# Open Science and Access to Research for Teachers

Dr Eamon Costello
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@eam0

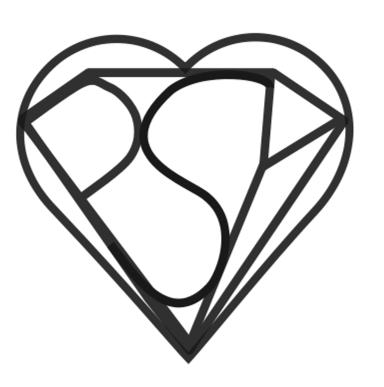


### In a nutshell

Research is a vital and amazing human activity.
 Its findings should be accessible to all

Research is big business. Research has many vested interests

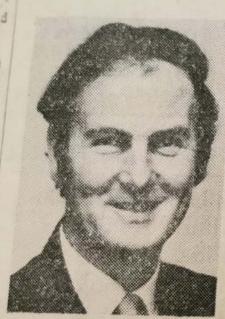
 Open hearts and open minds are required in order to develop research-informed teaching



@eam0 —



## Dubliner is head of new 'open university'



Chris Curran . . . will head "Open University".

land's "Open University" is Dubliner Chris Curran, current head of the training and information centre at an Foras For- to make educatio bartha.

He has been appointed to the irrespective of the challening post of head of the social, economic o Distance Education Unit at the circumstances. National Institute of Higher The unit will Education in Glasnevin.

The N.I.H.E., along with cordings and loc R. F.E., is due to launch the get its message first pilot programems on an students. Open University-type system early next year.

A spokesman for the N.I.H.E. lives in Blackrock

THE MAN who will head Ire- said the appointment marked a significant step forward in the development of distance education in Ireland.

> The objective of tions available to

radio and televisi

The new head. married with two DCU Open Education

# mode





Journal

### Open Learning: The Journal of Open, Distance and e-Learning >

Volume 28, 2013 - Issue 3: Opening up education: the challenges for institutions offering online and blended learning. Research Papers from the EADTU conference 2013

1,071 16 17
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Articles

## Opening up to open source: looking at how Moodle was adopted in higher education

Eamon Costello

Pages 187-200 | Published online: 10 Mar 2014

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https://doi.org/10.1080/02680513.2013.856289

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Articles

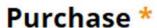
## Opening up to open source: looking at how Moodle was adopted in higher education

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Pages 187-200 | Published online: 10 Mar 2014

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#### Opening up to Open Source



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2021

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## Opening up to open source: looking at how Moodle was adopted in higher education

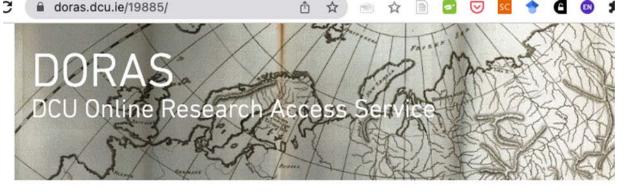
E Costello - Open Learning: The Journal of Open, Distance and e ..., 2013 - Taylor & Francis

... Moodle is built not only of **open source** software but also upon it. Because the database and operating system for running Moodle can be **open source** and free, the cost of set-**up** can be ...

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## Green Access



ogin (DCU Staff Only)

## Opening up to open source: looking at how Moodle was adopted in higher education

Costello, Eamon (5) (2014) Opening up to open source: looking at how Moodle was adopted in higher education. Open Learning: The Journal of Open, Distance and e-Learning, 28 (3), pp. 187-200. ISSN 1469-9958

Full text available as:



