Colourful wishes
The need for research-led practice extends to adjustment schedules

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Evidencing the value of learning and teaching

**Values**
This University values research-led teaching
Our learning and teaching should be evidence-based

**Challenges**
Learning and teaching are vastly multivariate interactions

**Choices**
Evidence of what?
What does good evidence look like?
Learning and Teaching Conference
The case of LEARNING STYLES

4 TYPES OF LEARNING STYLES

VISUAL
AUDITORY
READING/Writing PREFERENCE
KINESTHETIC

The 7 learning styles
visual solitary
aural social
verbal logical
physical

THE 8 LEARNING STYLES
Which One Works for You?
Learning Styles
Concepts and Evidence

Harold Pashler, Mark McDaniel, Doug Rohrer, and Robert Bjork

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Acceptable Evidence
In examples A, B, and C, the learning method that optimized the mean test score of one kind of learner is different from the learning method that optimized the mean test score of the other kind of learner.
Chapter 14

Rose-tinted? The use of coloured filters to treat reading difficulties

Robert D. McIntosh and Stuart J. Ritchie

Overview

In this chapter, we discuss the use of coloured filters to treat reading difficulties, and the theoretical and practical claims that underpin it. We review evidence for the efficacy of coloured filters, and report the results of a new trial in schoolchildren with reading difficulties. We conclude that there is a chasm between the dramatic claims often made for this treatment, and the small and inconsistent effects that have been demonstrated experimentally. Indeed, we suggest that coloured filters have no proven efficacy, beyond some probable placebo effect, and that their use should not be recommended to private individuals, or supported by public bodies. Resources should instead be directed towards better-proven remedial interventions.
I can read in red.

I can read in blue.

I can read in pickle color too.
1 in 2 people with reading problems has Irlen Syndrome, do you?
Take the Irlen Self-Test

Whether you have specific difficulties or just want answers, the first question is: Do you have Irlen Syndrome?

Find a Diagnostician

Irlen-certified diagnosticians and screeners can help you determine if you have Irlen Syndrome and how color can help you. You can find us in 170 clinics in the US and 46 countries throughout the world.

Do you skip words or lines when reading?
- Yes
- No

Do you reread lines?
- Yes
- No

Do you lose your place?
- Yes
- No

Are you easily distracted when reading?
- Yes
- No

Do you need to take breaks often?
- Yes
- No

Do you find it harder to read the longer you read?
- Yes
- No

Do you get headaches when you read?
- Yes
- No
The following research papers highlight the impact that Irlen Syndrome has on brain function and anatomy.

The most current research on Irlen Syndrome and the use of color utilizes advanced brain-mapping technology to show actual changes and normalization of brain functioning that is not achieved through ophthalmological treatments (plain lenses, prisms, or vision therapy). Researchers have utilized functional magnetic resonance imaging (fMRI), visual evoked responses (VER), and single photon emission computed tomography (SPECT) scans to objectively document the profound effects of visual sensory overload on the brain and the normalization of brain activity when individually-prescribed, precision-tinted colored filters are worn.

A Magnetoencephalographic Investigation of Visual Information Processing in Irlen’s Scotopic
Inverclyde

council

dislexia
friendly

Newark Primary School

Liz McKelvie

irlen Scotland
Hi Liz,

I think that this is an excellent opportunity and would encourage you to get involved. I would also like to offer my support and would like to write back, as well. I would like to help in the research design and provide them with contacts with others who have done research...

Colourful wishes,

Helen

Helen L. Irlen, MA, LMFT
Executive Director Irlen Institute International HQ
PPS Credentialed School Psychologist
Educational Therapist
Adult Learning Disability Specialist
Board Certified Professional Counselor
Licensed Therapist

Reading by the Colors: A Piece of the Puzzle
Selection by teachers

Irlen screening

Overlay provision

Double-masked treatment study (Moray Endowment Fund)

Reading tests

Orthoptic assessment
61 poor readers (aged 7-12)

14 non-Irlen

47 with Irlen diagnosis (77%)

43 double-masked

Double-masked treatment study
(Moray Endowment Fund)

Reading rate (words per minute) +/- SD

- Colourless
- Non-prescribed
- Prescribed

Non-Irlen (n=14)
Irlen group (n=43)
"This is a flawed study," Irlen said. "It was designed to set up for failure."
Irlen Colored Filters in the Classroom: A 1-Year Follow-Up

Stuart J. Ritchie¹, Sergio Della Sala¹, and Robert D. McIntosh¹

ABSTRACT—Colored filters are used to treat Irlen syndrome (IS), a controversial disorder posited to be the cause of a substantial proportion of reading difficulties. Previously, we found that Irlen colored filters do not produce any short-term alleviation of reading difficulties in schoolchildren aged 7-12. Here, we tested whether colored filters show benefits with longer-term use, in a subset of the original sample. We measured reading rate with and without filters in 18 children diagnosed with IS, who had been using the filters for 1 year, and compared the progression of their reading ability across the year against 10 poor-reader control children. The Irlen-treatment group did not read any faster when using their colored filter, and showed no disproportionate gain in reading progress across the year compared to controls. We conclude that Irlen filters do not benefit reading, even after 1 year of use.

