

FEBRUARY 2023

ATP TODAY

The Magazine of the Association for the Teaching of Psychology

HIGHLIGHTS

ATP INTERNATIONAL PSYCHOLOGY
TEACHER'S CONFERENCE 2023

RETRIEVAL PRACTICE

IS EDUCATION TECHNOLOGY
REALLY THE FUTURE



We welcome contributions and letters from readers. Please send your correspondence to the Editor. The Editor reserves the right to edit and/or amend all articles submitted. **The views expressed by contributors to the magazine are their personal views, and publication does not mean that those views are endorsed by the ATP or the publisher.**

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Please send correspondence, and submissions, as a Word document. Photographs should be supplied as jpegs and as separate files not embedded into Word documents.

The General Data Protection Regulation (GDPR) (Regulation (EU) 2016/679) is a regulation by which the European Parliament, the Council of the European Union and the European Commission intend to strengthen and unify data protection for all individuals within the European Union (EU). In line with this directive the ATP would like to remind you of our data protection policy.

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The Association for the Teaching of Psychology

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www.theatp.uk



FROM THE CHAIR

Hello and welcome to the Spring edition of the ATP Today magazine. As the countdown to exams approaches, I'm sure I'm not the only one looking at ways of encouraging students to engage in effective revision outside of lessons. I find that plenty of online self-marking quizzes to prompt recall of content and then exam questions for technique are a good combination. Which activities do you think are the most useful for students outside of lesson time? Would you like to write an article sharing your techniques and activities? We are always looking for new and interesting articles for the magazine, so please get in touch if you would like to help your fellow teachers develop their skills and knowledge.

The Brain Teasers puzzle page had a rocky return, with no one entering the competition. I think I might have made it too challenging – my bad, sorry. I will extend the deadline for entries in case anyone wants to have another go. Hopefully more people will enter this edition's word search. Remember that there is an Amazon voucher up for grabs!

One contentious issue that you can't avoid at the moment is strikes. So many unions have balloted their members regarding strikes for better pay and conditions. Work forces in transport, health,

mail, energy, the civil service and, of course, the education sector, have all been invited to vote on the decision to strike. As I am writing this, the NASUWT and the NEU are soon to close their ballots and teachers in Scotland, as well as lecturers in the U.K., have already exercised their rights to strike. However, there has been talk of the Government looking into ways of banning strike action in critical work forces to reduce the impact on the general public and businesses.

So, the question is: should teachers be able to strike? What do you think? I'd love to hear your opinions on social media; you can find us on Facebook, Twitter, Instagram and LinkedIn. Our next edition of ATP Today will feature an opinion page looking at your responses. Be sure to check out the first opinion page in this magazine featuring your views about qualifications and assessments.

In the meantime, we hope you've enjoyed your Winter break and have started a new calendar year feeling refreshed. Hopefully you'll be inspired to try something from this edition of the ATP Today.

Amy Halsall
#Psych4Life



FROM THE EDITOR

It has been a real pleasure again to edit ATP Today. I love reading and editing all the articles that teachers and students send in – such a font of knowledge. It's always great to find teaching ideas to add to the classroom or update my subject knowledge.

You might have noticed a theme in my front covers – one of Mindfulness. In our busy, often stressful lives, I think it is so important to take a bit of time to stop and for a few minutes to just unwind. I love this front cover image, because dancing in the rain is one of my very favourite things to do. That and hugging trees and watching the stars.

I am so looking forward to this year's conference. It marks our 40th anniversary of ATP Conference and will be the 10th one that I have organised. How times flies! I do hope you can join us, we will have such a party atmosphere as well as all the excellent CPD and networking. We have lots lined up for you. Book early and take advantage of our early bird rate which ends on April 1st.

There are some fantastic articles for you in this edition of ATP Today. Evie Bentley's article on using animals for research is a thought-provoking read. Toni Haig's article reports on research that

conducted on A level students in her school to see if Psychology students have the edge over other students in terms of effective revision techniques and metacognition. Charlotte McKessy and Charlotte Bradshaw-Smith carry on the theme of revision techniques by looking at how they embed retrieval practice within their classroom with some really useful tips. These are just a few of the brilliant articles.

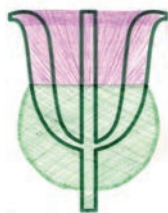
If you are interested in writing for ATP Today, please do not hesitate to contact us. We are always looking for Teaching and Learning and Feature articles. Again, we can offer support and advice if you have not written before and it looks great on your CV.

Wishing you a happy and healthy 2023, and I hope to see you at the University of Kent in July.

With very best wishes

Best wishes
Helen J. Kitching,
CPsychol, FBPsS, BSc, MSc
ATP Today Editor, ATP Conference Organiser..