PDF - Requires a PDF viewer such as GSview, Xpdf or Adobe Acrobat Reader 621kB

#### Abstract

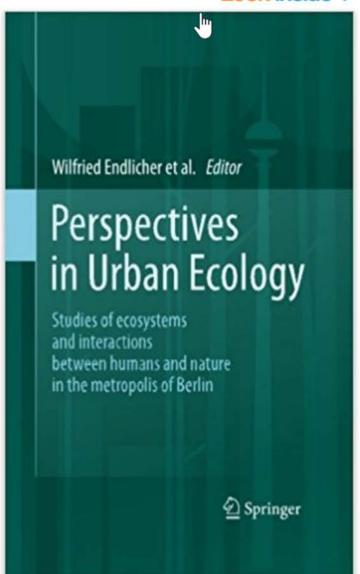
The Virtual Learning Environment (VLE) has grown to become a piece of complex infrastructure that is now deemed to be critical to higher educational provision. This paper looks at Moodle and its adoption in higher education. Moodle's origins, an open source VLE, are investigated and its growth examined in the context of how higher educational institutions adopt VLEs.

Item Type:	Article (Published)
Refereed:	Yes
Uncontrolled Keywords:	Moodle: Virtual Learning Environments: VI Es
Subjects:	Social Sciences > Distance education Social Sciences > Educational technology

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## **Anatomy and Physiology**

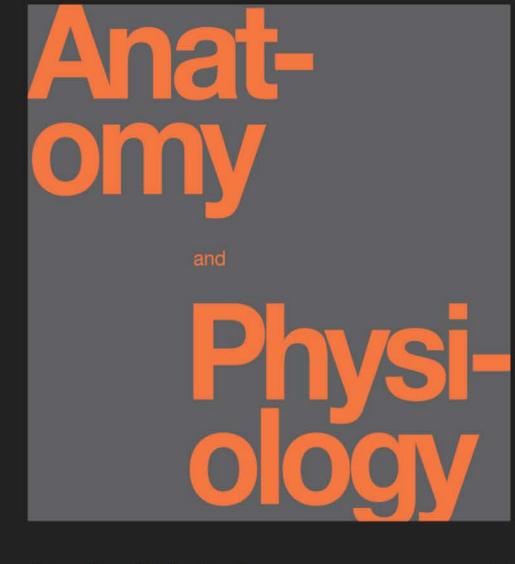
OpenStax

Human Anatomy and Physiology is designed for the two-semester anatomy and physiology course taken by life science and allied health students. The textbook follows the scope and sequence of most Human Anatomy and Physiology courses, and its coverage and organization were informed by hundreds of instructors who teach the course.





**Creative Commons Attribution** 



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#### Education

### Ireland's €1,518 'free' education: Is there a better way than the current system?

Other developed countries provide books and balk at the idea of 'voluntary' contributions





Devices such as iPads are compulsory purchases in a growing number of Irish second level schools. For many parents the cost is close to €1,000 when other costs are factored in. Photograph; Alan Betson



Carl O'Brien Tue Aug 30 2022 - 00:00



## UCC nursing students 'strongly' advised to hold off buying 'required' iPads

UCC students' union has flagged the issue with School of Nursing, which is currently requiring all first-year students to have access to their own personal Apple device, with costs of more than €700



The UCC School of Nursing is currently requiring all first-year students to have access to their own personal Apple device, either an iPad or an iPad mini, iOS 12 or higher, and an Apple pen.

THU, 22 SEP, 2022 - 02:37

evices such as iPads are compulsory purchases in a gr 1,000 when other costs are factored in. Photograph: Ala

"As for ebooks, the Irish Educational Publishers' Association says digital licences are the same as in any other industry that uses licensing and permissions to use the service, whether it is music streaming, software security or movie and programme streaming."