Irlen syndrome (IS), also known as Meares-Irlen syndrome, scotopic sensitivity syndrome, or visual stress, is a controversial diagnostic entity that purportedly causes visual distortions and illusions when an affected person views text or other high-contrast patterns (Irlen, 1991; Wilkins, 2003). The Irlen Institute posits that these symptoms are often the cause of reading difficulties in up to 45% of individuals with “reading problems, dyslexia, and learning difficulties” (Perceptual Development Corporation, 1998), but also that they can be alleviated by the use of individually prescribed colored filters (Irlen, 2010; Wilkins, 1994). The colored filter treatment is not marketed as a cure for reading difficulties, but is believed to remove a barrier to reading development (Irlen, 2010). These filters, either in the form of tinted lenses or colored plastic Considerable controversy surrounds the efficacy of this treatment; three recent reviews (American Academy of Pediatrics, 2009; Hyatt et al., 2009; Royal College of Ophthalmologists, 2009) and one systematic review (Albon, Adi, & Hyde, 2008) have concluded that it should not be recommended for individuals with reading difficulties until more rigorous research shows positive effects.

Our recent study (Ritchie, Della Sala, & McIntosh, 2011) drew similar conclusions. We administered reading tests with and without colored overlays to 18 primary school children aged 7-12 years, 77% of whom had been diagnosed with IS by an Irlen Institute diagnostician. Importantly, the children diagnosed with IS were not informed of the color of their prescribed overlay before testing. Under these masked conditions, the overlays failed to produce any significant increase in the reading rate, as measured by the Wilkins Rate of Reading Test (WRRT), or global reading ability, as measured on the Gray Oral Reading Test (GORT). We concluded that Irlen colored filters do not alleviate reading difficulties.

Our study, like most previous work in this area, focused on the immediate effects of colored filters (though see Noble, Orton, Irlen, & Robinson, 2004; Robinson & Foreman, 1999a, 1999b). We compared reading with and without filters at a single time point in poor-reader children who had been prescribed the filters very recently. It is clear that the colored filter theory predicts an immediate benefit at this stage, but a further key predication concerns the longer-term benefits. As the filters are intended as a long-term aid, to be used on a continuing basis, they should facilitate reading even after extended periods of use. More crucially, because the filters purportedly remove a prior barrier to reading development, we should expect...
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Stuart J. Ritchie¹, Sergio Della Sala¹, and Robert D. McIntosh¹

ORIGINAL STUDY

14 non-Irlen

47 with Irlen diagnosis

61 poor readers (aged 7-12)

22 still using filters (overlays or lenses)

10 follow-up

18 follow-up
Irlen Colored Filters in the Classroom: A 1-Year Follow-Up

Stuart J. Ritchie, Sergio Della Sala, and Robert D. McIntosh

(a) WRRT
(b) GORT

Wilkins Rate of Reading Score (words per minute)

First study  Follow-up

First study  Follow-up

GORT Oral Reading Quotient
Consistent with previous reviews and advice from several professional bodies, we conclude that the use of coloured lenses or overlays to ameliorate reading difficulties cannot be endorsed and that any benefits reported by individuals in clinical settings are likely to be the result of placebo, practice or Hawthorne effects.
Formal adjustments: Exam questions on specific coloured paper (n=48)
Answer scripts on specific coloured paper (n=32)

Student study supported by provision of coloured overlays, and assistive software to change screen background or font colour/style. Most commonly for students with a diagnosis of dyslexia, but other conditions which entail some form of visual stress (such as severe migraines, Meares Irlen Syndrome or an acquired brain injury)...

“Meares Irlen Syndrome is not something that we would assess for or diagnose within the Student Disability Service. It is generally diagnosed by an optician/optometrist, who has received the relevant training in the diagnosis of the condition. There are a few opticians in Edinburgh who can provide this service, including Downes Opticians and Black and Lizars.”
Open questions

Should we allocate resources to poorly evidenced methods to assist student learning?

Should we deny students such resources if they believe that they need them in order to study/perform effectively?

Do we aim to maximise student satisfaction, or educational attainment?

Do our answers to such questions communicate our institutional values, and the value that we place on evidence?