ATP Scotland



ATPS

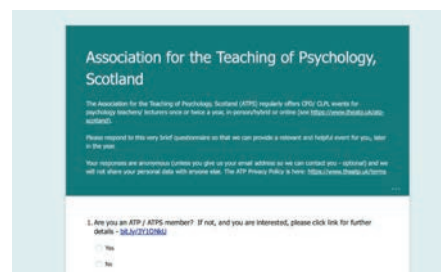
The Association for the Teaching of Psychology–Scotland (ATPS) have been working hard on behalf of its members and are concentrating on the following for 2023.

The ATPS are further developing the links with BPS Scotland working on some collaborative projects with members from both organisations, and updates will be shared with all as soon as possible.

I was very lucky to represent the ATPS and

its members at the European Federation of Psychology Teachers' Associations (EFPTA) meeting in Watford, in November, and I am looking forward to hosting the November 2023 meeting in Scotland.

Our CPD focus this year is to try and get us all back face-to-face to allow us to share good practice and more importantly to network with each other on a more informal basis over a coffee or lunch break. I know how much I have missed that. Hopefully you have completed the online survey to let us know what you are looking for in terms of venue, topics and timings. If not please do have a go at answering



the following for us - <https://forms.office.com/e/vmyALLYVQE>

We will then use your responses to tailor something that you, the members want.



MAIRI RICE, ATPS

EUROPEAN FEDERATION OF PSYCHOLOGY TEACHERS' ASSOCIATIONS

The most recent meeting of the European Federation of Psychology Teachers' Associations took place at Watford on 18-19 November, hosted by Jock McGinty. Mairi Rice was welcomed as the new rep for Scotland, representing the Association for the Teaching of Psychology Scotland (ATPS), taking over the role from Morag Williamson (who continues on the Board as Secretary). Mette Eggertsen, President, previewed the major EFPTA events 2023-24, including the upcoming webinar on 18 March 2023 on the topic of Climate change & sustainability in psychology education.

The theme of climate change and sustainability is highly topical, and psychologists and psychology educators are increasingly concerned about the effects of the climate crisis on the wellbeing of young people. Should all schools in Europe teach about climate change and sustainability in the core curriculum? Will psychological literacy help young people to understand and cope with the challenges they will face in their future lives due to climate change?

Join our webinar to explore these questions on the role of psychology and psychology teaching in helping to address the most serious problem facing humankind. The programme will feature a presentation by a psychologist who is

an expert in the field, plus teacher-led workshops and open discussion.

EFPTA is affiliated to EFPA, and psychology and climate change is a theme currently prioritised by EFPA. See the EFPTA website for more details <http://www.efpta.org/home/index.asp?SID=12#69> and to register for the webinar <https://forms.gle/cx3V2Ei4SQg7FnYk6>

The next EFPTA Board meeting will be held in Stockholm in April, 2023 - remember that any member of an EFPTA member association can attend meetings as a guest, so please email Jock or Morag if interested. The next EFPTA conference is in spring 2024 in Helsinki - this will be very exciting, as it will be our first in-person conference since the pandemic, and also because it will take place on EFPTA's 20th anniversary, in Helsinki, the very city where the federation was 'born'!



Upcoming webinar on 18 March 2023 - Climate change & sustainability in psychology education.



JOCK MCGINTY
MORAG WILLIAMSON

ATP Scotland representative to the European Federation of Psychology Teachers' Associations

FROM THE BPS

In September I was elected as a member of the Education and Training Board of the BPS.

The ETB has three working groups:

- Pre-university (myself and Helene Ansell)
- Undergraduate
- Stakeholder engagement

My focus will be on pre-university as this is the area which is relevant to the ATP. The BPS is keen to continue and build on the relationship we have built over the years and we are pleased to announce that the BPS will once again sponsor the Conference gala dinner.

Helene Ansell has once again arranged a great set of BPS webinars (3 in total). The first one 'Meet the Psychologist' with Dr Lyndsay Hughes was held on 23rd November 2022 and the next one Statistics and Maths Anxiety will be held on the 9th February 2023 and has been arranged in partnership with ASMP and the wonderful Cat Van Saarloos as part of our ongoing collaboration with MEI. The final one 31st March 2023 will be myself and Lucinda Powell on revision strategies.

The BPS is keen to find out whether psychology is seen as a Science in schools/colleges and which department or faculty it is placed in. Helene and I are undertaking some research by sending a brief questionnaire. Hopefully, many of you will have responded and I'll be able to share the results with you very soon.