Carl O'Brien
Tue Aug 30 2022 - 00:00













#### OPEN (TRANSPARENT) SCIENCE

scientific process and results should be visible, accessible, and understandable



data, tools, software, documentation, and publications should be accessible to all (FAIR)





#### **OPEN (INCLUSIVE) SCIENCE**

process and participants should welcome participation by and collaboration with diverse people and organizations

#### OPEN (REPRODUCIBLE) SCIENCE

scientific process and results should be open such that they are reproducible by members of the community

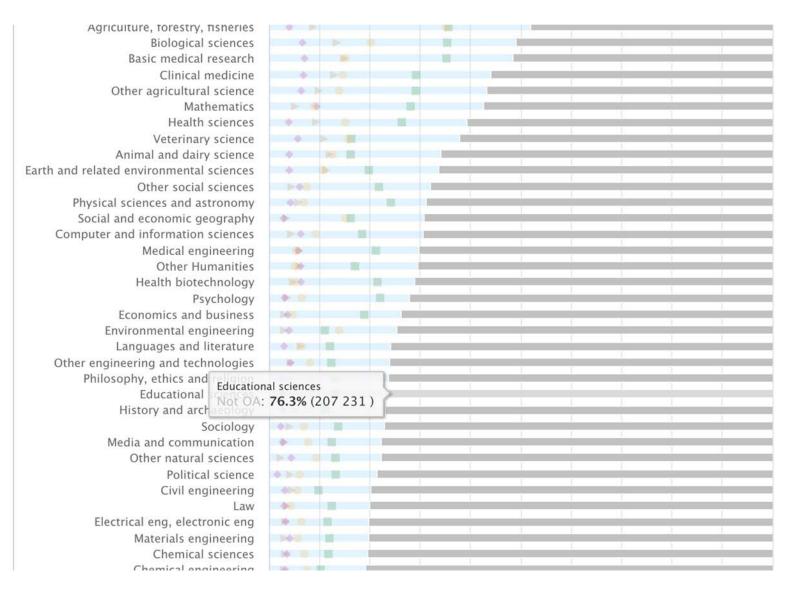


## Open hearts and open minds for better research





## **EU Open Science Monitor**



What information is available?

Open access to publications

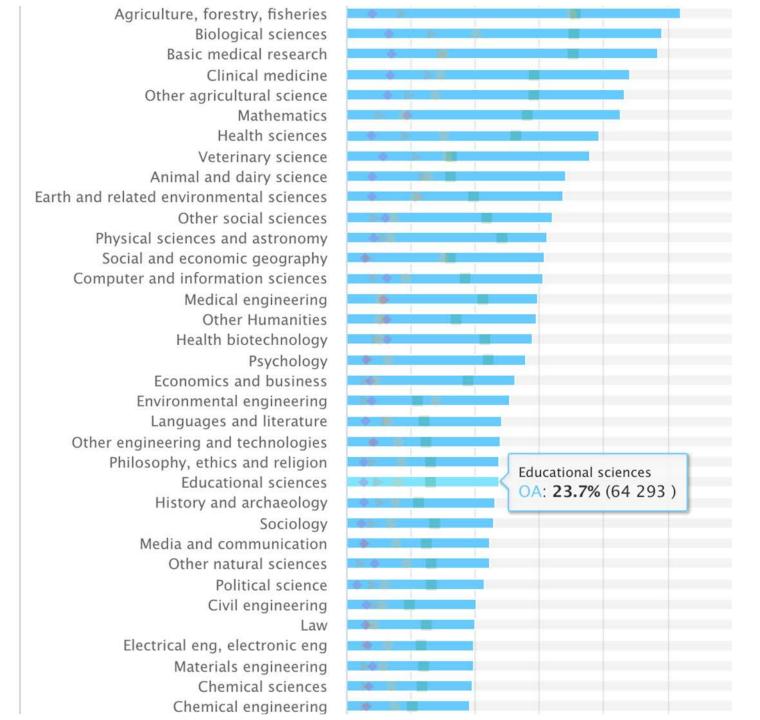
**Altmetrics** 

**Funders' policies** 

Research journal policies

**Additional indicators** 

**Case studies** 









International Review of Research in Open and Distributed Learning Volume 21. Number 1

January - 2020

Open and Shut: Open Access in Hybrid Educational Technology Journals 2010 – 2017

Earnon Costello\*, Tom Farrelly\*, and Tony Murphy\*
Dubin Gly Innensity\*, askitute of Technology Texase\*, Futbin Business School\*

