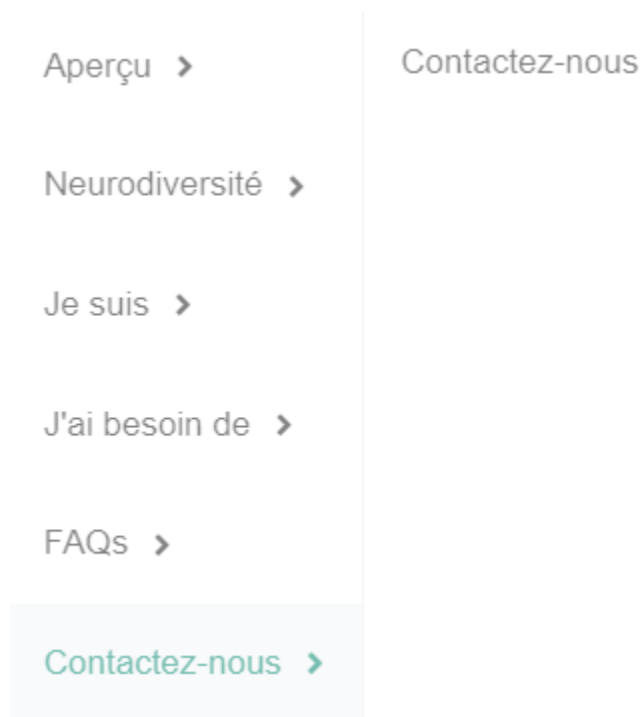


*Figure 4.2.5.5 Frequently Asked Questions Tab*

In Figure 4.2.5.5, when hovering over the FAQs tab, three subheadings will appear. These are: a parent, a teacher, and a student.



## *Section to Contact Educall*



*Figure 4.2.5.6 Contact Us Tab*

In Figure 4.2.5.6, when hovering over the Contact Us tab, one subheading will appear. This is the contact us tab, containing a space where the user can reach out to educall for any assistance they require.

#### **4.2.6 Maintenance and Updates of Information**

This website needed to be able to be changed, as information regarding learning styles and neurodiversity is constantly evolving. As we only focused on the three most common neurodiversities, we wanted the site to be able to incorporate other information on more neurodiversities. This website has the ability to be fully updated at any time, by anyone with the link to the Strikingly account, namely our sponsor.

#### **4.3 Demonstrating the Repository to Teachers and Parents for Feedback**

Feedback on our work was necessary to determine if our repository would serve the stakeholders. For this, we interviewed six different vision school teachers. Two of the teachers also had children attending the school, making them vision school parents as well. Overall, the feedback was very positive. These teachers were not experts, however they agreed that the information included would greatly serve their needs as educators. The teachers and parents agreed that our website was simple to access, had clear organization, was easy to navigate, and contained clear information. Many of these teachers we had conducted initial interviews with, and they were happy to see that everything discussed in the interviews was incorporated into the website. One teacher was specifically excited about the professional resources section, as they could now easily reach out with questions or for advice. Another teacher was curious as to when the site would be finalized and made public, as they wanted to explore each section in depth on their own. Upon asking if anything should be added or rearranged, many said that we had done a perfect job and had no notes to add. Two teachers, however, did recommend features to be added. One teacher thought it would be beneficial to add an email alias for private or specific questions, as the jamboard and whatsapp groups are not anonymous. Another teacher recommended that we lengthen the answers to some of the frequently asked questions to include more in depth information. Both of these recommendations were added to the final website. We created a specific lighthouse email for questions, as well as more information in the frequently asked questions section.

## **5: Conclusion and Recommendations**

In this final section, we will present our conclusions and provide insightful recommendations for the future of the project. Specifically we will summarize the work we have done and highlight its potential impact. Additionally, we will outline ways in which future teams can improve the repository and discuss the next steps Educall has planned for Lighthouse. The success of the project isn't limited by our team alone, as Educall and hopefully future teams will continue to develop the website for many years to come.

### **5.1 Summary of Current Work**

After extensive research into inclusive education in Morocco and the development of a repository of educational resources, it is clear that promoting inclusivity in education is crucial for the success of all learners. Our research has highlighted the significant challenges that exist in creating an inclusive educational environment in Morocco, such as inadequate resources, lack of teacher training, and societal attitudes towards students with neurodiversity. Despite these challenges, our study has demonstrated that with the right support and resources, inclusive education can be successful in Morocco. Based on the feedback we received from parents and teachers, our repository of educational resources has the potential to be a valuable tool in promoting inclusive education throughout Morocco.

### **5.2 Expanding Current Work**

Our repository contains information about what neurodiversity and the different learning styles are, as well as information for parents, teachers, and students about ADHD, dyslexia, and dyscalculia. The team had a limited time in Morocco, and we were only able to focus on these three types of neurodiversity. Future teams can expand the repository to include other types of neurodiversity as well as giving more in depth information into the different styles of learning.

The team conducted interviews with six teachers (two of which were parents) going over the layout of our final repository. This was a small sample size and these teachers all had experience working with websites often. Future interviews or focus groups could be conducted to ensure the ease of use of the repository. Parents with little knowledge of the project beforehand

should be interviewed as they would provide feedback from someone who had no experience with neurodiversity.

### **5.3 The Future of Educall Lighthouse**

There are multiple details our team would recommend looking into for the future. For our sponsor Educall, who will be maintaining the website, future improvements to the site's functionality and content can attract more first time users. The Lighthouse's online infrastructure will be updated by June 2023. The current repository contains spaces where parents and teachers can interact with each other through WhatsApp chats and Jamboard pages. We strongly encourage Educall to host an additional space on their website where parents and teachers can interact without needing to use these other sources. Developing a chat feature directly located on Educall's website would be more secure and easier to use.

Additionally, neurodiversity and inclusive education are becoming more recognized, especially within Moroccan education. As more information and research continues towards these subjects, Educall and their Lighthouse program should update the repository to reflect the most accurate information for parents, teachers, and students.

Currently, the repository has games that can only be accessed online. Educall is looking to add games that do not require the internet so parents can interact with their kids at home through engaging and educational activities. We recommend creating a separate Informational Guide, dedicated to these games so people can learn and engage with them in spaces not requiring internet access.

## References

- Achamrah, M. (2022). *Examining Inclusive Pedagogy and practice: Moroccan primary teachers' attitudes and practices in Moroccan primary schools*. *World Journal of Advanced Research and Reviews*, 14(2), 181–184.  
<https://doi.org/10.30574/wjarr.2022.14.2.0413>
- Arbia, A., Kouchou, I., Kaddari, F., Hajji Hour, R., & Elachqar, A. (2021). Evaluation of the analysis of classroom practices of future Moroccan teachers. *International Journal of Engineering Pedagogy (IJEP)*, 11(3), 99. <https://doi.org/10.3991/ijep.v11i3.20493>
- Baumer, N. (2021, November 23). *What is neurodiversity?* Harvard Health. Retrieved March 1, 2023, from <https://www.health.harvard.edu/blog/what-is-neurodiversity-202111232645>
- Blume, H. (1998, September 30). *On the neurological underpinnings of geekdom*. The Atlantic. Retrieved March 1, 2023, from <https://www.theatlantic.com/magazine/archive/1998/09/neurodiversity/305909/>
- Blume, H. (1998, September 30). *On the neurological underpinnings of geekdom*. The Atlantic. Retrieved March 1, 2023, from <https://www.theatlantic.com/magazine/archive/1998/09/neurodiversity/305909/>
- Centers for Disease Control and Prevention. (2023, January 25). Learn about attention-deficit / hyperactivity disorder (ADHD). Centers for Disease Control and Prevention. Retrieved Feb 6, 2023, from <https://www.cdc.gov/ncbddd/adhd/index.html>
- Centers for Disease Control and Prevention. (2022, August 9). What is ADHD? Centers for Disease Control and Prevention. Retrieved February 20, 2023, from <https://www.cdc.gov/ncbddd/adhd/facts.html#:~:text=ADHD%20is%20one%20of%20the,%20or%20be%20overly%20active.>
- Dyscalculia. Learning Disabilities Association of America. (n.d.). Retrieved Feb 23, 2023, from <https://ldaamerica.org/disabilities/dyscalculia/>
- Dyscalculia: What it is, causes, symptoms & treatment. Cleveland Clinic. (n.d.). Retrieved Feb 4, 2023, from

<https://my.clevelandclinic.org/health/diseases/23949-dyscalculia#:~:text=What%20is%20dyscalculia%3F,of%20people%20without%20this%20disorder.>

Fassi, A. E. (1955). The Present Situation in Morocco. *Pakistan Horizon*, 8(2), 327–330.  
<http://www.jstor.org/stable/41392176>

Foss, B. (2016). *The Dyslexia Empowerment Plan: A Blueprint for Renewing Your Child's confidence and love of learning*. Ballantine Books.

Grzeskiewicz, H. (2020, October 29). *Yassine Ettayal: Bringing together learning, technology and fun - Yunus&Youth*. Yunus & Youth. Retrieved February 1, 2023, from <https://yunusandyouth.com/yassine-ettayal-bringing-together-learning-technology-and-fun/>

Individuals with disabilities education act (IDEA). Individuals with Disabilities Education Act. (2023, January 30). Retrieved January 30, 2023, from <https://sites.ed.gov/idea/>

Jones, C. (2022, March 31). Parents' guide to 504 plans and IEPs: What they are and how they're different. EdSource. Retrieved January 30, 2023, from <https://edsources.org/2022/parents-guide-to-504-plans-and-ieps-what-they-are-and-how-theyre-different/669493#:~:text=What's%20the%20difference%3F,as%20speech%20or%20Occupational%20therapy.>

Khochen-Bagshaw, M. (2020). Inclusive Education Development and Challenges: Insights into the Middle East and North Africa Region. *Prospects*, 49(3-4), 153–167.  
<https://doi.org/10.1007/s11125-020-09507-9>

Llorent-Bedmar, V. (2014). Educational reforms in Morocco: Evolution and current status. *International Education Studies*, 7(12). <https://doi.org/10.5539/ies.v7n12p95>

Mohamed, A. (2022). Examining Inclusive Pedagogy and practice: Moroccan primary teachers' attitudes and practices in Moroccan primary schools. *World Journal of Advanced Research and Reviews*, 14(2), 174–184. <https://doi.org/10.30574/wjarr.2022.14.2.0413>

Nuttall, J. R., & Nuttall, L. M. (2013). *Dyslexia and the iPad: Overcoming dyslexia with technology*. James Nuttall and Linda Nuttall.

Saleh, M. (2023, February 14). Morocco: Number of internet users 2013-2023. Statista. Retrieved February 20, 2023, from <https://www.statista.com/statistics/1172769/number-of-internet-users-morocco/>

Special to The New York Times. (1958, Oct 05). Morocco to Begin Guided Education: Plan is Designed to Replace all Foreign Technicians and Civil Servants. New York Times (1923-) <http://ezproxy.wpi.edu/login?url=https://www.proquest.com/historical-newspapers/morocco-begin-guided-education/docview/114532668/se-2>

The Yale Center for Dyslexia & Creativity - Yale School of Medicine. Yale Dyslexia. (n.d.). Retrieved Feb 27, 2023, from <https://dyslexia.yale.edu/>

United Nations Development Programme. (2022). *Human development report 2021/2022: Uncertain Times, unsettled lives: Shaping our future in a transforming world.*

United Nations Children's Fund (UNICEF). (2019). State of the Children in Morocco 2019. <https://www.unicef.org/media/90651/file/Morocco-2019-COAR.pdf>

United Nations Children's Fund (UNICEF). (2020). State of the Children in Morocco 2020. <https://www.unicef.org/media/100426/file/Morocco-2020-COAR.pdf>

United Nations Children's Fund (UNICEF). (2021). State of the Children in Morocco 2021. <https://www.unicef.org/media/117261/file/Morocco-2021-COAR.pdf>

University of Central Arkansas: UCA. Political Science. (n.d.). Retrieved February 13, 2023, from <https://uca.edu/politicalscience/dadm-project/middle-eastnorth-africapersian-gulf-region/francemorocco-1930-1956/>

...until everyone can read! International Dyslexia Association. (n.d.). Retrieved Feb 18, 2023, from <https://dyslexiaida.org/>

U.S. Department of Health and Human Services. (n.d.). Attention-deficit/hyperactivity disorder. National Institute of Mental Health. Retrieved March 1, 2023, from <https://www.nimh.nih.gov/health/topics/attention-deficit-hyperactivity-disorder-adhd>

What is neurodiversity? Child Mind Institute. (2023, January 9). Retrieved Feb 12, 2023, from <https://childmind.org/article/what-is-neurodiversity/>

Yassine, A., & Bakass, F. (2022). Youth's poverty and inequality of opportunities: Empirical evidence from Morocco. *Social Sciences*, 12(1), 28.  
<https://doi.org/10.3390/socsci12010028>

7 practical ways parents can help a child with dyscalculia. Brain Balance Achievement Centers. (n.d.). Retrieved March 1, 2023, from <https://www.brainbalancecenters.com/blog/practical-ways-parents-can-help-child-dyscalculia>



## **Appendix A : Consent Form and Questions for Experts Interviews**

We are a group of students from Worcester Polytechnic Institute in the United States, and we are conducting a research project with Educall, Education for All, to advance the education of students with neurodivergence in Morocco. Specifically those diagnosed with ADHD, Dyslexia, and Dyscalculia. We are going to be asking questions regarding your knowledge of methods and practices that can benefit primary aged students with different styles of learning. The results of our research will be published by our university and made available via our groups online repository.