The
British
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DEB GAJIC CPsychol AFBPS
ATP Treasurer and ETB Board Member

Book Reviews

INSIDE JOB – Treating Murderers and Sex Offenders. The Life of a Prison Psychologist.

By Dr Rebecca Myers.
Harper Collins Publishers (2022)
ISBN-978-0-00-853848-4

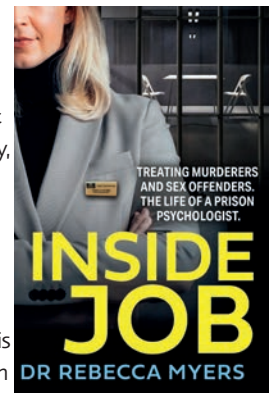
This book is essential reading for anyone considering a career as a Forensic Psychologist within the Prison Service. The book gives a very detailed account of a young 22-year-old female graduate (Rebecca) starting out as a trainee psychologist within the prison service, and not just your run-of-the-mill prison, but HMP Graymoor, home to almost 800 murderers, rapists and child molesters.

The book gives an incredibly detailed, honest,

and emotional account of what it is like on a daily basis working in a prison environment. Rebecca gives details of her affair with a married prison officer, and questions her ability to do the job. She describes her work undertaken in groups involving role-playing and the use of CBT with sex offenders and murderers, and the book gives the reader a noticeably clear insight into the prisoner's backgrounds and childhoods. It goes without saying, that most are damaged individuals relating back to childhood experiences.

Having a MSc in Forensic Psychology myself, it is very safe and enjoyable to teach this subject (as I currently do) and students always look forward to hearing about case studies and offender profiling. However, to work in the prison service takes an incredibly special type of person, and this book is the closest that students can get

towards deciding about pursuing a possible future career as a Forensic Psychologist. Finally, Dr Myers should be commended for both writing and sharing her experiences based on her career. This is certainly an addition to your psychology department or school library.



Trevor Dunn

St. Andrew's College, Cambridge

Psychology for Beginners

Bryan I, Hall R and Reynolds E (2021)
Psychology for Beginners
London Usborne £9.99
ISBN 9 781474 979900

Most of us would agree that Psychology should be part of the curriculum well before GCSE and would be a huge benefit to children growing up. This book is aimed at just that market. If you offer GCSE Psychology or are thinking about it, this would be the perfect book to have in your school library for younger children to look at. It answers the perennial question we all are asked: - 'What is Psychology?'

The blurb on the back of the book sums it up perfectly: -

'Have you ever thought about why you think, feel and act the way that you do? That's what psychology is all about. This book is jam packed

with fascinating discoveries about the human mind- how memory works and how we make decisions, to why we act differently when others are around.'

The book is beautiful illustrated in full colour and the comic book style layout makes it very accessible to younger children. However, it certainly is not pop psychology or watered-down. Many of the major studies are included and explained in child friendly language such as the case study of HM, Loftus & Palmer, Asch, Milgram, Sheriff etc.

Topics covered include: - Experiments, The core functions of the mind, Thinking things through, Differences between people, Growing up and up, We are social creatures, Brains and mental health. These cover the main approaches and topics covered by current specifications.

This book is one in a series covering challenging topics for children. Other titles

in the '...for beginners' series are: - Politics, Philosophy, Economics, Money, Business, Climate Crisis, Law and Physics. I would certainly recommend these books

as a welcome addition to any school library to engage younger children in tricky subjects.



Deborah Gajic

CPsychol, AFBPsS



Psychology Teachers Film Club, Short Cuts TV

I was fortunate to be offered the opportunity to review Short Cuts TV, Psychology Teachers

film club. The videos include a mixture of research methods, debates and key studies in Psychology.

The videos average around five to six minutes. Short enough to keep students engaged, long enough to provide useful information to support learning. A couple of the videos are longer, such as Milgram's study, at 12 minutes but as a complex study, it is well worth the extra time. Professors Alex Haslem and Steven Reicher offer a valuable insight into why Milgram chose to conduct his controversial research (although it is worth warning students that there are a couple of distressing images from the Holocaust

at the beginning of the video). It can sometimes be difficult to find innovative ways to teach core studies and these videos provide an engaging and interesting way to introduce them.

My students found the research methods videos useful as a way of consolidating their learning and they make a useful addition to the classroom. At only £25 per year, this is well worth investing in.

https://shortcutstv.gumroad.com/?recommended_by=library

Helen J. Kitching, CPsychol, FBPsS

ATP CONFERENCE 2023

University of Kent, 7th-8th July

Registration is now open for the ATP International Psychology Teachers' Annual Conference. This year the event will be held at the University of Kent, Canterbury Campus, 7-8th July 2023.

Why come to the conference?