#### Abstract

Lattle is known about open access publishing in educational technology journals that employ a hybrid model which charges authors only if they wish to publish via gold open access. In this study we sought to address this gap in the wholsely understanding of open acress publishing in physid journals that publish respect into the intersection of education and technology. We analyzed three entegories of article access types gold, green, and himfed access, and collected data on their prevalence in the seven-year period from 2010-2017 across 29 journals. Data was gathered from Scopus. Unpayentll, Sherpa RodIIO, and via manual searches of the journal websites, resulting in a dataset comprising the metadata of 5,179 articles. Our findings highlight that more reasonsh remains looked behind payealls, that open access publishing through legal means is a minority activity for the achieves involved, and that the compressing and coats of legal open access publishing in these journals may be inhibiting the cossibility of organization are be inhibiting the cossibility of respect to constitution.

Kegusorás: open access, open acholarship, open education, educational technology research, gold open access, publishing

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Institute of Technology,
Tralee

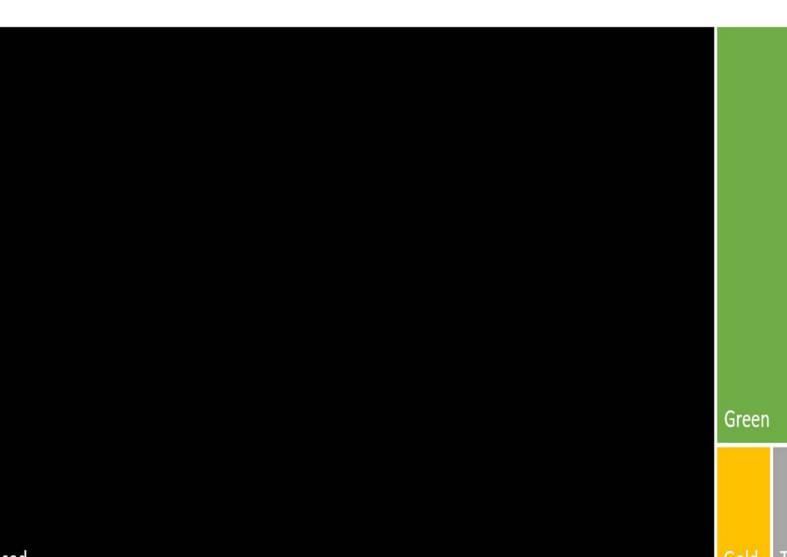
Dr. Tony Murphy
@tonylta
Dublin Business School

#### **The Paper**

IRRODL, 2020, Vol. 28 (1)

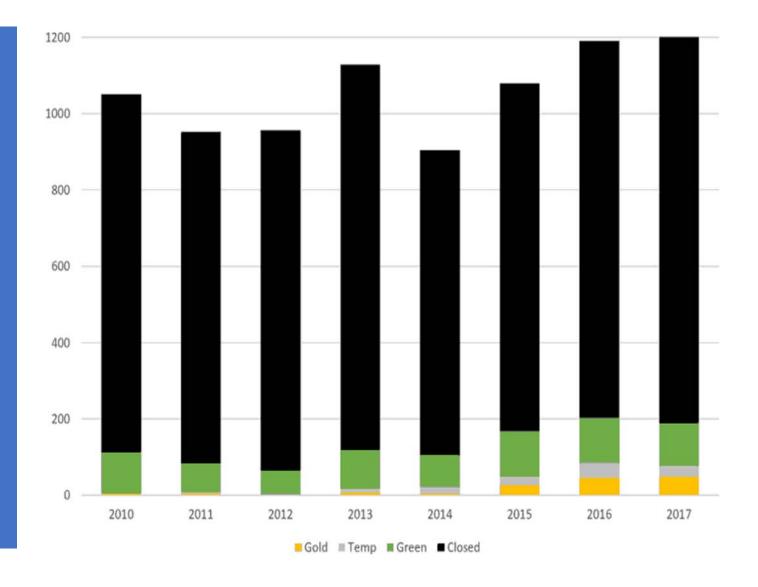
Open Access in Hybrid E-Learning Journals 2010 - 2017