This interview will take approximately 45 minutes of your time. Since your responses will be utilized in our repository, you will be recognized as a source of information with your name attached to it. We would also like to ask your permission to use direct quotations from this interview and attribute them to you. This entire interview process is completely voluntary, you may refuse to answer any questions or withdraw your participation at any time. If there is a statement that you do not want your name attached with, let us know during or after this interview process to ensure your privacy. If you have any questions or concerns after the interview, you can reach our team at our shared email alias: [gr-MO23-edu@wpi.edu](mailto:gr-MO23-edu@wpi.edu)

Do you still wish to participate in this interview? Do we have your permission to audio record this interview for later reference by the group? Do you give permission for us to use your quotes in our report? Do you have any questions before we begin?

### 1. Basic Information

- a. What is your name?
- b. What is your current job position?
- c. What are your main areas of focus at your job?

### 2. Neurodiversity Questions:

- a. How does your organization diagnose students with different types of learning styles? (What are the assessments that you offer?)
- b. What are current practices you see in use to accommodate neurodivergent students? (Specifically for students diagnosed with Dyslexia, Dyscalculia, and ADHD)

- c. Which specific practices have you seen to be the most beneficial/least beneficial?
  - d. What can parents do to ensure the success of their child?
  - e. What can teachers do in their classrooms to ensure an inclusive environment?
3. Repository
- a. For our repository, what would be a domain name that would be most beneficial for parents and teachers?
  - b. Do you have any academic resources or websites that you recommend that would be useful to include in our repository?
  - c. (Explain what we are including in the repository)...Do you recommend we include anything else in the repository that would be beneficial for teachers, parents, or students to have access to?

## **Appendix B : Consent Form and Questions for Teacher Interviews**

We are a group of students from Worcester Polytechnic Institute in the United States, and we are conducting a research project with Educall, Education for All, to advance the education of students with neurodivergence in Morocco. We are going to be asking you questions regarding your knowledge of methods and practices in the classroom that can benefit primary aged students with different styles of learning. The results of our research will be published by our university and made available via our groups online repository.

This interview will take approximately 30 minutes of your time. Your responses will be used in our repository to gain information about the current state of assistance in the primary classrooms for neurodiverse students; specifically those diagnosed with ADHD, dyslexia, and dyscalculia. Your name will not be attributed to your statements. We will only be using your position as a teacher in a public/private school to identify your responses in our repository.

We would also like to ask your permission to use direct quotations from this interview without attributing them to you. This entire interview process is completely voluntary, you may refuse to answer any questions or withdraw your participation at any time. If you have any questions or concerns after the interview, you can reach our team at our shared email alias: [gr-MO23-edu@wpi.edu](mailto:gr-MO23-edu@wpi.edu)

Do you still wish to participate in this interview? Do we have your permission to audio record this interview for later reference by the group? Do you give permission for us to use your quotes in our report? Do you have any questions before we begin?

Focus Group Topics/Questions:

1. What grade(s) and subject(s) do you teach?
2. What does the training process from your position look like? (specifically about helping with students with learning deficiencies)
3. What is your current understanding of neurodivergent learners?
4. What, if anything, was outlined in your training about students who learn differently?
5. What are some accommodations provided for different learners?
6. What kinds of educational games (if any) are provided for the students?

7. What do you do in your classroom to ensure those with learning differences are included within the classroom? (Such as changes in classroom set up or changes in curriculum)
8. Is there anything regarding inclusive education that you'd like to learn more about?
9. Do you use any educational resources in your classroom that can further help us in our research? Is there anything that has helped you that you think other teachers could benefit from?
10. What information in our online repository do you think can best help teachers whose students have been diagnosed with ADHD, dyscalculia, or dyslexia?
11. Is there any person you think that our group should reach out to to better help our research and repository?

## Appendix C : Consent Form and Questions for Educall Interview

We are going to be asking questions regarding your knowledge of methods and practices that can benefit primary aged students with different styles of learning. The results of our research will be published by our university and made available via our groups online repository.

This interview will take approximately 45 minutes of your time. Since your responses will be utilized in our repository, you will be recognized as a source of information with your name attached to it. We would also like to ask your permission to use direct quotations from this interview and attribute them to you. This entire interview process is completely voluntary, you may refuse to answer any questions or withdraw your participation at any time. If there is a statement that you do not want your name attached with, let us know during or after this interview process to ensure your privacy. If you have any questions or concerns after the interview, you can reach our team at our shared email alias: [gr-MO23-edu@wpi.edu](mailto:gr-MO23-edu@wpi.edu)

Do you still wish to participate in this interview? Do we have your permission to audio record this interview for later reference by the group? Do you give permission for us to use your quotes in our report? Do you have any questions before we begin?

### 1. Basic Information

- a. What is your full name and current position within Visions school and Educall?
- b. Can you give us a brief overview of how the Moroccan education system works up until starting high school?
- c. Why did you want to get involved in education?
- d. How has Educall progressed towards creating “education for all”?

### 2. Establishing a Connection:

- a. What is your experience with inclusive education specifically for those with learning differences?
- b. Have you had any official training regarding students with learning disabilities?
- c. What has been the most beneficial training or information you have received to help increase inclusive education in the classroom?

### 3. Neurodiversity Questions:

- a. What is included in the training for new teachers at the Vision School? How are they prepared to handle students with neurodiversity?

- b. Is there anything not included in the preparation of Vision School teachers that could improve the way they are prepared to handle students with neurodiversity?
  - c. Which specific tactics do you share with teachers to help students with ADHD, dyslexia, or dyscalculia?
  - d. Do you have any resources that you recommend to teachers if they are struggling with a student who has a different style of learning?
4. Repository
- a. What would you suggest we include within our repository? As of now we plan to include a general overview of the three learning styles, a collection of resources to improve inclusive education, a place where teachers from different schools can communicate with one another, and a section that references educational games for students.

## Appendix D : Consent Form and Questions for Parent Conversations

I am part of a group of students from Worcester Polytechnic Institute in the United States, and we are conducting a research project with Educall, Education for All, to advance the education of students with neurodivergence in Morocco. Specifically those diagnosed with ADHD, Dyslexia, and Dyscalculia. We are going to be asking questions regarding your background knowledge and understanding of neurodiversity in the classroom and at home. The results of our research will be published by our university and made available via our groups online repository which can be found using the QR code provided.

This interview will take approximately 5 minutes of your time. Your responses will not be attributed to you in any way. We would also like to ask your permission to use direct quotations from this interview without attributing them to you. This entire interview process is completely voluntary, you may refuse to answer any questions or withdraw your participation at any time. If there is a statement that you wish to withdraw, let us know during or after this interview process. If you have any questions or concerns after the interview, you can reach our team at our shared email alias: [gr-MO23-edu@wpi.edu](mailto:gr-MO23-edu@wpi.edu)

Do you still wish to participate in this interview? Do we have your permission to audio record this interview for later reference by the group? Do you give permission for us to use your quotes in our report? Do you have any questions about our project before we begin?

### 1. Basic Information

- a. Do you have a child, if so what grade are they in?
- b. Can you give us a brief overview of your child's education up to this point? (Such as if they have attended public or schools and if they have had any special
- c. Is your child enrolled in the vision school, if so, what stood out about Vision School?

### 2. Establishing a Connection:

- a. Does your child have any different learning styles (such as dyslexia, ADHD, dyscalculia, or others)? If so, have they been diagnosed by a medical professional?
  - i. Has your child had access to tools (either online or through their school) that has helped them through their struggle?

- b. Have you had any experience working with people who have a type of neurodiversity such as ADHD, dyscalculia, or dyslexia?
- 3. Neurodiversity Questions:
  - a. What do you think of the current environment in Morocco regarding the acceptance of children with learning differences, both in school and at home?
- 4. Repository
  - a. We are creating an online website plan to include a general overview of ADHD, Dyslexia and Dyscalculia, as well as a collection of resources to improve inclusive education, a place where teachers from different schools can communicate with one another, and a section that references educational games for students. Can you think of any other additions that would benefit parents if they were included in our website?



# Appendix E : Pamphlets Handed out to Parents (English)

## Meet our Team



Ethan Wolf  
Lucy Buda  
Nick Latsis  
Jacob McDonald

### CONTACT US

#### Student Group

gr-MO23-edu@wpi.edu

Team Website



#### Educall

contact@educall.ma

+212 770-472548

Team Email



## WPI Inclusive Education



VISION SCHOOL



Sponsored by Educall

## The Project Goal

We will be developing a repository of educational practices to support and destigmatize the different learning styles that are commonly present in Moroccan primary schools. Our project will focus on:

- Attention Deficit/Hyperactivity Disorder (ADHD)
- Dyslexia
- Dyscalculia

## Methodology

- Interviewing experts of different learning styles
  - neurologists, pedagogists, and orthophonistes
- Interviews with teachers
  - Specifically those who have experience with Educall
- Conversations with parents of primary aged students
- Input from Educall and the Vision School

## Website Features

- General information about ADHD, dyslexia, and dyscalculia
- Resources for teachers to assist those in their classroom who learn differently
- A page for teachers to talk with each other and share methods they found successful
- Educational games to provide students with extra help

## Common Learning Styles:

It is important to understand that neurodivergence is not caused by laziness, lack of intelligence, poor vision, or social circumstances

### ADHD

ADHD is a common type of learning style in younger children that includes symptoms such difficulty focusing, hyperactivity, and impulsive movement.

### DYSLEXIA

Dyslexia is a neurological disorder that impairs someone's ability to read. Symptoms of dyslexia can include difficulties with spelling, visual-verbal responding, and manipulating sounds.

### DYSCALCULIA

Dyscalculia refers to a difficulty in understanding mathematical concepts and number based information, generally in a child's developmental years.

## Appendix F : Pamphlets Handed out to Parents (Arabic)

### التعليم الشامل WPI



VISION SCHOOL



برعاية Educall

### تعرف على فريقنا



يثان ولف - مهندس ميكانيكي  
لوسي بودا - مهندس ميكانيكي  
نيك لاتسيس - علم البيانات  
جاكوب مكدونالد - الهندسة الطبية الحيوية

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البريد الإلكتروني للفريق

موقع الفريق



### مميزات الموقع

- معلومات عامة عن اضطراب فرط الحركة ونقص الانتباه وعسر القراءة وعسر الحساب
- موارد للمعلمين لمساعدتهم على مساعدة أولئك الذين يتعلمون بشكل مختلف
- صفحة للمعلمين للتحدث مع بعضهم البعض ومشاركة الأساليب التي وجدوها ناجحة
- ألعاب تعليمية تزويد الطلاب بمساعدة إضافية

### أساليب التعلم الشائعة:

من المهم أن نفهم أن الاختلاف العصبي لا ينتج عن الكسل أو نقص الذكاء أو ضعف الرؤية أو الظروف الاجتماعية

#### قصور الانتباه وفرط الحركة

يعد اضطراب نقص الانتباه مع فرط النشاط نوعًا شائعًا من أنماط التعلم لدى الأطفال الأصغر سنًا ويتضمن أعراضًا مثل صعوبة التركيز وفرط النشاط والحركة الاندفاعية.