The ATP conference is for teachers of psychology and will offer updating sessions on psychology, presentations and workshops on teaching and learning, and opportunities to meet with exam boards representatives and to share good practice.

It is the number one CPD event for teachers of psychology in the UK.

The two-day ATP Annual conference boasts over 40 workshops to enhance your CPD on a wide range of topics from teaching and learning to current research. We offer residential and non-residential packages as well as one-day CPD events. Delegates who book the one-day package are welcome to join us for our evening wine reception, giving you invaluable time to network and socialise. We look forward to welcoming you to the conference whether you are old friends or newcomers!

Regular contributors include the National Awarding Bodies as well as numerous authors, training providers and teachers.

The conference also attracts around 20 exhibitors including publishers and other providers of teaching resources.

It's a special year

This year we will be celebrating 40 years of ATP conferences. Unfortunately, due to Covid-19, we were unable to celebrate the 50th anniversary of the ATP. However, we plan to celebrate 40 years of conferences in style and party like it is 1983. So, bring your rara skirts, white handbags, rolled up jacket sleeves and white socks and party to your favourite 80s hits at the gala dinner!



Call out for photos of past conferences

As we are celebrating 40 years of conferences, we are hoping to put together a display of photographs from past years. If you have any, especially from early conferences that you would be willing to share, please email them to: atpmembershipmail@gmail.com

KEYNOTE SPEAKERS



We are delighted to announce Dr Ashok Jansari as our first keynote speaker. He will be speaking on Saturday morning.

**Dr Ashok Jansari MA (Cantab),
DPhil (Sussex), CPsychol, AFBPsS.**

Dr Jansari has been working in the field of neuropsychology for over 30 years. He studied Experimental Psychology at King's College, Cambridge. He followed this with a doctorate in autobiographical memory at the University of Sussex where he was supervised by Professor Alan Parkin. He conducted his postdoctoral research fellowship at the University of Iowa in the United States. Since establishing his own research programme, in 2004, he was awarded the Cermak Award for Best Research in Memory Disorders the International Neuropsychological Society and in 2008 was awarded a Media Fellowship by the British Association for the Advancement of Science for his skills in communicating science to the general public.

In addition, national TV, and radio appearances, he has lectured extensively throughout Europe, North America, South America, India, Malaysia, Israel, Singapore, Australia and New Zealand. For this work, he was nominated for a British Academy Charles Darwin Award for communicating science to non-specialist audiences.

He conducts research on a wide range of populations including healthy individuals, those with brain damage, ex-offenders, men undergoing treatment for prostate cancer and children who are either typical or have developmental disorders such as Autistic Spectrum Disorder (ASD) and Attention Deficit Hyperactivity Disorder (ADHD). He is one of the UK's experts on face recognition including face-blindness (also known as 'prosopagnosia') and exceptional face memory (known as 'super-recognition').

In October 2022, his major new textbook A Student's Guide to Cognitive Neuropsychology was published by Sage for the international market.

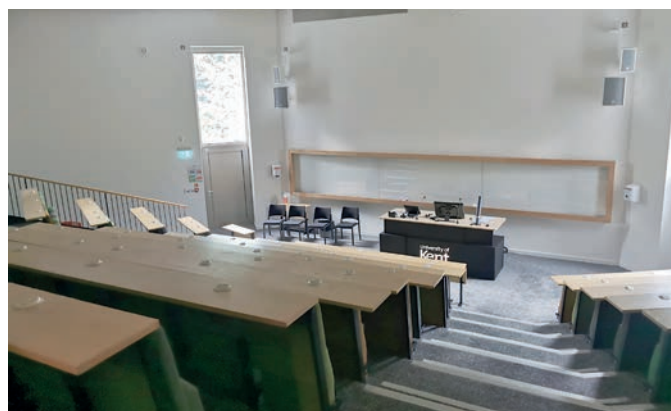
Sponsored places

Mike Stanley Memorial Award

The ATP will be once again sponsoring a full place at conference for either a PGCE student or an ECT. In order to be considered, please email atpmembershipmail@gmail.com with 250 words as to why attending the conference would be beneficial for you. The winner will also be required to write an article for ATP Today magazine about your experience at the conference. Deadline is April 1st, 2023.

Workshops

If you are interested in running a workshop at this year's conference, please email me at helenjkitching@gmail.com Don't worry if you haven't run one before, we can offer support and guidance.