Using Scopus, unpaywall and manual searches we determined the #OpenAccess status of 8,425 articles from 29 #EdTech journals. 7,553 articles (89%) are locked up behind paywalls

- Green represents authors using a repository to selfarchive a version of their article.
- Gold is a "born free" article on a journal website, usually via @creativecommons.
- There is some increase in these in recent years



### Fauxpen Access

They are "free" but • Bronze??? are they "open"? We • The fourth colour of caution that they may access type we made be fauxpen access grey, because, well articles, more pyrite it's a grey area. than bronze.

## Article Processing Charges (APCs)

Journal	Publisher	APC	
Journal of Computer Assisted Learning	Wiley-Blackwell	\$3,200	
Government Information Quarterly	Elsevier	\$1,100	
Internet and Higher Education	Elsevier	\$1,800	
Computers and Education	Elsevier	\$1,950	
Reference Services Review	Emerald Group Publishing	\$2,650	
Transforming Government: People, Process, and Policy	Emerald Group Publishing	\$2,650	
IEEE Transactions on Learning Technologies	IEEE Education Society	\$1,950	
International Journal of Distance Education Technologies	IGI Global	\$1,500	
International Journal of Electronic Government Research	IGI Global	\$1,500	

International Journal of Lifelong Education	Informa/Taylor & Francis	\$2,950
Internet Reference Services Quarterly	Informa/Taylor & Francis	\$2,950
Journal of Library and Information Services in Distance Learning	Informa/Taylor & Francis	\$2,950
New Review of Academic Librarianship	Informa/Taylor & Francis	\$2,950
International Review of Education	Springer Nature	\$3,000
Education and Information Technologies	Springer Nature	\$3,000
International Journal of Artificial Intelligence in Education	Springer Nature	\$3,000
Journal of Continuing Education in the Health Professions	Wiley-Blackwell	\$2,100
British Journal of Educational Technology	Wiley-Blackwell	\$3,000

"Publishers argue that they add value to the publishing process"

Investment analysts, however, have been skeptical of the value added by for-profit publishers, as exemplified by a 2005 Deutsche Bank analysis which stated that "we believe the publisher adds relatively little value to the publishing process... We are simply observing that if the process really were as complex, costly and value-added as the publishers protest that it is, 40% margins wouldn't be available."



Is the staggeringly profitable business of scientific publishing bad for science?



Authors pay an Article Processing Charge (APC) to the publisher to publish gold open access in a hybrid journal.

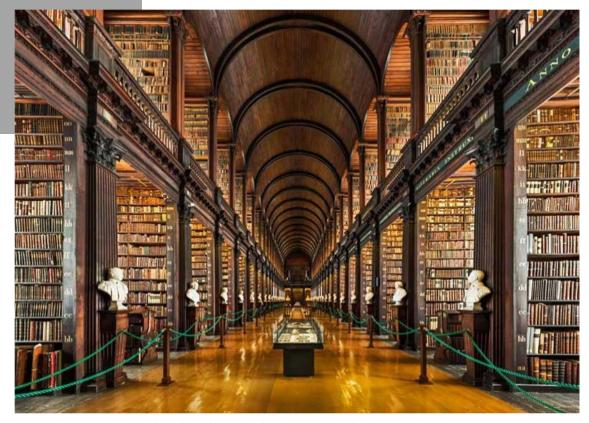
Overall these articles could have cost authors up to \$364,850

However, if all 8,425 articles in the corpus had paid an APC to be gold open access this could have cost \$21 million.



- We have used the term temporary access in order to provide a clear technical impression of the nature of articles that appear with the word "free" on journal websites.
- Several of the temporary access articles we discovered during the manual search, had soon after disappeared back behind paywalls.
- Sept 2018 n=161; December 2019 n= 41





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Better education of scholars in how they can publish pre and post prints of their work is important. Talk to your librarian.