#### عسر القراءة

عسر القراءة هو اضطراب عصبي يضعف قدرة الشخص على القراءة. يمكن أن تشمل أعراض عسر القراءة صعوبات في التهجئة والاستجابة البصرية اللفظية والتلاعب بالأصوات.

#### عسر الحساب

يشير عسر الحساب إلى صعوبة فهم المفاهيم الرياضية والمعلومات القائمة على الأرقام، بشكل عام في سنوات نمو الطفل.

### هدف المشروع

- سنقوم بتطوير موقع على شبكة الإنترنت للممارسات التعليمية لدعم وإزالة وصمة أنماط التعلم المختلفة الموجودة عادة في المدارس الابتدائية المغربية.
- سيركز مشروعنا على:
  - قصور الانتباه وفرط الحركة
  - عسر القراءة
  - عسر الحساب

### المنهجية

- إجراء مقابلات مع الخبراء من مختلف أنماط التعلم
  - أطباء الأعصاب ، وأخصائيي التربية ، وأخصائيي تقويم العظام
- مقابلات مع المعلمين
  - على وجه التحديد أولئك الذين عملوا مع Educall
- محادثات مع أولياء الأمور
- مدخلات من Educall و Vision School

## Appendix G : Pamphlets Handed out to Parents (French)

### Rencontrez Notre Équipe



Ethan Wolf  
Lucy Buda  
Nick Latsis  
Jacob McDonald

#### CONTACT US

##### Student Group

gr-MO23-edu@wpi.edu

Site de L'équipe



contact@educall.ma

+212 770-472548

E-Mail de L'équipe



##### Educall

### WPI Éducation Inclusive



VISION+SCHOOL



Sponsorisé par Educall

### L' Objectif du Projet

Nous développerons un référentiel de pratiques éducatives pour soutenir et déstigmatiser les différents styles d'apprentissage couramment présents dans les écoles primaires marocaines.

Notre projet portera sur :

- Trouble Déficitaire de L'attention/Hyperactivité (TDAH)
- Dyslexie
- Dyscalculie

### Méthodologie

- Interviewer des expertContribution d'Educall et de la Vision School
- s de différents styles d'apprentissage
  - neurologues, pédagogues et orthophonistes
- Entretiens avec des enseignants
  - Plus précisément ceux qui ont travaillé avec Educall
- Conversations avec les parents
- Input from Educall and the Vision School

### Fonctionnalités du Site Web

- Informations générales sur le TDAH, la dyslexie et la dyscalculie
- Ressources pour les enseignants pour aider ceux qui apprennent différemment
- Une page permettant aux enseignants de discuter entre eux et de partager les méthodes qu'ils ont trouvées efficaces
- Jeux éducatifs pour fournir aux élèves une aide supplémentaire

### Styles d'apprentissage courants

Il est important de comprendre que la neurodivergence n'est pas causée par la paresse, le manque d'intelligence, une mauvaise vision,

#### TDAH

Le TDAH est un type courant de style d'apprentissage chez les jeunes enfants qui comprend des symptômes tels que la difficulté à se concentrer, l'hyperactivité et les mouvements impulsifs.

#### DYSLEXIE

La dyslexie est un trouble neurologique qui altère la capacité de quelqu'un à lire. Les symptômes de la dyslexie peuvent inclure des difficultés d'orthographe, de réponse visuelle-verbale et de manipulation des sons.

#### DYSCALCULIE

La dyscalculie fait référence à une difficulté à comprendre les concepts mathématiques et les informations basées sur les nombres, généralement au cours des années de développement de l'enfant.

## **Appendix H : Consent Statement and Discussion Questions for Masters Students**

We are a group of students from Worcester Polytechnic Institute in the United States, and we are conducting a research project with Educall, Education for All, to advance the education of students with neurodivergence in Morocco. Specifically those diagnosed with ADHD, Dyslexia, and Dyscalculia. We are going to be asking questions regarding your knowledge of methods and practices that can benefit primary aged students with different styles of learning. The results of our research will be published by our university and made available via our groups online repository.

This discussion will take approximately 1 hour of your time. Since your responses will be utilized in our repository, you will be recognized as a source of information. We would also like to ask your permission to use direct quotations from this interview without attributing them specifically to you. This entire discussion process is completely voluntary, you may refuse to answer any questions or withdraw your participation at any time. If you have any questions or concerns after the interview, you can reach our team at our shared email alias:

[gr-MO23-edu@wpi.edu](mailto:gr-MO23-edu@wpi.edu)

Do you still wish to participate in this discussion? Do you give permission for us to use your quotes in our report? Do you have any questions before we begin?

### 1. Basic Information

- a. What are you all currently studying at school?
- b. What made you want to study this topic?
- c. Can you describe your current understanding of different learning disabilities, such as dyslexia and ADHD?
- d. What methods or practices can teachers use in the classroom to make sure students with different learning disabilities or styles are not falling behind?
- e. Why do you think there is such mixed understanding of neurodiversity among teachers?
- f. How would you recommend explaining different learning styles to parents?

### 2. Repository

- a. (Show them the repository)... As a resource for parents, teachers, and students, what else do you think would be beneficial to add to our website?
- b. Is there anything that you would want to see on the website as future educators?
- c. During your time studying have you used any online resources that you think we could add to the website that would help parents and teachers better understand neurodivergence?
- d. Do you have any suggestions on what we could name our repository so it will appear in as many searches as possible?

## Appendix I : Final Informational Guide (English)

### Meet our Team



Ethan Wolf  
Lucy Buda  
Nick Latsis  
Jacob McDonald

#### CONTACT US

##### Student Group

gr-MO23-edu@wpi.edu

(Online Repository)



##### Educall

contact@educall.ma

+212 770-472548

Team Email



Advancing Education for  
Neurodiverse Students in  
Morocco: A Repository for  
Teachers, Parents, and  
Students



VISION SCHOOL



WPI Inclusive Education  
Sponsored by Educall

### Project Goals

To provide resources to parents, teachers, and students with information regarding the different types of neurodiversity commonly present in Moroccan primary schools. Additionally, to reduce the negative stigmas and stereotypes commonly associated with neurodivergence.

#### Professional Resources

##### Dr. Zineb El Alaoui

- Speech Therapist
- Phone: 06 69 21 14 71
- E-mail: z.alaoui.ortho@gmail.com

##### Dr. Aasmae Boumediane

- Child Psychotherapist
- Phone: 06 72 49 43 78
- E-mail: Aasmae.boumediane@gmail.com

##### Dr. Ahlam Moutez

- Neuropsychologist and Clinician
- Phone: 06 58 64 40 24

### What is Neurodiversity?

Neurodivergence refers to a broad range of neurological conditions and learning styles that affect a person's perception, behavior, and ability to process information. Neurodivergent students may have challenges with attention, communication, social interaction, and executive function, which neurotypical students might not experience themselves. Some neurodivergent students may also have sensory sensitivities, such as aversion to loud noises, bright lights, or certain textures, which can make the educational environment overwhelming or distracting.

#### Common Learning Styles:

It is important to understand that neurodivergence is not caused by laziness, lack of intelligence, poor vision, or social circumstances

##### ADHD

ADHD is a common type of learning style in younger children that includes symptoms such as difficulty focusing, hyperactivity, and impulsive movement.

##### DYSLEXIA

Dyslexia is a neurological disorder that impairs someone's ability to read. Symptoms of dyslexia can include difficulties with spelling, visual-verbal responding, and manipulating sounds.

##### DYSCALCULIA

Dyscalculia refers to a difficulty in understanding mathematical concepts and number based information, generally in a child's developmental years.



## Appendix J : Final Informational Guide (Arabic)

# النهوض بتعليم الطلاب المتنوعين في المغرب: مستودع للمعلمين وأولياء الأمر والطلاب



VISION+SCHOOL



WPI التعليم الشامل  
برعاية Educall

### ما هو التنوع العصبي؟

يشير الاختلاف العصبي إلى مجموعة واسعة من الحالات العصبية وأنماط التعلم التي تؤثر على إدراك الشخص وسلوكه وقدرته على معالجة المعلومات. قد يواجه الطلاب المتنوعون تحديات في الانتباه والتواصل والتفاعل الاجتماعي والوظيفة التنفيذية ، والتي قد لا يختبرها الطلاب ذوو النمط العصبي بأنفسهم. قد يعاني بعض الطلاب المتنوعين من الأعصاب أيضًا من الحساسيات الحسية ، مثل النور من الضوضاء الصاخبة أو الأضواء الساطعة أو مواد معينة ، والتي يمكن أن تجعل البيئة التعليمية ساحقة أو مشتتة للانتباه.

### أساليب التعلم الشائعة:

من المهم أن نفهم أن الاختلاف العصبي لا ينتج عن الكسل أو نقص الذكاء أو ضعف الرؤية أو الظروف الاجتماعية

#### قصور الانتباه وفرط الحركة

بعد اضطراب نقص الانتباه مع فرط النشاط نوعًا شائعًا من أنماط التعلم لدى الأطفال الأصغر سنًا ويتضمن أعراضًا مثل صعوبة التركيز وفرط النشاط والحركة الاندفاعية.

#### عسر القراءة

عسر القراءة هو اضطراب عصبي يضعف قدرة الشخص على القراءة. يمكن أن تشمل أعراض عسر القراءة صعوبات في التهجئة والاستجابة البصرية اللفظية والتلاعب بالأصوات.

#### عسر الحساب

يشير عسر الحساب إلى صعوبة فهم المفاهيم الرياضية والمعلومات القائمة على الأرقام ، بشكل عام في سنوات نمو الطفل.

## تعرف على فريقنا



يثان ولف  
لوسي بودا  
نيك لاتسيس  
جاكوب مكدونالد

### راسلنا

**طلاب**  
gr-M023-edu@wpi.edu  
**الرعاية**  
contact@educall.ma  
+212 770-472548

موقع الفريق



البريد الإلكتروني للفريق



### أهداف المشروع

لتزويد أولياء الأمور والمعلمين والطلاب بالمعلومات المتعلقة بأنواع مختلفة من التنوع العصبي الموجودة عادة في المدارس الابتدائية المغربية، بالإضافة إلى ذلك ، للحد من الوصمات السلبية والصور النمطية المرتبطة عادة بالتباين العصبي.

### الموارد المهنية

دكتورة زينب العلوي  
• معالج النطق  
• الهاتف: 71 14 21 69 06  
• البريد الإلكتروني: z.alaoui.ortho@gmail.com  
الدكتورة أسماء بومديان  
• معالج نفسي للأطفال  
• هاتف: 78 43 49 72 06  
• البريد الإلكتروني:  
Aasmae.boumediane@gmail.com

الدكتورة أحلام موتيز  
• أخصائي علم النفس العصبي وطبيب  
• هاتف: 24 40 64 58 06

## Appendix K : Final Informational Guide (French)

### Rencontrez Notre Équipe



Ethan Wolf  
Lucy Buda  
Nick Latsis  
Jacob McDonald

#### CONTACT US

##### Student Group

gr-MO23-edu@wpi.edu

Site de L'équipe



##### Educall

contact@educall.ma

+212 770-472548

E-Mail de L'équipe



### Objectifs du Projet

Fournir des ressources aux parents, aux enseignants et aux élèves avec des informations sur les différents types de neurodiversité couramment présents dans les écoles primaires marocaines. De plus, pour réduire les stigmates négatifs et les stéréotypes couramment associés à la neurodivergence.

#### Recours Professionnels

##### Dr. Zineb El Alaoui

- Orthophoniste
- téléphone: 06 69 21 14 71
- E-mail: z.alaoui.ortho@gmail.com

##### Dr. Aasmae Boumediane

- Psychothérapeute pour Enfants
- téléphone: 06 72 49 43 78
- E-mail: Aasmae.boumediane@gmail.com

##### Dr. Ahlam Moutez

- Neuropsychologue et Clinicien
- téléphone: 06 58 64 40 24

Faire progresser  
l'éducation des étudiants  
neurodivers au Maroc : Un  
référentiel pour les  
Enseignants, les Parents  
et les étudiants



VISION•SCHOOL



Éducation inclusive WPI  
Parrainé par Educall

### Qu'est-ce que la Neurodiversité ?

La neurodivergence fait référence à un large éventail de conditions neurologiques et de styles d'apprentissage qui affectent la perception, le comportement et la capacité d'une personne à traiter l'information. Les étudiants neurodivergents peuvent avoir des problèmes d'attention, de communication, d'interaction sociale et de fonction exécutive, que les étudiants neurotypiques pourraient ne pas rencontrer eux-mêmes. Certains élèves neurodivergents peuvent également avoir des sensibilités sensorielles, telles qu'une aversion pour les bruits forts, les lumières vives ou certaines textures, ce qui peut rendre l'environnement éducatif écrasant ou distrayant.