PROVISIONAL PROGRAMME

FRIDAY 7TH JULY

9.00	Registration tea/coffee
10.00	Conference opens
10.30	Keynote 1
11.30	Breakout one (choice of workshops)
12.30	Lunch and exhibition,
1.30	Breakout two (choice of workshops)
2.30	Breakout three (choice of workshops)
3.30	Tea/coffee break
4.00	Breakout four (choice of workshops)
6.45	Getting to know you
7.15	Wine reception
8.00	Gala dinner and entertainment Kindly sponsored by the British Psychological Society

SATURDAY 8TH JULY

7.30	Breakfast
7.55	Morning mindfulness walk. Meet in the dining room
9.00	Breakout five (choice of workshops)
10.00	Tea/Coffee break
10.30	Keynote 2
11.30	AGM
12.00	Breakout six (choice of workshops)
1.00	Lunch and exhibition
2.00	Breakout seven (choice of workshops)
3.00	Tea
3.30	Keynote 3
4.30	Plenary
5.00	End of conference.

Early Bird rate

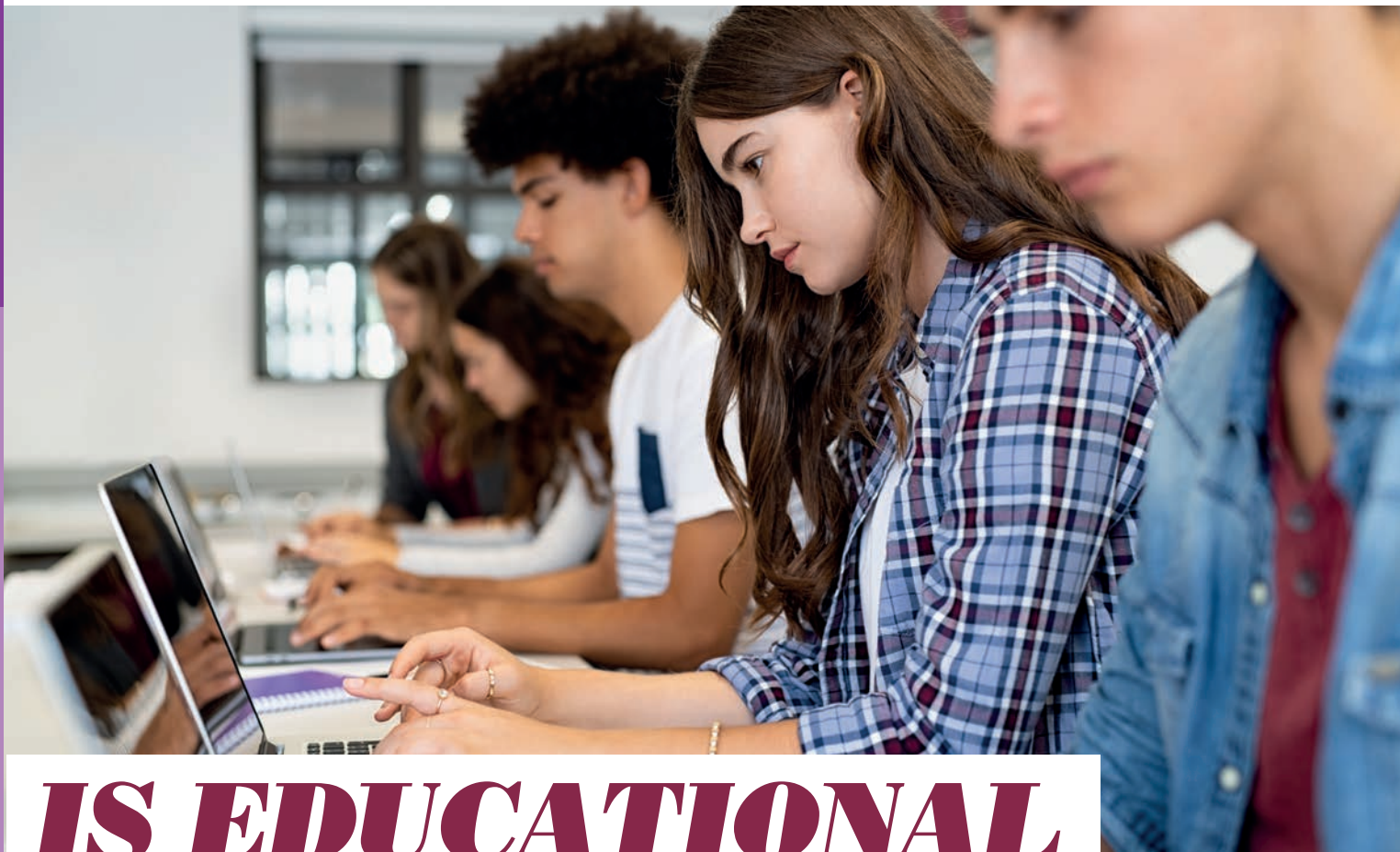
The special early bird rate of £280 for the full 2-day conference will be available until 1st April 2023.

