

Understanding Irlen Syndrome in the Classroom

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Abstract: The right of every student is to learn in an open and inclusive education system. Students have diverse needs. The role of the educator is to connect with the students and take stock of their needs and ensure that the teaching methods do not put the student at a disadvantage. A successful education system is based on the principle of equity. Students are treated fairly and respectfully making sure that they are supported to address their needs. This paper focuses on visual perceptual difficulty known as Irlen Syndrome and how this syndrome contributes to difficulties to succeed in the education system. It also underlines what methods can be adopted to counteract the difficulties faced by students with Irlen Syndrome.

Keywords: inclusion, sensation, perception, visual processing, Irlen Syndrome

Educators, who are an integral part of the education system, have to uphold the understanding that in all classes students compose a heterogeneous group. A heterogeneous group implies a student population made up of individuals with diverse needs and ways of learning. Their diverse needs do not make them better or worse. It is intrinsically their differences which enrich the learning environment. In response, the learning environment should be enjoyable, positive, and stimulating to all students. The educator has to go in class with an open mind, aiming to understand the students' needs.

In 2014 the European Agency for Special Needs and Inclusive Education carried out an external audit of the Maltese education system. It underlined a rights based approach referring to the 'right of all children to quality education and effective support to maximize their learning

and participation and achievement of valued outcomes'.¹ The questions arising are the following: how can this materialize and what can be done for this to happen? The answer to these related questions is multifaceted.

In this paper the aim is to focus on students who are struggling to achieve and have visual perceptual difficulties. Depending on the visual perceptual difficulties, namely: whether they are severe, moderate, or mild, the student will go up the ladder of the education system. This paper will focus on how visual information is processed and how it can aid or hinder the abilities of students to learn. It will underline how visual perception is at the heart of effective learning and what methods can be adopted to tackle visual perceptual difficulties.

Learning relies on...

There is a general agreement that learning relies on our senses and more. It relies on our senses but also on our sensory processing, which is perception. Sensory processing is beyond our senses. Information from our senses is transmitted to the brain which has the function of processing the information it receives. There are different senses namely: vision (eyes), tactile (touch), gustatory (taste), olfactory (smell), auditory (hearing), proprioceptive (body position and orientation in space), vestibular (inner ear – movement, gravity and vibration, also significant for balance)² and interoception (feeling of hunger, thirst, bowel movement, and urination).³

This paper focuses on the processing of visual information. Effective visual processing can lead the person to achieve in one's studies and feel confident in one's learning abilities. So how the brain effectively processes this information is at the heart of the learning process. When there are difficulties with visual processing, the person doubts one's abilities, struggles in the learning process and can easily give up and quit one's studies.

1 The European Agency for Special Needs and Inclusive Education, *Education for All: Special Needs and Inclusive Education in Malta. External Audit Report* (Brussels, 2014), 85.

2 L. Biel and N. Peske, *Raising a Sensory Smart Child* (London, 2009).

3 <http://spdlife.org/aboutspd/senses/interoception.html>

Sensation versus perception

Myers describes sensation as: ‘the process by which our sensory receptors and nervous system receive and represent stimulus energies from our environment’.⁴ This implies that our senses are detecting physical energy and transmitting it to the brain.

Perception is another different process in which the brain organizes and interprets sensory input. It ensures that meaningful recognition of objects and events result.⁵ The brain carries out the process of ‘transduction’. Transduction has been explained as the process of converting one form of energy into another, which the brain will use.⁶ In the case of vision, the eyes process light energy. In the eyes, light energy is transformed into neural impulses and then delivered to the brain. Visual perception occurs at brain level and not at eye level.

So what is a visual perceptual processing difficulty?

A perceptual processing difficulty is ‘a hindered ability to make sense of information taken in through the eyes’.⁷ Therefore, the student may or may not have problems with one’s sight namely: one’s eyes. The difficulty is occurring at brain level. In itself this is often difficult to explain to educators. It is not a visible difficulty but it is definitely a very real difficulty.

As Helen Irlén reports in her book *The Irlén Revolution*,⁸ when someone has problems with reading it is often assumed that the cause is a vision one or else the person is blamed as not trying hard enough to reach the required level. Often educators pass comments on the students’ lack of motivation to study and engage in the learning process. Few think that it has to do with how the brain is processing visual information.

4 D.G. Myers, *Psychology* (New York, 2013), 218.

5 Ibid.

6 Ibid

7 Irlén Syndrome Foundation, *The Educator Toolkit: What Educators Need to Know About Irlén Syndrome*, https://www.irlensyndrome.org/wp-content/uploads/2015/09/powerpoint-EDUCATOR_Toolkit-02.pdf, 6.