#### Styles d'apprentissage courants

Il est important de comprendre que la neurodivergence n'est pas causée par la paresse, le manque d'intelligence, une mauvaise vision,

##### TDAH

Le TDAH est un type courant de style d'apprentissage chez les jeunes enfants qui comprend des symptômes tels que la difficulté à se concentrer, l'hyperactivité et les mouvements impulsifs.

##### DYSLEXIE

La dyslexie est un trouble neurologique qui altère la capacité de quelqu'un à lire. Les symptômes de la dyslexie peuvent inclure des difficultés d'orthographe, de réponse visuelle-verbale et de manipulation des sons.

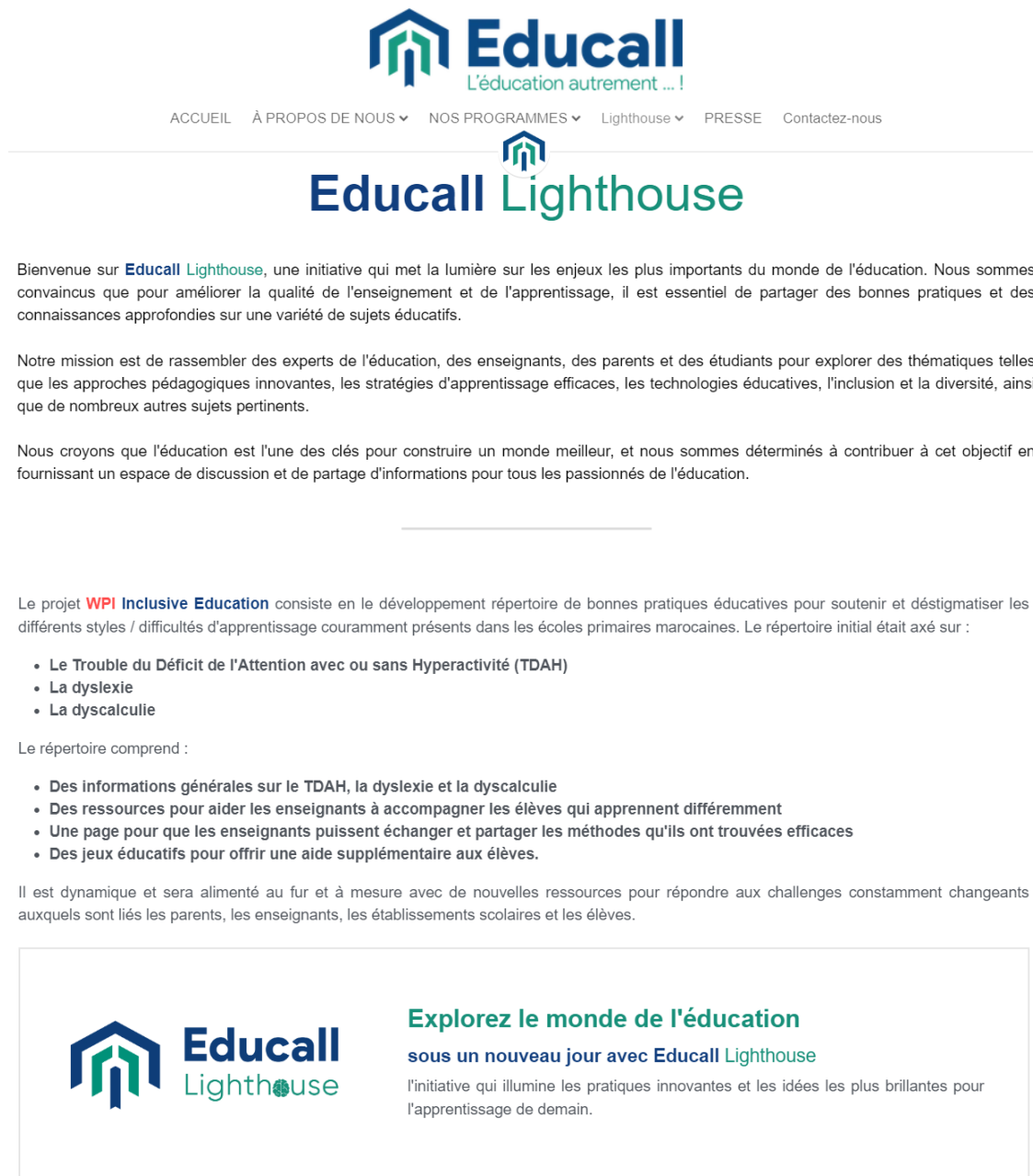
##### DYSCALCULIE

La dyscalculie fait référence à une difficulté à comprendre les concepts mathématiques et les informations basées sur les nombres, généralement au cours des années de développement de l'enfant.



## Appendix L : Online Repository

### Overview Section



The screenshot shows the website for Educall Lighthouse. At the top, there is a navigation menu with links: ACCUEIL, À PROPOS DE NOUS, NOS PROGRAMMES, Lighthouse, PRESSE, and Contactez-nous. The main header features the Educall logo (a stylized house icon) and the text "Educall Lighthouse" in a large, bold font. Below the header, there are three paragraphs of text. The first paragraph welcomes visitors and states the mission of the initiative. The second paragraph describes the mission as gathering experts to explore various educational topics. The third paragraph states the belief that education is key to building a better world. Below this, there is a section titled "Le projet WPI Inclusive Education" which describes a repository of good practices for supporting students with learning difficulties. A bulleted list follows, listing specific conditions: Le Trouble du Déficit de l'Attention avec ou sans Hyperactivité (TDAH), La dyslexie, and La dyscalculie. Another paragraph explains that the repository is dynamic and will be updated with new resources. At the bottom of the screenshot, there is a promotional box with the Educall Lighthouse logo and the text: "Explorez le monde de l'éducation sous un nouveau jour avec Educall Lighthouse" and "l'initiative qui illumine les pratiques innovantes et les idées les plus brillantes pour l'apprentissage de demain."

Bienvenue sur **Educall Lighthouse**, une initiative qui met la lumière sur les enjeux les plus importants du monde de l'éducation. Nous sommes convaincus que pour améliorer la qualité de l'enseignement et de l'apprentissage, il est essentiel de partager des bonnes pratiques et des connaissances approfondies sur une variété de sujets éducatifs.

Notre mission est de rassembler des experts de l'éducation, des enseignants, des parents et des étudiants pour explorer des thématiques telles que les approches pédagogiques innovantes, les stratégies d'apprentissage efficaces, les technologies éducatives, l'inclusion et la diversité, ainsi que de nombreux autres sujets pertinents.

Nous croyons que l'éducation est l'une des clés pour construire un monde meilleur, et nous sommes déterminés à contribuer à cet objectif en fournissant un espace de discussion et de partage d'informations pour tous les passionnés de l'éducation.

Le projet **WPI Inclusive Education** consiste en le développement répertoire de bonnes pratiques éducatives pour soutenir et déstigmatiser les différents styles / difficultés d'apprentissage couramment présents dans les écoles primaires marocaines. Le répertoire initial était axé sur :

- Le Trouble du Déficit de l'Attention avec ou sans Hyperactivité (TDAH)
- La dyslexie
- La dyscalculie

Le répertoire comprend :

- Des informations générales sur le TDAH, la dyslexie et la dyscalculie
- Des ressources pour aider les enseignants à accompagner les élèves qui apprennent différemment
- Une page pour que les enseignants puissent échanger et partager les méthodes qu'ils ont trouvées efficaces
- Des jeux éducatifs pour offrir une aide supplémentaire aux élèves.

Il est dynamique et sera alimenté au fur et à mesure avec de nouvelles ressources pour répondre aux challenges constamment changeants auxquels sont liés les parents, les enseignants, les établissements scolaires et les élèves.

**Educall Lighthouse** Explorez le monde de l'éducation sous un nouveau jour avec Educall Lighthouse  
l'initiative qui illumine les pratiques innovantes et les idées les plus brillantes pour l'apprentissage de demain.

The Lighthouse page in the Overview section. Here users are given information about what Lighthouse is and what is in the repository.

## L'équipe des chercheurs WPI



De gauche à droite: Ethan Wolf, Lucy Buda, Nicholas Latsis, Jacob McDonald

Lucy Buda, Ethan Wolf, Nick Latsis et Jacob McDonald sont un groupe d'étudiants du Worcester Polytechnic Institute aux États-Unis. Ils ont dédié plus de 4 mois pour mener un projet de recherche avec Educall et Vision School. L'objectif était de développer un référentiel de pratiques pédagogiques pour accompagner les parents et enseignants d'élèves marocains du primaire ayant des troubles d'apprentissage, en particulier le TDAH, la dyslexie et la dyscalculie.

L'équipe avait procédé à des entretiens avec différents représentants de l'écosystème éducatif, notamment des experts, enseignants, parents, corps administratif pour une vraie immersion dans le sujet et une compréhension multidimensionnelle des challenges et problématiques afin d'affiner les informations pour un référentiel performant.

## L'équipe des conseillers WPI



De gauche à droite:

- Dr. Fabio Carrera Professor of International and Global Studies & Director of Venice and Santa Fe Project Centers
- Dr. W.A. Bland Addison, Emeritus Professor of History, Humanities & Arts
- EdD. Joseph Doiron, Assistant Teaching Professor-Interdisciplinary Department of Integrative & Global Studies (DIGS)

The research team page in the Overview section. Here users are given information about the team that built the repository.

## Les partenaires clés

Le référentiel a été développé en étroite collaboration avec les établissements et les experts que nous citons ci-dessous que remercions vivement de leur dévouement, engagement et participation active à toutes les étapes de la conception, la réalisation et du test de ce projet.

Une mention spéciale est réservée à **Mme. Zineb El Alaoui** dont la contribution pour l'élaboration de ce livrable a été inestimable.

Nous nous adressons également à l'ensemble des experts, **Dr. Aasmae Boumediane, Dr. Ahlam Moutez, Mr. Tariq El Allami et ses étudiants de la Faculté des Sciences de l'Éducation, ainsi que tous les experts qui ont préféré garder l'anonymat**, qui nous ont accueilli à bras ouverts et nous ont fourni toutes les informations précieuses indispensables à l'élaboration de ce projet.

L'ensemble des contacts de nos experts sont disponibles dans la rubrique "**J'ai besoin de >> Professionnels**".

The partners page in the Overview section. Here users are given information about the team that built the repository.

## La méthodologie adoptée

Les méthodes utilisées pour développer ce référentiel étaient les suivantes :

- Déterminer l'état de l'éducation inclusive au Maroc via une analyse des parties prenantes
- Développer le référentiel
- Présenter le référentiel aux enseignants et aux parents pour obtenir des commentaires

L'équipe a déterminé l'état de l'éducation inclusive au Maroc via une analyse des parties prenantes en :

- Rassemblant des informations et des ressources auprès d'experts neurologiques
- Identifiant les besoins des enseignants du primaire
- Évaluant les moyens d'Educall pour promouvoir l'éducation pour tous
- Reconnaisant les lacunes dans la compréhension de la neurodiversité chez les parents
- Évaluant les connaissances des étudiants de master en éducation

L'équipe a développé le référentiel en :

- Sélectionnant les langues dans lesquelles le référentiel serait présenté
- Déterminant ce qui serait inclus dans le référentiel papier
- Déterminant la mise en forme du référentiel, qui comprenait :
  - Des informations générales sur la neurodiversité et les différents styles d'apprentissage
  - Des ressources professionnelles
  - Une section de questions fréquemment posées
  - Une section pour les élèves
  - Des forums de discussion pour les enseignants et les parents

L'équipe a ensuite présenté le référentiel aux enseignants et aux parents pour obtenir des commentaires en vue d'améliorations futures.

The methodology page in the Overview section. Here users are given information about the team that built the repository.