Don't delay book your place today.

<https://www.delegate-reg.co.uk/atp2023/>
Hope to see you there!

Helen J. Kitching,
CPsychol, FBPSS, Conference Organiser
and the **ATP Committee**





IS EDUCATIONAL TECHNOLOGY REALLY THE FUTURE?

Education does not exist in a vacuum and the reality for most young people is that technology forms a significant part of their everyday life. The question regarding teachers is, whether or not they are 'digital natives' (Kirschner 2015) familiar with and proficient in digital immersion, teaching tools and methods. Do they have to be able to react to this societal change in order to continue to engage and motivate students in their learning? Technology may have caused students to be more likely to get bored with traditional teaching activities that lack the fast-paced multimedia experiences that technology can provide. Technology can present novel visuals and sounds which students find naturally interesting (Willingham 2010) but that doesn't necessarily mean that it is aiding learning itself.

In fact, the presence of technology may have a negative effect on learning. I've often had the experience of standing in front of my classes looking at a sea of laptops and iPads and wondering if my objectives are being met. The drive for efficiency savings, plus a desire to

reduce the environmental impact of teaching has resulted in my department uploading all lesson resources and activities onto Teams for students to use in the lesson rather than providing the work on paper. The downside to that strategy is that every student needs to be using a device at least some of the time in most lessons. Ravizza, Uitvlugt and Fenn (2017) found that students who brought their laptops to class to view online course related materials actually spent nearly 40% of their time doing other 'non-academic' activities not related to the task in hand. This 'non-academic' use was negatively associated with final exam scores. Students with higher use scored lower. Despite constantly moving around the room and varying where I address the class from, I suspect that students have ample opportunity to click off website that is unrelated to the task, before I can view their screen.

I've also noticed that an increase in the presence of technology in the classroom presents opportunities for the learner to start task switching, as they use their laptop or other

device to make notes or complete activities, but also have their phone on the desk or have messages set up directly to their device. When task-switching, a person first shifts the goal and thus makes a 'decision' to divert attention away from the task being carried out to another task. Instructions and procedures for carrying out that task are switched off, and those for executing the other task are switched on. This task-switching involves dividing one's attention between tasks, and because each task competes with all of the others for a limited number of cognitive resources available, performing one of the tasks interferes with that of the others (Kirschner 2017). Therefore, there is a reduction in task performance when switching to the new task and also when switching back to the original one. According to Tombu et al (2011) this interference leads to a bottle neck of information processing, as our limited working memory capacity cannot continue to process information at the same rate as when monotasking. This interference, or attentional bottleneck has also been shown

to exist at the neuronal level in the brain using fMRI scans. Therefore, there is biological evidence for the negative impact of task switching on learning.

In considering the consequences of task switching behaviours Fox, Rosen, and Crawford (2009) demonstrated that students who text messaged while reading needed to invest significantly more time in reading the text than those who were not text messaging; approximately 1.66 times as long. This suggests that the effect of task switching doesn't have to have a deleterious impact on understanding, as long as more time is invested on the task. However, Kirschner & Karpinski (2010), found that high intensity users of social media studied just as long as low-intensity users. However, they did not invest that extra time needed to compensate for lost processing due to the task switching. Furthermore, the grade point averages (GPAs) of the high intensity users were also significantly lower. This demonstrates that disruptive task switching has a measurable negative impact on performance.

In addition, multitasking on a laptop during a lesson poses a significant distraction to peers who are in sight of the multitasker, and this can be detrimental to the learning of both students. Sana, Weston and Cepeda (2013) found that students in direct view of a multitasking peer scored lower on a test, compared with those who were not. A follow up correlational analysis found that higher levels of laptop use were associated with lower student reported levels of attention and understanding of the course material. There is also evidence that task switching leads to more shallow information processing as well. The evidence leaves me in a quandary. I could be tempted to instigate a 'no phones' policy and there is certainly a place for that in some lessons. I am mindful of the danger there though, of having a negative impact on students who may not have any other method of accessing the internet (and my lesson resources). As the cost-of-living crisis deepens, it is likely that more students are unable to afford multiple pieces of technology to bring to the lesson and for some, their phone is their only option. In addition, I am aware that messages can be diverted to laptops and iPads anyway so a 'no phones' policy may not resolve the issue.