8 H. Irlén, *The Irlén Revolution* (New York, 2010).

What is Irlen Syndrome?

Irlen syndrome, originally known as Scotopic Sensitivity Syndrome (henceforth SSS), is a perceptual dysfunction and not a vision problem.⁹ It rules out difficulties with the functioning of the eyes. Irlen Syndrome can co-exist with difficulties of the eye or it can still be present despite the person has perfect eyesight. It is a neurological condition and so it has to do with how the brain processes visual information. Not all persons are affected by Irlen Syndrome in the same way. Irlen Syndrome can be mild, moderate, or severe. It occurs on a ‘continuum’.¹⁰

Helen Irlen in her *Reading by the Colors*¹¹ has reported that:

Individuals with SSS can experience a number of symptoms including:

- Words seeming to fall off the page
- Words moving together
- Letters reversing and rotating
- Letters switching around
- Background pulsating
- Background flashing and twinkling
- Background being bright and uncomfortable.

As a result, the reader will encounter reading difficulties. Such difficulties can be seen in slow, inefficient reading. The person may feel tired and falls asleep whilst reading. Continuous reading poses challenges and one can suffer from headaches and nausea. People suffering from Irlen Syndrome may also have other difficulties which are beyond reading, namely math calculation, music notes reading, copying, writing, depth perception, sports performance, and other areas not connected with another condition: dyslexia.

It is often the case that people confuse Irlen Syndrome with dyslexia. Recently the International Dyslexia Association (IDA) has redefined dyslexia as a language-based disorder.¹² It is no longer considered as a problem of switching of letters and words but rather it is the persons’ inability to connect letters and words they see on page with sounds and

9 Id., *Reading by the Colors* (New York, 2005).

10 Ibid.

11 Ibid.

12 *The Parent Toolkit*.

meanings.¹³ Furthermore, the remedial treatment in the case of dyslexia has been an approach using phonics and a multisensory structured language to help individuals strengthen brain pathways to connect speech with print.

Who has Irlen Syndrome?

Irlen Syndrome is hereditary¹⁴ but can also be acquired following a head injury, concussion, or whiplash.¹⁵ It affects males and females equally and is found in a large number of the population.¹⁶ According to the Irlen Institute,¹⁷ it is mostly prevalent amongst students with learning and reading difficulties (46%) but it also affects students who are diagnosed with Attention Deficit Hyperactivity Disorder (henceforth AD/HD), Dyslexia, and behaviour problems (33%). Thirty per cent of students who are on the autism spectrum disorder have Irlen Syndrome. Nonetheless, this syndrome is prevalent amongst 14% of the average students and gifted, good readers and it is found in over 50% of those individuals who have suffered head injury, concussion, or whiplash.¹⁸

How to spot Irlen Syndrome

Someone suffering from Irlen syndrome will show one or more of the following symptoms: light sensitivity, inefficient reading, slow reading rate, attention deficit, strain or fatigue, and poor depth perception.¹⁹

A person who is light sensitive is bothered by glare, fluorescent lights, bright lights, sunlight, or driving at night. One can show discomfort and difficulty to concentrate and work under bright lights or fluorescent lights.²⁰

An inefficient reader will have difficulty to read print, numbers, or musical notes. The problems encountered may include print that

13 Ibid.

14 Irlen, *The Irlen Revolution*.

15 Id., *Sports Concussions and Getting Back in the Game of Life* (San Bernardino, 2015).

16 *The Educator Toolkit*.

17 Ibid.

18 Ibid.

19 Irlen, *Reading by the Colors*.

20 Irlen Institute, *Certified Irlen Screener's Information Handbook* (Long Beach).

shifts, shakes, blurs, moves, doubles, disappears, or becomes difficult to perceive.²¹

The slow reader is unable to read letters, numbers, and musical notes or words in groups and has problems in tracking, correctly identifying words, or skim and speed read.²²

Attention Deficit is present when there are problems in concentrating while reading or doing schoolwork. The person will also have difficulty staying on task. One needs frequent breaks, looks away, and becomes restless, fidgety, or tired whilst at task.²³

A person who has Irlen Syndrome will feel strain, tension, sleepy, and fatigued and is likely to suffer from headaches when reading and doing other perceptual activities. Strain can interfere with the ease of reading, studying, or even listening in class.²⁴

Finally a person with poor depth perception will not accurately judge distance or spatial relationships and may be unsure or have difficulty with escalators and stairs, and whilst playing ball sports during physical education lessons and/or driving.²⁵

What can be done to address Irlen Syndrome?