## Neurodivergency Section

### Signes de Neurodivergence

Chacun de vos enfants/élèves est unique et évoluera à son rythme. Cependant, il est important de noter qu'il existe des **signes potentiels** qui pourraient indiquer que votre élève est neurodivergent. Certains signes potentiels de neurodivergence comprennent, mais sans s'y limiter, les éléments suivants :

- **Développement retardé de la parole ou du langage**
- **Difficulté avec la motricité fine ou globale**
- **Difficulté avec l'interaction sociale**
- **Difficulté avec les transitions ou les changements de routine**
- **Difficulté avec le contrôle des impulsions**
- **Sensibilités sensorielles**
- **Comportements ou mouvements répétitifs**
- **Manque de contact visuel**
- **Ne pas répondre à l'appel de leur nom**
- **Intérêts inhabituels ou intenses qui ne sont pas typiques de leur âge**

L'exposition de ces signes n'indique pas nécessairement qu'un élève est neurodivergent, mais il est recommandé de demander **un diagnostic à un professionnel de la santé** si l'un de ces signes est présent.

The Signs of Neurodivergence page in the Neurodivergence section. Here users are given potential signs of being neurodivergent.

# Le TDAH

## Qu'est-ce que le TDAH ?

Le TDAH est l'acronyme de trouble du déficit de l'attention avec ou sans hyperactivité. C'est l'un des troubles neurologiques les plus courants chez les enfants. Les enfants diagnostiqués avec le TDAH peuvent avoir des difficultés à maintenir leur concentration et à réguler leurs actions impulsives, telles que agir sans considérer les conséquences ou avoir des niveaux excessifs d'activité physique. Les symptômes peuvent inclure : parler excessivement, bouger sans cesse, avoir des difficultés à s'entendre avec les autres, faire des erreurs par négligence et avoir l'esprit qui divague. Ce trouble est souvent d'origine génétique et présent dès la naissance, cependant, il est également possible d'acquérir le TDAH suite à une lésion cérébrale, une naissance prématurée, un faible poids de naissance ou une exposition à des substances nocives pendant la grossesse. Il était autrefois accepté que le TDAH était causé par une consommation excessive de sucre, une trop grande exposition à la télévision et la pauvreté. Cependant, aucune recherche n'a établi de relation causale entre ces facteurs et le TDAH.



## Élever et éduquer des enfants et élèves atteints de TDAH

Lorsqu'il s'agit d'éduquer un enfant atteint de TDAH, il est important d'aborder la situation avec patience, compréhension et une volonté d'essayer différentes stratégies jusqu'à ce que vous trouviez ce qui convient le mieux à l'enfant individuel. Rappelez-vous que chaque enfant atteint de TDAH est unique, et ce qui fonctionne pour un enfant peut ne pas fonctionner pour un autre. Soyez patient, flexible et prêt à essayer différentes stratégies jusqu'à ce que vous trouviez ce qui fonctionne le mieux. Les traitements peuvent inclure une thérapie comportementale et des médicaments. La thérapie comportementale vise à éliminer les comportements négatifs et à promouvoir les comportements positifs. Les formes courantes de cette thérapie comportementale comprennent la formation des parents, les interventions en classe, les interventions entre pairs et la formation aux compétences organisationnelles. Le traitement est le plus efficace lorsque les méthodes sont utilisées en combinaison, et les enseignants collaborent avec les parents. Pour la plupart des enfants atteints de TDAH, une vie à domicile structurée avec l'aide des parents peut être très bénéfique. Cette vie à domicile structurée peut inclure une routine, la minimisation des distractions, la création d'un plan, la mise en place de récompenses et la création d'un mode de vie sain.

Les techniques générales pour améliorer l'éducation des élèves atteints de TDAH comprennent, mais ne se limitent pas aux approches suivantes:

- **Créer une routine structurée:** Les enfants atteints de TDAH bénéficient de routines cohérentes et prévisibles. Cela peut les aider à rester concentrés et à gérer leur comportement.
- **Établir une routine claire** pour les repas, les devoirs et tout autre activité qui peut être utile.
- Utiliser des supports visuels: Les supports visuels peuvent être très utiles pour les enfants atteints de TDAH. Il peut s'agir de calendriers codés par couleurs, d'emplois du temps imagés et de listes de contrôle.
- **Diviser les tâches en étapes gérables:** Les enfants atteints de TDAH peuvent être submergés par des tâches importantes, donc les diviser en étapes plus petites peut être utile. Cela peut les aider à rester concentrés et à avancer.
- **Utiliser le renforcement positif:** Les enfants atteints de TDAH répondent bien au renforcement positif. Les éloges et les récompenses pour un bon comportement peuvent aider à encourager un comportement positif et à renforcer la confiance.
- **Utiliser une approche multisensorielle:** Les enfants atteints de TDAH bénéficient souvent d'une approche multisensorielle pour l'apprentissage. Cela peut inclure des activités pratiques, des pauses pour bouger et des supports visuels.

The ADHD page in the Neurodivergence section. Here users are given information about the neurodiversity, ADHD.



# La dyslexie

## Qu'est-ce que la dyslexie ?

La dyslexie est un trouble neurologique qui altère la capacité de quelqu'un à lire. Les symptômes de la dyslexie peuvent inclure des difficultés avec l'orthographe, la réponse visuelle-verbale et la manipulation des sons. Il est important de comprendre que la dyslexie n'est pas causée par la paresse, le manque d'intelligence ou une mauvaise vision. La dyslexie est une condition neurologique qui affecte la façon dont le cerveau traite l'information.



## Élever et éduquer des enfants et élèves atteints de dyslexie

Lorsqu'il s'agit d'éduquer un enfant atteint de dyslexie, il est important d'aborder la situation avec patience, compréhension et une volonté d'essayer différentes stratégies jusqu'à trouver ce qui fonctionne le mieux pour l'enfant individuel. Rappelez-vous que chaque enfant atteint de dyslexie est unique, et ce qui fonctionne pour un enfant peut ne pas fonctionner pour un autre. Soyez patient, flexible et prêt à essayer différentes stratégies jusqu'à trouver ce qui fonctionne le mieux.

Les techniques générales pour améliorer l'éducation des élèves atteints de dyslexie comprennent, sans s'y limiter, les approches suivantes :

- **Créer un environnement d'apprentissage favorable** : Les enfants atteints de dyslexie ressentent souvent de la frustration et du découragement face à leurs difficultés en lecture et en écriture. En tant qu'éducateur, il est essentiel de créer un environnement d'apprentissage favorable et positif. Encouragez l'enfant à exprimer ses sentiments et offrez-lui un soutien émotionnel.
- **Utiliser une approche multisensorielle** : Les enfants atteints de dyslexie apprennent souvent mieux grâce à une approche multisensorielle qui engage plusieurs sens, notamment le visuel, l'auditif et le kinesthésique. Cette approche peut inclure l'utilisation de manipulatifs, le dessin de dessins et l'utilisation de la technologie pour améliorer l'apprentissage.
- **Se concentrer sur la phonétique** : L'enseignement de la phonétique peut être particulièrement utile pour les enfants atteints de dyslexie. La phonétique enseigne la relation entre les lettres et leurs sons, ce qui peut aider les enfants à décoder les mots plus facilement.
- **Utiliser des technologies d'assistance** : Il existe de nombreuses technologies d'assistance disponibles qui peuvent aider les enfants atteints de dyslexie. Les logiciels de synthèse vocale, les correcteurs d'orthographe et les logiciels de reconnaissance vocale peuvent tous être des outils utiles pour aider les enfants atteints de dyslexie à accéder à l'information et à terminer les devoirs.
- **Fournir un temps supplémentaire** : Les enfants atteints de dyslexie peuvent avoir besoin de temps supplémentaire pour terminer les devoirs, en particulier ceux qui impliquent la lecture et l'écriture. Il est important d'être patient et de donner à l'enfant le temps dont il a besoin pour terminer son travail.

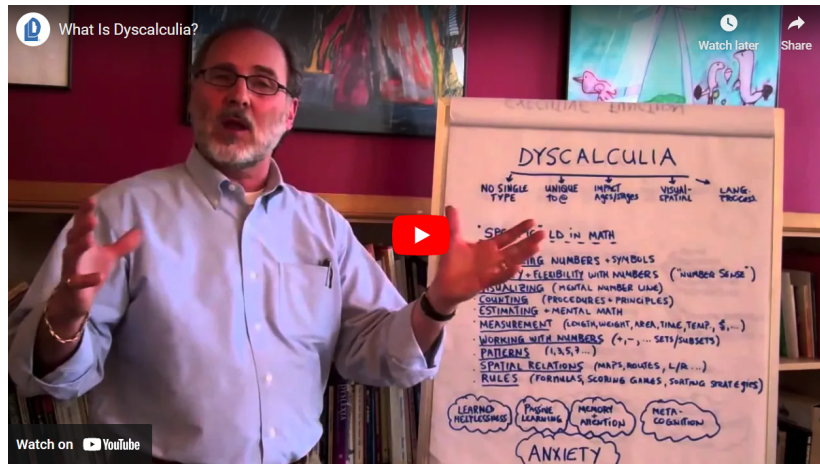
The Dyslexia page in the Neurodivergence section. Here users are given information about the neurodiversity, Dyslexia.

# La dyscalculie

## Qu'est-ce que la dyscalculie ?

La dyscalculie est un style d'apprentissage qui affecte la capacité d'une personne à comprendre les informations numériques et mathématiques. Les personnes atteintes de dyscalculie peuvent avoir des difficultés avec les concepts mathématiques et liés aux nombres, mais il est important de se rappeler que ces personnes ne sont pas moins compétentes ou intelligentes que celles qui n'ont pas de dyscalculie. Ce style d'apprentissage peut affecter n'importe qui, mais il est le plus souvent remarqué au début de l'école primaire, ou entre l'âge de six et neuf ans. La dyscalculie affecte entre 3% et 7% de la population mondiale.

Il y a plusieurs éléments qui entrent en jeu pour comprendre et résoudre un problème mathématique. Tout d'abord, il faut utiliser son traitement visuel pour lire le problème et envoyer l'information au cerveau. Ensuite, la mémoire à court terme doit retenir les détails du problème. Le cerveau doit également interpréter les symboles et les nombres en quantités et significations réelles. Enfin, il faut effectuer le calcul en combinant toutes les étapes mentionnées ci-dessus pour résoudre le problème.



## Élever et éduquer des enfants et élèves atteints de dyscalculie

Lorsqu'il s'agit d'éduquer un enfant atteint de dyscalculie, il est important d'aborder la situation avec patience, compréhension et une volonté d'essayer différentes stratégies jusqu'à trouver celle qui convient le mieux à l'enfant en question. Rappelons que chaque enfant atteint de dyscalculie est unique, et ce qui fonctionne pour un enfant peut ne pas fonctionner pour un autre. Soyez patient, flexible et disposé à essayer différentes stratégies jusqu'à trouver ce qui convient le mieux.

Les techniques générales pour améliorer l'éducation des élèves atteints de dyscalculie incluent, mais ne se limitent pas aux approches suivantes :

- **Utiliser une approche multisensorielle** : Les enfants atteints de dyscalculie bénéficient souvent d'une approche multisensorielle pour apprendre les mathématiques. Cela peut inclure l'utilisation de manipulatifs, tels que des blocs ou des compteurs, ainsi que des aides visuelles et auditives.
- **Voir et toucher des objets tangibles** incorpore davantage de sens, pour une meilleure compréhension des principes mathématiques abstraits. Cela aide également à la visualisation de la mise en groupe des nombres. En résistant à l'utilisation de feuilles de travail, les enseignants et les parents devraient utiliser des jeux chaque fois que possible. Les jeux présenteront les mathématiques comme un défi amusant, engageant l'enfant bien plus qu'une feuille de travail. Si les feuilles de travail sont essentielles, il peut être très utile de mettre en évidence ou de souligner les chiffres ou les sujets clés, pour aider à orienter l'attention de l'enfant. Créer des modèles visuels, semblables à l'utilisation de manipulatifs, cependant, cette technique se concentre sur le sens visuel. Des images simples d'objets peuvent être très utiles pour comprendre les quantités et autres aspects des problèmes mathématiques.
- **Utiliser une approche structurée et systématique pour enseigner les mathématiques** : Les enfants atteints de dyscalculie bénéficient d'une approche structurée et systématique pour enseigner les mathématiques. Cela peut inclure une instruction explicite sur le sens des nombres, les faits mathématiques de base et les stratégies de résolution de problèmes.
- **Fournir du temps supplémentaire et des accommodations** : Les enfants atteints de dyscalculie ont souvent besoin de temps supplémentaire et d'accommodements pour accomplir les tâches mathématiques et démontrer leurs connaissances. Cela peut inclure des choses comme du temps supplémentaire aux tests, des calculatrices et des technologies d'assistance.