Before we start rolling back our classroom practice to pre technology times, it is worth remembering that it isn't all bad. Online quizzes are a useful method of gauging student understanding and are also concurrently an excellent opportunity for retrieval practice. In this context, the technology can give students immediate and accurate feedback on their performance in the form of number of questions answered correctly, the correct

answers when they get it wrong, and in some cases a leader board of their peers (for example www.quizziz.com). This information is also available to the teacher to track progress and identify problems. According to Hattie and Timperley (2007), corrective feedback (e.g., distinguishing correct from incorrect answers) is the cornerstone of building effective processing and self-regulation. However, Black and William (1998) note that feedback is most beneficial when it focuses on strengths and weaknesses, rather than individual marks. There are other more complex programmes that can do just that, such as Socrative (www.socrative.com) where students can identify their own strengths and weaknesses as well as those of their peers.

However, these programmes require little opportunity to interact, and in sixth form classrooms in particular, the skills required to develop effective essay writing techniques can only partially be assessed by content knowledge. Self-assessment of longer responses requires more setting up, so that the student has a clear understanding of what they should be looking for in their answers, providing models and worked examples. The expertise of the teacher is still needed to pitch the assessment and feedback at the right level to challenge conceptually and to motivate learners to want to move forward. There is still a place for direct teacher and student interaction to move learning forward in the classroom.

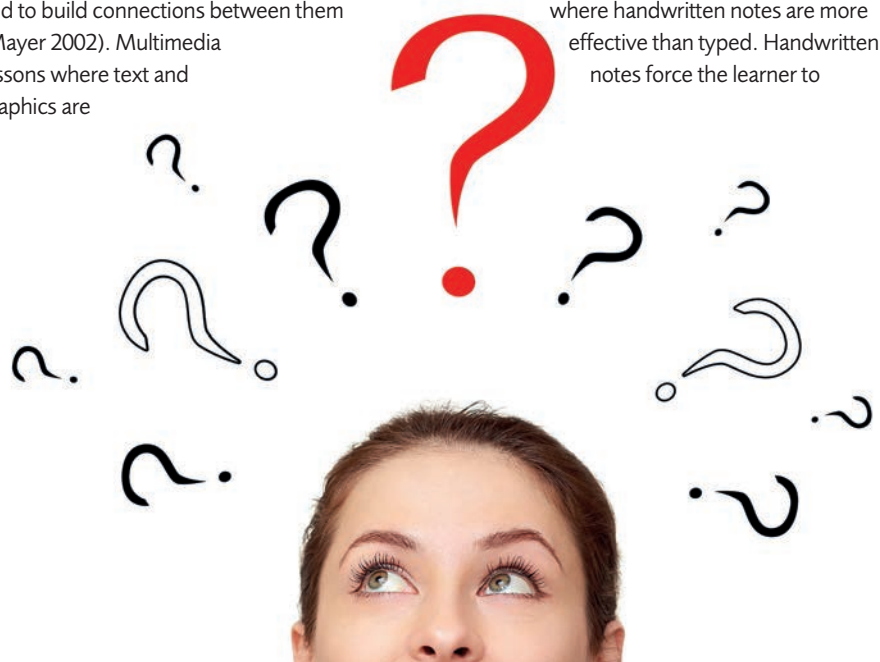
What about the use of media during our lessons to bring ideas to life? Most teachers are familiar with the concept of Mayer's multimedia principle, or dual coding where students learn better from words and pictures than words alone. When words and pictures are both presented, students have an opportunity to construct verbal and pictorial mental models and to build connections between them (Mayer 2002). Multimedia lessons where text and graphics are

Ravizza, Uitelugt and Fenn (2017) found that students who brought their laptops to class to view online course related materials actually spent nearly 40% of their time doing other 'non-academic' activities not related to the task in hand.

conflicting or where they are separated in time and space require greater working memory and so is less effective (Mayer and Anderson 1992). Effective teaching involves ensuring that learners engage with these processes while not overloading their limited cognitive processing capacity. There are therefore likely to be considerable individual differences in the impact of the media. A lesson that might be effective for a student with a large working memory capacity will be unworkable for a student with a smaller capacity (Willingham 2010).

Perhaps unexpectedly, it also seems that the medium of written information matters when completing a reading task. It has been consistently found that reading carried out using physical print leads to greater comprehension than reading that occurs from a screen. In addition, student accuracy in predicting the quality of their performance is better when they have engaged with printed material compared to overestimating their performance when reading digitally (Singer Trakhman et al 2017). It is likely that this is because reading of online content is faster than printed, which would suggest more superficial processing than print reading.

This is also the case for notetaking, where handwritten notes are more effective than typed. Handwritten notes force the learner to



summarise as they take longer to create and are therefore a more active process, requiring deeper processing.

A final area of interest moving forward, is the presence of the hardware itself. I've noticed that for some students, the physical barrier of the laptop or iPad can feel comforting and this is especially helpful for our anxious students who often hold their bag or coat in their lap as a protective strategy to help them to stay calm. Feeling able to hide behind a screen could help some students to engage with the lesson. Equally though, the same strategy used by a student who is less motivated to learn can dilute the pressure to engage with class discussion and debate, leading to opting out of deep learning.