## Scholars may be under increasing pressure to publish in prestigious closed and hybrid journals.



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Access to research would seem a fundamental starting point for good scientific literacy





# Interview with Dylan Wiliam (continued): The Limitations of Meta Studies - Episode 34

Pedagogy Non-Grata

Education



In this episode we discuss the possible limitations of metaanalysis in education and how to best determine the quality of an individual education paper.









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RCTs focus on one validity hazard but ignore others

Can results of RCTs be generalised if control group are not representative because they volunteered for the trail.

Do we group kids by ability? Does this just become by teacher ability?



## Interview with Dylan Wiliam (continued): The Limitations of Meta Studies - Episode 34

Pedagogy Non-Grata

Education

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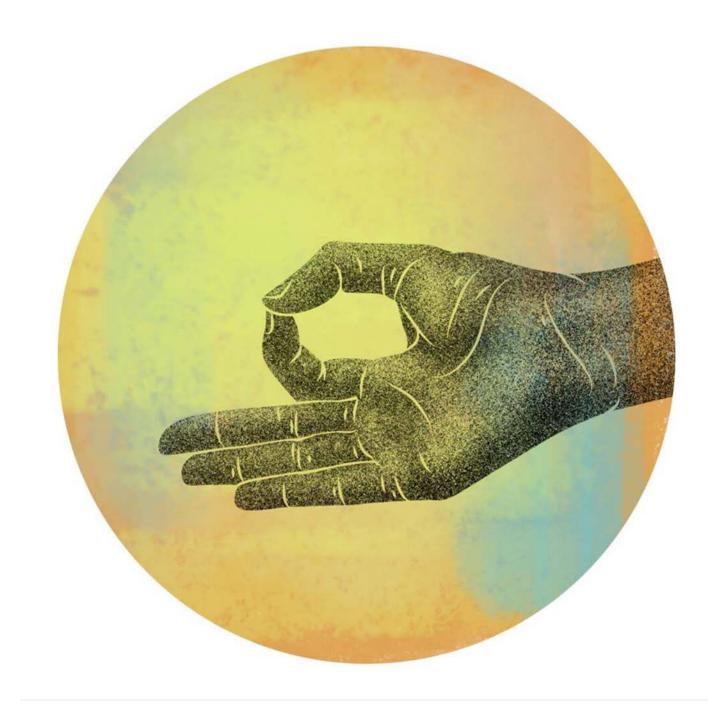


In this episode we discuss the possible limitations of metaanalysis in education and how to best determine the quality of an individual education paper.





## Meditation





#### Mindfulness lessons in schools do not improve children's mental health

Large-scale study reveals that meditation makes no difference to pupils' mood - and in some cases, it makes it worse

By Sarah Knapton, SCIENCE EDITOR

12 July 2022 • 11:30pm















Researchers discovered that eight in 10 children were not interested enough to practise mindfulness at home



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#### Mindfulness lessons in schools do not improve children's mental health

UK news > Politics > World > Coronavirus > Royals > Health Defence Science Education

Large-scale study reveals that meditation makes no difference to pupils' mood - and in some cases, it makes it worse

By Sarah Knapton, SCIENCE EDITOR

12 July 2022 • 11:30pm













Researchers discovered that eight in 10 children were not interested enough to practise mindfulness at home

#### School-Based Mindfulness Program Improves School Culture, Reduces Teacher Burn Out

July 13, 2022 University of Cambridge



A standardised schools-based mindfulness training programme did not help young people's mental health and well-being overall, but did improve school culture and reduce teachers' burn out, a new study has found.