The Dyscalculia page in the Neurodivergence section. Here users are given information about the neurodiversity, Dyscalculia.

## *I Am Section*

### Qu'est-ce que la neurodivergence ?

pour un parent

La neurodivergence fait référence à un large éventail de conditions neurologiques et de styles d'apprentissage qui affectent la perception, le comportement et la capacité à traiter l'information d'une personne. Les enfants neurodivergents peuvent avoir des difficultés d'attention, de communication, d'interaction sociale et de fonctionnement exécutif, que les élèves neurotypiques ne peuvent pas ressentir eux-mêmes. Certains élèves neurodivergents peuvent également avoir des sensibilités sensorielles, telles qu'une aversion aux bruits forts, aux lumières vives ou à certaines textures, ce qui peut rendre l'environnement éducatif écrasant ou distrayant.

Les enfants neurodivergents sont confrontés à de nombreux défis externes. La stigmatisation et la discrimination peuvent entraîner une faible estime de soi, une motivation scolaire réduite et des possibilités réduites pour les enfants neurodivergents, qui peuvent se sentir marginalisés et exclus de l'éducation et de la société en général. Il est important d'accepter que votre enfant a un style d'apprentissage différent. Éviter ou nier l'existence de la neurodivergence n'aura qu'un impact négatif sur l'éducation de votre enfant. En acceptant que votre enfant a un style d'apprentissage différent, vous créez une opportunité de construire une éducation qui fonctionne selon les forces de votre enfant.

Les enfants neurodivergents peuvent avoir des forces dans des domaines tels que la créativité, la résolution de problèmes et la pensée critique. Ils peuvent également avoir une grande attention aux détails et la capacité à se concentrer sur des intérêts spécifiques, ainsi qu'un haut niveau de persévérance et de détermination. De plus, les enfants neurodivergents peuvent avoir des compétences exceptionnelles en mémoire, ainsi qu'une forte capacité à penser en dehors des sentiers battus. Ils peuvent avoir des talents naturels dans un domaine spécifique, et une empathie améliorée et la capacité à comprendre les expériences des autres. Il est important que vous compreniez et souteniez les besoins uniques de votre enfant afin de l'aider à réussir dans sa vie scolaire et personnelle.

The a parent page in the I am section. Here users are given information about how neurodiversity affects being a parent.

### Qu'est-ce que la neurodivergence ?

pour un enseignant

La neurodivergence fait référence à une vaste gamme de conditions neurologiques et de styles d'apprentissage qui affectent la perception, le comportement et la capacité d'une personne à traiter les informations. Les étudiants neurodivergents peuvent avoir des difficultés d'attention, de communication, d'interaction sociale et de fonction exécutive, que les étudiants neurotypiques ne peuvent pas expérimenter eux-mêmes. Certains étudiants neurodivergents peuvent également avoir des sensibilités sensorielles, telles qu'une aversion aux bruits forts, aux lumières vives ou à certaines textures, ce qui peut rendre l'environnement éducatif oppressant ou distrayant.

Les étudiants neurodivergents font face à de nombreux défis externes. La stigmatisation et la discrimination peuvent entraîner une faible estime de soi, une motivation académique réduite et des opportunités réduites pour les étudiants neurodivergents. Un manque d'accommodements dans le cadre éducatif peut rendre difficile pour les étudiants neurodivergents d'accéder pleinement au programme d'études et de participer en classe. Des exemples incluent un manque d'arrangements de sièges flexibles, d'options de tests alternatives ou de soutien pour l'organisation et la gestion du temps.

Les étudiants neurodivergents peuvent avoir des forces dans des domaines tels que la créativité, la résolution de problèmes et la pensée critique. Ils peuvent avoir une grande attention aux détails et la capacité de se concentrer sur des intérêts spécifiques, ainsi qu'une grande persévérance et détermination. De plus, les étudiants neurodivergents peuvent avoir des compétences exceptionnelles en matière de mémoire et une forte capacité à penser en dehors de la boîte. Ils peuvent avoir des talents naturels dans un domaine spécifique et une amélioration de l'empathie et de la capacité à comprendre les expériences des autres. Il est important que les éducateurs comprennent et soutiennent les besoins uniques des étudiants neurodivergents afin de les aider à réussir dans leur vie académique et personnelle.

The a teacher page in the I am section. Here users are given information about how neurodiversity affects being a teacher.

## Qu'est-ce que la neurodivergence ?

pour un élève

La neurodiversité est quand les cerveaux des gens fonctionnent différemment. Tout comme certaines personnes ont des cheveux ou une peau de couleur différente, certains cerveaux fonctionnent différemment aussi. Certaines personnes peuvent penser différemment, apprendre différemment ou ressentir les choses différemment. Et c'est normal ! Il est important de respecter et d'accepter les différences de chacun, afin que nous puissions tous travailler ensemble et rendre le monde meilleur.

The a student page in the I am section. Here users are given information about how neurodiversity affects being a student.

### I Need Section

## Forum de discussion

Je suis un parent

Je rejoins le groupe WhatsApp Parents

Lighthouse | Parents آباء وأمّهات

WhatsApp group



Lighthouse

Je suis un enseignant

Je rejoins le groupe WhatsApp Enseignants

Lighthouse | Teachers الأساتذة

WhatsApp group



Lighthouse

Je souhaite interagir en gardant l'anonymat



## Jamboard pour les enseignants

### Forum de discussion anonyme

Si vous souhaitez préserver votre anonymat et poser vos questions sans que l'on puisse vous identifier, nous vous invitons à utiliser le forum de discussion (en cliquant sur l'image ou [ici](#)), à créer votre post-it et à poser votre question.

Nos modérateurs se chargeront d'organiser la discussion. Les questions les plus fréquentes seront également ajoutées à la rubrique **FAQs enseignants**.

Common Neurodivergent Questions	Common Neurodivergent Answers	Dyslexia Questions	Dyslexia Answers
What is neurodiversity?	Neurodiversity refers to the wide range of neurological conditions and learning styles that define a person's perception, behavior, and ability to process information.	How can I help my student if they are diagnosed with dyslexia?	As parents, teachers, and adults in the field, different strategies work for different students. We encourage you to visit the Dyslexia page at <a href="#">www.need.org</a> for more information.

Des Questions	Réponses

## Jamboard pour les parents

### Forum de discussion anonyme

Si vous souhaitez préserver votre anonymat et poser vos questions sans que l'on puisse vous identifier, nous vous invitons à utiliser le forum de discussion (en cliquant sur l'image ou [ici](#)), à créer votre post-it et à poser votre question.

Nos modérateurs se chargeront d'organiser la discussion. Les questions les plus fréquentes seront également ajoutées à la rubrique **FAQs parents**.

## Code de conduite

En utilisant un des canaux du forum de discussion, vous adhérez à ce code de conduite. En tant que membres du groupe de discussion WhatsApp des parents et des enseignants, vous vous engagez à maintenir un environnement respectueux, constructif et professionnel pour tous les membres.

Nous vous prions ainsi de respecter **le code de conduite** du forum de discussion ci-après:

- Respectez les opinions et les croyances de chacun.** Les membres du groupe peuvent avoir des points de vue différents, mais nous devons tous nous comporter de manière respectueuse et professionnelle.
- Évitez les propos offensants, les attaques personnelles et les commentaires désobligeants.** Les membres du groupe ne doivent pas utiliser de langage ou de comportement inapproprié ou offensant.
- Restez sur le sujet et évitez les conversations hors sujet.** Les membres du groupe doivent s'assurer que les conversations restent pertinentes pour le groupe.
- Évitez de partager des informations confidentielles sur les élèves ou les enseignants.** Les membres du groupe ne doivent pas partager d'informations personnelles ou confidentielles sans le consentement des personnes concernées.
- Respectez la vie privée des autres membres du groupe.** Les membres ne doivent pas partager les numéros de téléphone, adresses e-mail ou toute autre information personnelle sans le consentement des personnes concernées.
- Évitez de diffuser de fausses informations.** Les membres du groupe doivent s'assurer que toutes les informations partagées sont exactes et véridiques.
- Signalez tout comportement inapproprié ou abusif.** Les membres du groupe doivent signaler immédiatement tout comportement inapproprié ou abusif aux administrateurs du groupe.

The Discussion page in the I need section. Here parents and teachers are given a Whatsapp and Google Jamboard to discuss and ask questions about neurodiversity.

## Bibliothèque - Recueil de livres

SCRIBD

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### LA DYSLEXIE A L'ÉCOLE PRIMAIRE



Information pour une meilleure connaissance de la dyslexie et de ses conséquences sur le vécu scolaire de l'enfant

Ce livret d'information est proposé par :  
Claire NABOLSKI & Aurélie NOCERA  
Étudiantes en 4<sup>ème</sup> année à l'École d'Orthophonie de Lyon  
Année Scolaire 2005/2006

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## Proposition de documentation à intégrer

Soumettre

The Library page in the I need section. Here users can access written resources and books about neurodiversity, and recommend any other books they know of.

## Bibliothèque - Podcasts

SCRIBD



Pourquoi la dyslexie peut-elle devenir un atout ? : Léonard de Vinci, Winston Churchill, Tom Cruise, Walt Disney, Paul Ehrlich, Agatha Christie ou encore Albert Einstein lui-même : nombreuses sont les personnes célèbres qui souffrent ou ont souffert d'un trouble DYS. Ce dysfonctionnement cognitif n'empêche donc pas de réussir sa vie, et peut-être même qu'il favorise certaines percées dans les milieux faisant appel à la créativité et à l'invention. C'est en tous cas ce qu'indique une étude récente publiée par l'université de Cambridge.

Léonard de Vinci, Winston Churchill, Tom Cruise, Walt Disney, Paul Ehrlich, Agatha Christie ou encore Albert Einstein lui-même : nombreuses sont les personnes célèbres qui souffrent ou ont souffert d'un trouble DYS. Ce dysfonctionnement cognitif n'empêche donc pas de réussir sa vie, et peut-être même qu'il favorise certaines percées dans les milieux faisant appel à la créativité et à l'invention.

[Read this on fr.scribd.com >](#)

SCRIBD



Grand événement - L'apprentissage de la lecture et ses difficultés - Stanislas Dehaene : Comment le cerveau se modifie-t-il quand on apprend à lire ?

Grand événement - L'apprentissage de la lecture et ses difficultés : La psychologie de l'apprentissage de la lecture  
Intervenant : Johannes Ziegler, CNRS, université d'Aix-Marseille  
Résumé : Apprendre à lire change profondément le cerveau de l'enfant.

[Read this on fr.scribd.com >](#)

SCRIBD



Observer le cerveau pour étudier la dyslexie ? : Que mesure l'imagerie par résonance magnétique ? A cette question vous seriez peut-être tenté de répondre que cette technique mesure l'activité cérébrale. Mais en réalité les choses sont bien plus complexes, car

## Proposition de podcasts à intégrer

Soumettre

The Podcasts page in the I need section. Here users can access podcasts about neurodiversity, and recommend any other podcasts they know of.

## Professionnels & Experts

Lors de l'étude, la conception et l'implémentation de ce projet, nous avons pris contact avec de nombreux experts et professionnels de l'écosystème éducatif et neuroscientifique. Cette rubrique met la lumière sur les experts qui nous ont accueilli à bras ouverts et qui ont contribué à l'élaboration de ce répertoire.



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Bilan et rééducation des troubles du langage oral et écrit  
et des pathologies de la voix

### Dr. Âasmae Boumediane

Médecin psychothérapeute enfant, adolescent, mère-  
bébé

## Je recommande un professionnel

**Soumettre**

The Professionals page in the I need section. Here users can access contact information for experts in the field of neurodiversity, and recommend any other experts they know of.