Apart from making the discovery of Irlen Syndrome, Helen Irlen set out to work and came up with methods that identified and provided a remedy to people who suffer from this condition. In fact, her work was significant to the development of two levels within the Irlen Method®: a screening level and a diagnosis level.

Screening

Screening of a student will identify whether Irlen Syndrome affects reading and learning. At this level, the screener can recommend the correct colour overlays to reduce the perceptual-based problems. Before screening, the student needs to undergo a visual examination by an optometrist or an ophthalmologist to correct a visual problem prior to getting treatment for perception.

21 Ibid.

22 Ibid.

23 Ibid.

24 Ibid.

25 Ibid.

During the screening, the student will be presented with tasks which identify the types of distortion that occur. A number of questions are asked by the screener which will tap on sensory issues, the individual's environment, reading habits, lights, unusual reactions to visual stimuli, as well as family history.²⁶ Screening will identify whether Irlen Syndrome experienced is slight, moderate, or severe.

A series of coloured overlays are presented to assess which one is most effective at improving reading ability and reducing the visual perceptual difficulties. The correct coloured overlay or a combination of overlays will correct the visual perceptual difficulties and then show how a reader without those difficulties experiences reading. Although coloured overlays can be helpful, there are candidates who would eventually need to make use of spectral filters. In this case, overlays can be insufficient to address their needs and are cumbersome and restrictive.²⁷

Diagnosis

At diagnosis level the correct spectral filter colour/s are selected. Irlen spectral filters can reduce or eliminate the distortions. The colour of the overlay is often not the colour of the filters and they ensure that perceptual distortions, which can be varied and severe, are addressed.²⁸

The diagnostician will help the individual to pick the colour/s most beneficial to address distortions. There is no universal colour. Individuals need a colour that is adapted specifically to them. To address Irlen Syndrome, the colour is carefully and diagnostically prescribed.

The advantage of the spectral filters is that they are worn as lenses or contact lenses. As a result they improve depth perception, sports performance, and make it easier to read under fluorescent lighting, read music, and take tests while eliminating headaches.²⁹

Other remedial actions and accommodations

Coloured spectral filters can be very helpful but for some individuals they are not enough. In this case it is best to eliminate white paper

26 Irlen, *Reading by the Colors*.

27 Ibid.

28 Ibid.

29 Ibid.

and use coloured paper to write, take notes, and do tests. For example, even the angle at which books are held can be very helpful. If one uses coloured filters, the choice of overlay has to be rechecked in view of the spectral filters.³⁰

Environmental modifications need to be carried out. This is very significant for the educator in order to see to the avoidance of bright or fluorescent colours. For example, the work attire should exclude stripes, plaids, and polka dots, as well as large or glittery jewellery or buttons. The use of indirect natural light is encouraged and fluorescent lights present should be covered with theatrical gels. Students should also be allowed to wear visors or brimmed hats. When using interactive whiteboards, the background should be grey or brown and educators should avoid at all costs coloured markers such as red and yellow as they are very hard to see. Any paper used should be recycled, off-white, and non-glare; different colours for different people should be used.³¹

Finally within the education system students are also assessed through exams and tests. In this case, the following is recommended. Tests papers should be duplicated on the applicable coloured paper. Coloured plastic overlays should be used. When scantron answer sheets are used, they should be duplicated on applicable coloured paper and students should be allowed to use a ruler. The last thing is the environment. The exam/test room should be lit by natural lighting.³² These accommodations will make sure that the student is tested on equal level playing field as other students who do not have this condition.

Conclusion

To ensure effective learning and success within the education system, the educator has to understand the student. It is futile to focus only on what meets the eye. To connect with one's students, the educator has to go beyond to what looks as behavioural or lack of motivation in the classroom and has to seek and learn about what could possibly be leading to such behaviour in class.

30 Irlen Institute, *Certified Irlen Screener's Information Handbook*.

31 Ibid.

32 Ibid. and Irlen Syndrome Foundation, *The Educator Toolkit*.

This paper has focused on a real and crude problem that students may be confronted with. Some might not even know that they have the visual perceptual difficulty known as Irlen Syndrome. Yet this syndrome may be contributing to difficulties for them to succeed in the education system. On a positive note, there are methods that can be adopted to counteract the difficulties faced by students with Irlen Syndrome. The role of the educator is to connect with the students so they are guided to seek the required support and succeed now and in their future studies.

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