**ORIGINAL RESEARCH** 

## School-based mindfulness training in early adolescence: what works, for whom and how in the MYRIAD trial?

Jesus Montero-Marin , <sup>1,2</sup> Matthew Allwood, <sup>1</sup> Susan Ball , <sup>3</sup> Catherine Crane, <sup>1</sup> Katherine De Wilde, <sup>1</sup> Verena Hinze, <sup>1</sup> Benjamin Jones, <sup>3</sup> Liz Lord, <sup>1</sup> Elizabeth Nuthall, <sup>1</sup> Anam Raja, <sup>1</sup> Laura Taylor, <sup>1</sup> Kate Tudor, <sup>1</sup> MYRIAD Team, <sup>1</sup> Sarah-Jayne Blakemore, <sup>4,5</sup> Sarah Byford, <sup>6</sup> Tim Dalgleish, <sup>7</sup> Tamsin Ford, <sup>8</sup> Mark T Greenberg, <sup>9</sup> Obioha C Ukoumunne, <sup>3</sup> J Mark G Williams, <sup>1</sup> Willem Kuyken <sup>10</sup>

► Additional supplemental material is published online only. To view, please visit the journal online (http://dx.doi. org/10.1136/ebmental-2022-300439).

For numbered affiliations see end of article.

#### Correspondence to

Professor Willem Kuyken, University of Oxford Department of Psychiatry, Oxford, UK; willem.kuyken@psych.ox.ac.uk

S-JB, SB, TD, TF, MTG, OCU, JMGW and WK are joint senior authors.

Received 3 February 2022 Accepted 16 May 2022 Published Online First 7 July 2022

#### **ABSTRACT**

**Background** Preventing mental health problems in early adolescence is a priority. School-based mindfulness training (SBMT) is an approach with mixed evidence.

**Objectives** To explore for whom SBMT does/does not work and what influences outcomes.

Methods The My Resilience in Adolescence was a parallel-group, cluster randomised controlled trial (K=84 secondary schools; n=8376 students, age: 11–13) recruiting schools that provided standard social—emotional learning. Schools were randomised 1:1 to continue this provision (control/teaching as usual (TAU)), and/or to offer SBMT ('.b' (intervention)). Risk of depression, social—emotional—behavioural functioning and well-being were measured at baseline, preintervention, post intervention and 1 year follow-up. Hypothesised moderators, implementation factors and mediators were analysed using mixed effects linear regressions, instrumental variable methods and path analysis.

Findings SBMT versus TAU resulted in worse scores on risk of depression and well-being in students at risk of mental health problems both at post intervention and 1-year follow-up, but differences were small and not clinically relevant. Higher dose and reach were associated with worse social—emotional—behavioural functioning at postintervention. No implementation factors were associated with outcomes at 1-year follow-up. Pregains—postgains in mindfulness skills and executive function predicted better outcomes at 1-year follow-up, but the SBMT was unsuccessful to teach these skills with clinical relevance.

#### WHAT IS ALREADY KNOWN ON THIS TOPIC

⇒ There are systematic reviews and meta-analyses demonstrating the potential effectiveness of school-based mindfulness training (SBMT). However, the first arguably adequately powered trial found no main effects, inviting the questions: are there subgroups who do and do not benefit? how does implementation impact effects? and how might SBMT exert any effects?

#### WHAT THIS STUDY ADDS

⇒ This study includes consideration of theoretically driven potential moderators, implementation factors and mediators of a universal SBMT (the '.b' programme). It suggests iatrogenic effects in those with mental health difficulties, and that while mindfulness and executive functioning skills are associated with resilience, this programme does not teach these skills.

#### HOW THIS STUDY MIGHT AFFECT RESEARCH, PRACTICE AND/OR POLICY

⇒ The use of this specific school-based mindfulness curriculum (.b), as a universal intervention for young people in early adolescence, is not indicated. Future research should explore whether different social emotional trainings might be appropriate to promote mental health, paying close attention to the unique needs of young people in terms of their age and mental health status.