## Jeux éducatifs



uKloo



Echecs



Puzzles & Mots croisés



Jeux pour dyscalculie



Math Playground



Starfall

### Je propose un jeu éducatif

Soumettre

The Educational games page in the I need section. Here users can access different games that increase cognitive skills and assist in education, and recommend any other games they know of.

# Foire Aux Questions

## pour les parents

### Qu'est-ce que la neurodiversité ?

La neurodiversité fait référence à une vaste gamme de conditions neurologiques et de styles d'apprentissage qui affectent la perception, le comportement et la capacité à traiter l'information d'une personne.

Vous trouverez des explications plus étendues sur la neurodiversité dans les sections "**Neurodivergence**" et "**Je suis**".

### Quels sont les signes qui pourraient indiquer que mon enfant est neurodivergent ?

- Un retard dans le développement de la parole ou du langage.
- Des intérêts inhabituels ou intenses qui ne sont pas typiques de leur âge.
- Ne pas répondre à son nom lorsqu'il est appelé.
- Manque de contact visuel.
- Comportements ou mouvements répétitifs.
- Sensibilités sensorielles.
- Difficulté à contrôler les impulsions.
- Difficulté avec les transitions ou les changements de routine.
- Difficulté avec l'interaction sociale.
- Difficulté avec les compétences motrices fines ou grossières.

### Quelles sont les conditions neurodivergentes courantes que mon enfant pourrait avoir ?

Certaines conditions neurodivergentes courantes incluent le TDAH, la dyscalculie et la dyslexie.

### Comment puis-je soutenir mon enfant neurodivergent à la maison ?

- Créez une routine.
- Soyez patient et flexible.
- Considérez les besoins sensoriels.
- Utilisez le renforcement positif.
- Encouragez l'expression de soi.
- Donnez-leur un espace sûr.
- Fournissez des attentes claires.

### Comment puis-je aider mon enfant neurodivergent à développer ses compétences en matière de fonctions exécutives ?

Vous pouvez aider votre enfant neurodivergent à développer ses compétences en matière de fonctions exécutives en utilisant les stratégies suivantes: fournir de la structure et une routine, diviser les tâches en étapes gérables, utiliser des aides visuelles, utiliser la technologie, utiliser le renforcement positif, travailler avec les forces de l'étudiant et créer un environnement favorable.

### Quels sont les aménagements et les modifications que je peux apporter pour mon enfant neurodivergent ?

- **Aides visuelles** : utilisez des aides visuelles telles que des horaires, des tableaux d'images et des systèmes codés par couleur pour aider votre enfant à comprendre et à mémoriser les tâches et les routines.
- **Plans d'éducation individualisés (PEI)** : travaillez avec les éducateurs de votre enfant pour élaborer un PEI, qui est un plan personnalisé qui décrit les adaptations, les modifications et les objectifs pour l'éducation de votre enfant.
- **Renforcement positif** : utilisez le renforcement positif pour aider votre enfant à rester motivé et encouragé, comme offrir des éloges ou des récompenses pour un travail bien fait.
- **Modification des tâches** : travaillez avec les éducateurs de votre enfant pour modifier les tâches, telles que diviser les tâches plus importantes en tâches plus petites ou permettre un temps supplémentaire pour les accomplir.
- **Pauses et temps libre** : fournissez régulièrement des pauses et du temps libre tout au long de la journée pour permettre à votre enfant de se recharger et de réduire le stress et l'agitation.
- **Aides visuelles** : Les aides visuelles, telles que les cartes d'images ou les scripts sociaux, peuvent aider votre enfant à comprendre les situations sociales et à communiquer efficacement.

### Comment puis-je défendre les droits de mon enfant neurodivergent à l'école et dans d'autres environnements ?

- **Informez-vous** : Apprenez autant que possible sur le diagnostic de votre enfant et ses besoins spécifiques. Cela vous aidera à comprendre les accommodements et le soutien dont votre enfant a besoin.
- **Recherchez du soutien** : Joignez-vous à un groupe de soutien ou connectez-vous avec d'autres parents d'enfants neurodivergents. Ces groupes peuvent offrir un soutien émotionnel ainsi que des conseils utiles et des ressources pour défendre les droits de votre enfant.
- **Plaidez pour des accommodements** : Plaidez pour des accommodements qui aideront votre enfant à réussir à l'école et dans d'autres environnements. Ces accommodements peuvent inclure un temps supplémentaire pour les examens, un siège préférentiel ou un soutien sensoriel.
- **Assistez à des réunions** : Assistez à des réunions telles que des conférences parents-enseignants. Ces réunions sont l'occasion de discuter des progrès de votre enfant, de revoir les objectifs et de vous assurer qu'il reçoit le soutien dont il a besoin.
- **Communiquez avec les enseignants et les autres professionnels** : Communiquez régulièrement avec les enseignants de votre enfant et les autres professionnels impliqués dans son traitement.
- **Partagez des informations sur le diagnostic de votre enfant, ses forces et ses défis.**
- **Travaillez avec eux pour élaborer un plan d'accommodements et de soutien** qui aidera votre enfant à réussir.

### Quelles ressources sont disponibles pour m'aider à mieux comprendre et soutenir mon enfant neurodivergent ?

Il existe de nombreuses ressources à votre disposition, notamment le développement professionnel, les livres et les articles, les ressources en ligne et les organisations professionnelles.

Il existe des ressources spécifiques pour différents types de neurodiversité dans la section "**J'ai Besoin de soutien**".

The parents page in the FAQs section. Here users can see some frequently asked questions of parents regarding neurodiversity, and their answers.

# Foire Aux Questions

## pour les enseignants

### Qu'est-ce que la neurodiversité ?

La neurodiversité fait référence à une large gamme de conditions neurologiques et de styles d'apprentissage qui affectent la perception, le comportement et la capacité à traiter l'information d'une personne.

Vous trouverez des explications plus étendues sur la neurodiversité dans les sections "Neurodivergence" et "Je suis".

### Comment puis-je reconnaître les étudiants neurodivers dans ma classe?

- Le retard du développement de la parole ou du langage
- Des intérêts inhabituels ou intenses qui ne sont pas typiques pour leur âge
- Ne pas répondre à leur nom lorsqu'on les appelle
- Un manque de contact visuel
- Des comportements ou mouvements répétitifs
- Des sensibilités sensorielles
- Des difficultés de contrôle de l'impulsion
- Des difficultés avec les transitions ou les changements de routine
- Des difficultés avec l'interaction sociale
- Des difficultés avec les compétences motrices fines ou globales

### Quelles sont les conditions neurodivergentes courantes dont je devrais être conscient?

Certaines conditions neurodivergentes courantes incluent le TDAH, la dyscalculie et la dyslexie.

### Comment puis-je soutenir les étudiants neurodivergents dans ma classe?

Vous pouvez soutenir vos étudiants neurodivers dans votre classe en leur offrant des aménagements en fonction de leurs besoins. Chacun de vos étudiants est unique, mais des aménagements spécifiques pour différents types de neurodiversité peuvent être trouvés dans la section Styles d'apprentissage.

### Quelles stratégies d'enseignement sont efficaces pour les étudiants neurodivers?

- L'apprentissage multisensoriel
- L'utilisation d'aides visuelles
- L'apprentissage collaboratif
- Le renforcement positif
- La technologie d'assistance
- L'enseignement différencié



### Comment puis-je aider les étudiants neurodivergents avec les compétences exécutives? ∨

- Fournir une structure et une routine
- Utiliser le renforcement positif
- Créer un environnement de soutien
- Travailler avec les forces de l'étudiant
- Utiliser la technologie
- Utiliser des aides visuelles
- Découper les tâches en étapes gérables

### Quels aménagements et modifications puis-je faire pour les étudiants neurodivergents? ∨

- Fournir du temps supplémentaire pour les tests et les devoirs
- Ajuster les arrangements de sièges pour minimiser les distractions ou la surcharge sensorielle
- Permettre des pauses pour se déplacer ou fournir des jouets pour aider à la concentration et à l'attention
- Offrir un soutien et des ressources supplémentaires, comme des services de tutorat ou de conseil
- Fournir des instructions claires et concises, répétées si nécessaire
- Découper des tâches complexes en étapes plus petites et gérables
- Utiliser une approche d'enseignement et d'apprentissage multisensorielle
- Offrir des formats alternatifs pour les devoirs et les matériaux, tels que des aides audio ou visuelles
- Fournir un environnement calme et sans distractions pour les tests et l'étude Permettre l'utilisation de la technologie d'assistance, telle que le logiciel de texte à parole ou de parole à texte

### Comment puis-je aider les étudiants neurodivergents à améliorer leurs compétences sociales et leur communication? ∨

- Fournir une instruction explicite
- Rechercher un soutien supplémentaire
- Favoriser un environnement de classe favorable
- Utiliser le renforcement positif
- Pratiquer la communication sociale dans un contexte réel
- Encourager l'interaction entre pairs
- Utiliser des supports visuels

### Comment puis-je impliquer les parents et les tuteurs dans le soutien aux étudiants neurodivergents? ∨

- Communiquez régulièrement
- Créer un plan individualisé
- Fournir une formation et une éducation personnalisées
- Solliciter des commentaires
- Inviter les parents/tuteurs à s'impliquer dans la classe
- Fournir des ressources et un soutien

### Quelles ressources sont disponibles pour m'aider à mieux comprendre et soutenir les étudiants neurodivergents? ∨

Il existe de nombreuses ressources à votre disposition, notamment le développement professionnel, les livres et les articles, les ressources en ligne et les organisations professionnelles.

Il existe des ressources spécifiques pour différents types de neurodiversité dans la section "**J'ai Besoin de support**".

The teachers page in the FAQs section. Here users can see some frequently asked questions of teachers regarding neurodiversity, and their answers.

# Foire Aux Questions

## pour les élèves

### Qu'est-ce que la neurodiversité ?

La neurodiversité fait référence à une vaste gamme de conditions neurologiques et de styles d'apprentissage qui affectent la perception, le comportement et la capacité à traiter l'information d'une personne.

Vous trouverez des explications plus étendues sur la neurodiversité dans les sections "**Neurodivergence**" et "**Je suis**".

### Quels sont les troubles neurodivergents courants et comment affectent-ils mon apprentissage ?

Parmi les troubles neurodivergents courants, on trouve le TDAH, la dyscalculie et la dyslexie. Les détails sur leur impact sur votre apprentissage se trouvent dans la section sur la "**neurodivergence**".

### Comment puis-je communiquer mes besoins à mes enseignants et à mes pairs ?

- **Pratiquez l'autodéfense** : apprendre à communiquer efficacement vos besoins est une compétence importante qui peut vous aider à réussir à l'école et au-delà.
- **Pratiquez l'autodéfense** en recherchant des ressources et du soutien, et en apprenant davantage sur vos propres forces et vos défis.
- **Plaidez votre cause** : n'oubliez pas que vous devriez recevoir un soutien et des accommodations qui vous aideront à réussir. N'hésitez pas à plaider votre cause et à parler si vous ne recevez pas l'aide dont vous avez besoin.
- **Demandez de l'aide** : n'ayez pas peur de demander de l'aide si vous avez des difficultés à communiquer vos besoins. Vous pouvez demander l'aide d'un enseignant, d'un parent ou d'un conseiller.
- **Utilisez des aides visuelles** : certains étudiants avec une neurodiversité peuvent trouver utile d'utiliser des aides visuelles, telles que des graphiques, des diagrammes ou des images, pour expliquer leurs besoins aux autres.
- **Utilisez un langage clair et direct** : lors de la communication avec les enseignants et les pairs, utilisez un langage clair et direct pour expliquer vos besoins. Soyez précis sur les accommodations ou le soutien dont vous avez besoin, et expliquez en quoi ils vous aideront.
- **Connaitre vos forces et vos défis** : il peut être utile de comprendre vos propres forces et défis liés à votre neurodiversité. Cela peut vous aider à communiquer plus efficacement avec les autres sur ce dont vous avez besoin.

### Quelles accommodations puis-je demander pour m'aider à réussir à l'école ?

- Une personne désignée pour un soutien et un accompagnement supplémentaires.
- Des instructions écrites ou des listes de contrôle pour aider à l'achèvement des tâches.
- Des accommodations pour les sensibilités sensorielles, telles que des écouteurs antibruit ou un espace calme pour travailler.
- Des pauses pendant les cours ou les examens.
- Des délais flexibles ou des tâches alternatives.
- Des aides visuelles ou des organisateurs graphiques pour aider à l'organisation et à la compréhension.
- L'utilisation de la technologie d'assistance, telle que le logiciel de synthèse vocale ou de reconnaissance vocale.
- Une assistance pour la prise de notes ou l'accès aux notes de cours.
- Un environnement de travail sans distraction ou une place préférentielle.
- Un temps supplémentaire pour les tests et les devoirs.

Il est important de se rappeler qu'il s'agit simplement d'exemples, et que les accommodations doivent être adaptées aux besoins individuels de chaque étudiant. Les étudiants atteints de neurodiversité doivent travailler avec leurs enseignants et les administrateurs de l'école pour identifier les accommodations spécifiques qui leur seront les plus utiles.

## Comment puis-je gérer mes symptômes et rester concentré en classe? ▼

- **Pratiquer la pleine conscience** : les pratiques de pleine conscience, telles que la méditation ou les exercices de respiration, peuvent aider les étudiants à gérer leurs symptômes et à rester concentrés.
- **Communiquer avec les enseignants** : il est important que les étudiants neurodivergents communiquent avec leurs enseignants au sujet de leurs besoins et de leurs défis. Cela pourrait inclure la demande d'aménagements ou la demande de soutien supplémentaire.
- **Utiliser des aides visuelles** : les aides visuelles, telles que des diagrammes ou des graphiques, peuvent être utiles pour les étudiants qui ont du mal à se concentrer ou à rester attentifs.
- **Chercher des espaces calmes** : les étudiants sensibles au bruit ou à d'autres stimuli peuvent bénéficier de la recherche d'espaces calmes pour travailler ou prendre des pauses.
- **Utiliser des outils de manipulation** : les outils de manipulation, tels que des balles antistress ou des toupies de manipulation, peuvent aider les étudiants à gérer leurs symptômes et à rester concentrés en classe.
- **Prendre des pauses** : il est important que les étudiants neurodivergents prennent des pauses selon leurs besoins pour gérer leurs symptômes et rester concentrés. Cela pourrait signifier prendre une courte marche, faire des étirements ou pratiquer des exercices de respiration profonde.
- **Établir une routine** : établir une routine cohérente peut aider les étudiants à rester organisés et concentrés. Cela pourrait inclure l'établissement d'un horaire de sommeil régulier, la planification du temps d'étude et la priorisation des tâches.

## Comment puis-je défendre mes propres intérêts et ceux des autres en matière de neurodiversité? ▼

- **Rechercher du soutien** : si vous avez du mal à défendre vos propres intérêts ou ceux des autres, recherchez du soutien auprès d'un ami de confiance, d'un membre de votre famille ou d'un professionnel.
- **Être persistant** : la défense de vos intérêts prend du temps et des efforts, il est donc important d'être persévérant et de continuer à pousser pour le changement. Ne renoncez pas, même si les progrès semblent lents.
- **Utiliser votre voix** : utilisez votre voix pour sensibiliser et plaider en faveur du changement. Cela pourrait signifier partager vos expériences avec d'autres personnes, écrire des lettres ou des e-mails aux décideurs politiques ou participer à des campagnes de défense.
- **Se connecter avec les autres** : recherchez et connectez-vous avec d'autres personnes qui partagent vos expériences ou vos défis. Cela pourrait signifier rejoindre un groupe de soutien ou chercher un mentor.
- **Se renseigner** : apprenez-en plus sur votre propre neurodiversité et les défis auxquels les autres personnes ayant une neurodiversité peuvent être confrontées. Cela peut vous aider à mieux comprendre comment défendre vos propres intérêts et ceux des autres.
- **Prendre la parole** : N'aie pas peur de parler et de défendre toi-même et les autres avec la neurodiversité. Cela pourrait signifier demander des aménagements ou du soutien, ou sensibiliser aux questions de la neurodiversité et de son impact.

## Quelles sont quelques stratégies pour faire face aux défis de la neurodiversité ? ▼

- **Adopter la neurodiversité** : Adopter la neurodiversité signifie reconnaître la valeur de la diversité sous toutes ses formes. Cela peut aider à réduire la stigmatisation et à promouvoir une société plus inclusive.
- **Se concentrer sur l'auto-soin** : Prendre soin de soi est important pour gérer les défis de la neurodiversité. Cela peut inclure avoir suffisamment de sommeil, manger une alimentation équilibrée et participer à des activités qui vous apportent de la joie.
- **Défendre soi-même** : Se défendre soi-même peut aider à créer un environnement plus favorable et compréhensif. Cela peut signifier demander des aménagements ou parler de ses besoins.
- **Chercher des aménagements** : Des aménagements tels que la technologie d'assistance, des matériels d'apprentissage spécialisés ou un soutien supplémentaire peuvent aider à gérer les défis de la neurodiversité et améliorer la qualité de vie globale.
- **Développer des stratégies de coping** : Développer des stratégies de coping peut aider à gérer le stress et à réduire les symptômes. Cela peut inclure des techniques de pleine conscience, de l'exercice ou le développement d'un système de soutien.

### Comment puis-je maintenir une image de soi positive et surmonter les stéréotypes négatifs sur ma condition ?

- Éduquez-vous: Apprenez autant que possible sur votre condition, ses causes, symptômes et traitements. Cela peut vous aider à mieux comprendre votre condition et à déconstruire les stéréotypes négatifs qui y sont associés.
- Trouvez un soutien: Entourez-vous de personnes qui vous soutiennent et vous encouragent, comme des amis, des membres de la famille ou des professionnels de la santé mentale.
- Rejoindre un groupe de soutien ou participer à des événements communautaires peut également vous aider à vous sentir moins isolé.
- Exprimez-vous: Exprimez vos sentiments et vos pensées à des personnes de confiance, que ce soit par écrit, par le biais de l'art ou de la musique, ou en parlant directement avec eux. Cela peut vous aider à vous sentir plus en contrôle de votre vie et à développer une image de soi positive.
- Évitez les comparaisons: Évitez de vous comparer aux autres, car cela peut être décourageant et vous faire sentir comme si vous ne faisiez pas suffisamment d'efforts.
- Concentrez-vous plutôt sur vos propres réalisations et sur la manière dont vous pouvez vous améliorer.
- Acceptez-vous: Acceptez-vous tel que vous êtes, avec toutes vos forces et vos faiblesses. Se concentrer sur vos qualités positives peut vous aider à vous sentir mieux dans votre peau et à surmonter les stéréotypes négatifs.

### Quelles ressources sont disponibles pour moi, à la fois à l'école et dans la communauté élargie, pour m'aider à réussir et à prospérer malgré ma neurodiversité ?

- Groupes de soutien par les pairs : Rejoindre un groupe de soutien par les pairs peut offrir un sentiment de communauté et d'expérience partagée. Recherchez des groupes qui s'adressent à votre neurodiversité spécifique, tels que le trouble du spectre de l'autisme ou le trouble déficitaire de l'attention avec ou sans hyperactivité.
- Groupes de défense des droits locaux : Il peut y avoir des groupes de défense des droits locaux ou des organisations qui se concentrent sur le soutien aux personnes ayant une neurodiversité. Ces groupes peuvent fournir des ressources et des informations sur les événements et les services communautaires.
- Ressources en ligne : Il existe de nombreuses ressources en ligne disponibles pour les personnes ayant une neurodiversité, telles que des forums de soutien, des sites web informatifs et des blogs écrits par des personnes ayant des expériences similaires.

Consultez la section "J'ai Besoin de" pour plus de ressources.

The students page in the FAQs section. Here users can see some frequently asked questions of students regarding neurodiversity, and their answers.

## Contact Us Section

# Contactez-nous!



WhatsApp



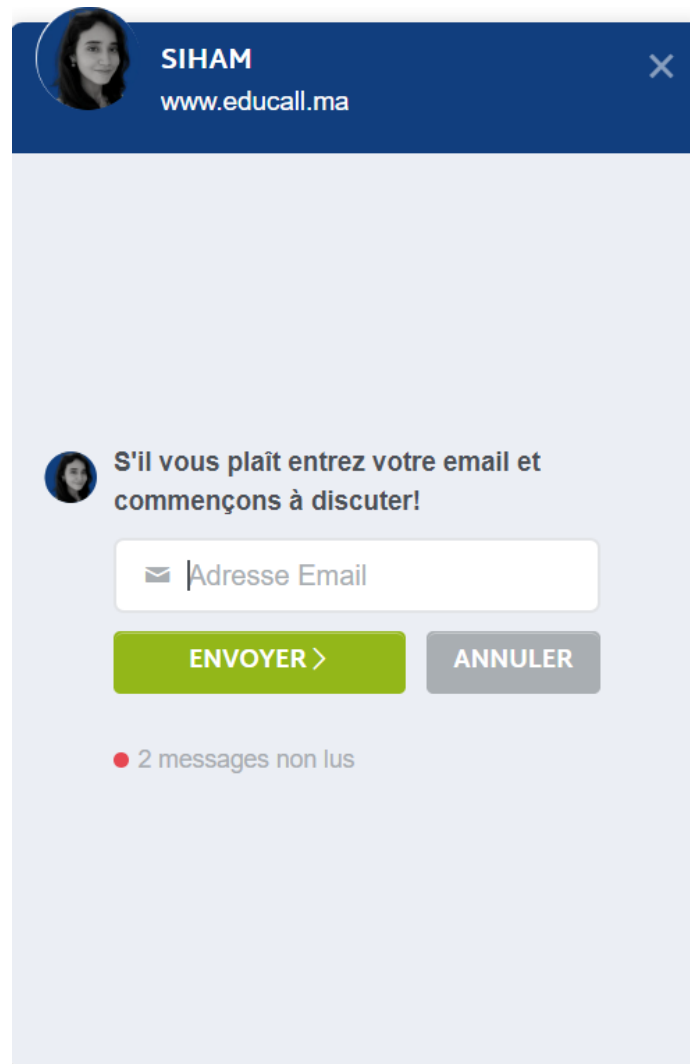
Téléphone



Email

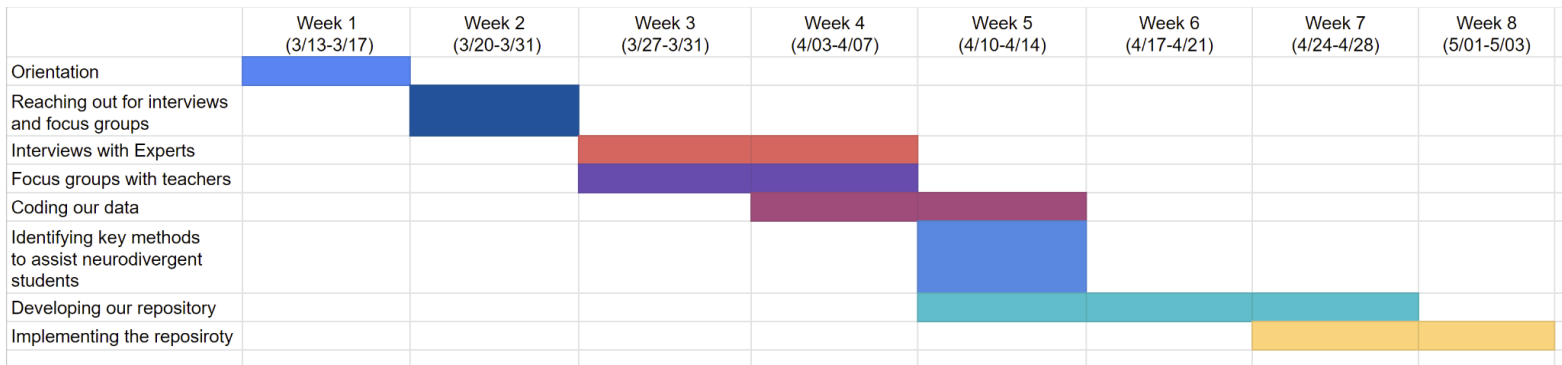
The Contact-us page in the Contact-us section. Here users have access to different ways to contact Educall in the form of WhatsApp, telephone, or email.

## Chatbox



The chat box on Educall's page. Users can enter their email to directly communicate with a chat box regarding any questions they have about the website.

## Appendix M : Gantt Chart



This chart represents our eight week timeline, with the tasks we attempted to accomplish.