SBMT as delivered in this trial is not indicated

**Funding:** This research was funded in whole, or in part, by the Wellcome Trust (WT104908/Z/14/Z and WT107496/Z/15/Z) and supported by the National Institute for Health Research Clinical Research Network. For the purposes of open access, the author has applied a CC BY public copyright licence to any author accepted manuscript version arising from this submission. JM-M has a "Miguel Servet" research contract from the ISCIII (CP21/00080). SBa, BJ and OCU were supported by the National Institute for Health Research Applied Research Collaboration South West Peninsula. The views expressed in this publication are those of the authors and not necessarily those of the National Institute for Health Research or the Department of Health and Social Care.

**Competing interests:** WK is the director of the Oxford Mindfulness Centre and receives royalties for several books on mindfulness. JMGW is former director of the Oxford Mindfulness Centre and receives royalties for several books on mindfulness.

Provenance and peer review: Not commissioned; externally peer reviewed.

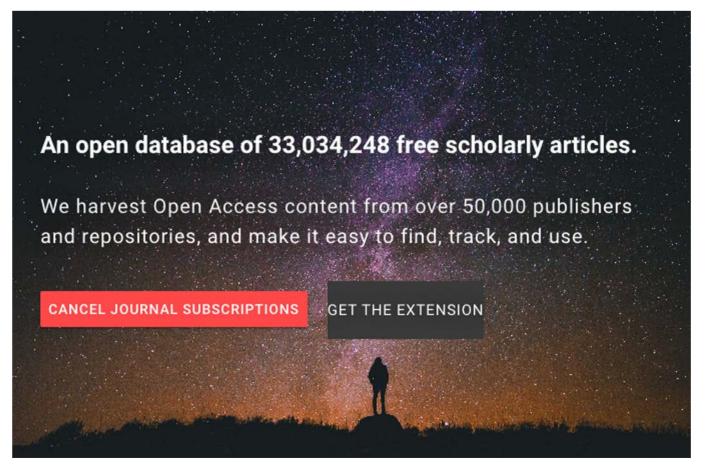
## Naomi Oreskes Why Trust

"If the history of science teaches anything, it is humility. Smart, hard-working, and well-intentioned scientists in the past have drawn conclusions that we now view as incorrect. They have allowed crude social prejudice to inform their scientific thinking. They have ignored or neglected evidence that was readily available. They have become fetishists about method. And they have successfully persuaded their colleagues to take positions that in hindsight we see as incorrect, immoral, or both."

"In evaluating a scientific claim that has social, political, or personal consequences there is one more question that needs to be considered: What are the stakes of being wrong in either direction? What is the risk of accepting a claim that turns out to be false versus the risk of rejecting a claim that turns out to be true?"



## Accessing research



- Google Scholar
- Unpaywall
- Libraries
- Phone a friend (aka ask an author)

## Non legal options





...to remove all barriers in the way of science

## Non legal options

SCI-HUB

...to remove all barriers in the way of science

"Sci-hub is a neccessary act of civil disobedience"





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#### Who's downloading pirated papers? Everyone

Data from the controversial website Sci-Hub reveal that the whole world turns to it for journal articles.

JOHN BOHANNON

SCIENCE · 29 Apr 2016 · Vol 352, Issue 6285 · pp. 508-512 · DOI: 10.1126/science.352.6285.508











Just as spring arrived last month in Iran. Meysam Rahimi sat down at his university

#### Five most downloaded papers

1. Full-scale modal wind turbine tests: comparing shaker excitation with wind excitation. Structural Dynamics and Renewable Energy, 2010

2. Comprehensive, Integrative Genomic Analysis of Diffuse Lower-Grade Gliomas, The New England Journal of Medicine, 2015

 Photosensitive field emission study of SnS<sub>2</sub> nanosheets Journal of Vacuum Science & Technology B, 2015

2991

4. Griffiths effects and quantum critical points in dirty superconductors without spin-rotation invariance One-dimensional examples, Physical Review B, 2001

5. Iron deficiency: new insights into diagnosis and treatment, Hematology 2015, 2015

2528

## Key takeaways

Research is a vital and amazing human activity.
 Its findings should be accessible to all

Research is big business. Research has many vested interests

 Open hearts and open minds are required to develop research-informed teaching