Overall, research into the use of technology in the classroom does raise some interesting questions as to how we can best harness the clear advantages without reducing engagement in learning and the depth of processing. What is clear though, is that technology in our classrooms is here to stay.



JESS DAWE

ST PAUL'S CATHOLIC COLLEGE,
BURGESS HILL

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Brain Teasers

I	H	E	G	A	M	I	F	Y	O	P	E	I
S	O	X	M	P	E	D	A	G	O	G	Y	N
G	E	A	R	E	T	R	I	E	V	A	L	T
N	O	M	S	T	A	K	E	S	S	N	E	E
I	P	P	G	E	C	N	T	E	U	R	S	R
L	R	A	N	T	O	D	N	I	M	H	E	L
L	A	P	I	C	G	O	P	A	M	T	M	E
A	C	E	N	P	N	E	T	E	A	C	H	A
C	T	R	R	T	I	I	I	T	R	I	I	V
D	I	D	A	C	T	I	C	O	I	D	N	I
L	C	T	E	H	I	W	I	I	S	E	S	N
O	E	T	L	I	O	M	L	E	E	R	F	G
C	O	L	K	L	N	D	E	C	A	P	S	S

This edition's puzzle is a word search. Find all of the missing words and the hidden message in the unused letters. Remember that completed crosswords from the October 2022 edition of the magazine can still be submitted due to a lack of entries. **Best of luck!**

Word Search

	Metacognition		Teach
	Pedagogy		Interleaving
	Didactic		Spaced
	Cold calling		Learning
	Retrieval		Summarise
	Practice		Gamify
	Elicit		Predict
	Exam paper		Low
	Mind		Stakes
	Map		

Hidden Message

— / — — — / — — — — / — — — — / — — — / — — — /
— — — — — / — — — — / — — — — / — — — — —

Entries should be emailed to UKpsychED@hotmail.com with the subject heading: 'Prize Puzzle 2' and your name and address with a clear image of the correctly completed puzzle. The draws for October's crossword (Prize Puzzle 1) and this word search (Prize Puzzle 2) will occur on Friday 7th April 2023 and the winner will receive a **£10 Amazon voucher**. Only current ATP members are eligible.

DO PSYCHOLOGY STUDENTS *HAVE THE EDGE?*

'We remember what we think about', this quote by Willingham encapsulates much of what cognitive science strives to achieve in the classroom. With current interest in embedding cognitive science into a knowledge rich curriculum, it is interesting to consider whether, as cognitive science is essentially psychology, our A level students have the edge when it comes to thinking and knowing about learning?

After all, as the syllabus covers how our memory works and the relevance of primacy and recency effects, along with a plethora of other useful cognitive science, either as part of the specification (growth mindset, brain plasticity) or as part of the learning experience, as cognitive science is embraced by psychology teachers. This seems to be a great time to be a Psychology teacher, as the relevance of our subject is forefront in schools embracing metacognition and principles of cognitive science.

In the grammar school where I work, we have been developing and embedding cognitive science as a central pillar of our teaching and learning strategies, across the ages and stages. Even with the language of metacognition being

used by younger years, across the subjects, I do feel that overall, Psychology students have the edge when it comes to learning. In true psychological style, there ensued a questionnaire being sent to psychology and non-psychology students in year 13, to try and discover whether Psychology students do indeed have the 'edge' as well as trying to decipher what exactly this 'edge' is – and more importantly, if there are benefits to a psychology curriculum, how can we use this to help all the students in our schools?

Even though there is a wealth of research studies citing the importance and benefits of the use of cognitive science in the classroom, there is still very little in the way of initial teacher training in this area, and schools and educators appear to differ greatly in how far an evidence-based approach is being used in schools. There is also, particularly in the UK, according to Weinstein et al, a group of teachers who are fully embracing cognitive science and using empirical research to inform their teaching. In my school, the Teaching and Learning group meets regularly to discuss articles

from Impact, from the Chartered College of Teaching, which contains the most recent research in the area. There are six areas that Weinstein has noted as being the most useful in the classroom, these are - spaced practice, interleaving, retrieval practice, elaboration, concrete examples, and dual coding. These are areas used as a focus in the Year 13 questionnaires, along with knowledge of memory.

In terms of spaced practice, Ebbinghaus' 'forgetting curve' has shown us that spaced practice, successfully revisiting information over a period of time, is the best way to go to prepare for examinations. One issue with spaced learning is that it is harder for students to do, rather than cramming, but it is this 'desirable difficulty' that makes it so effective, so any education going forward needs to be upfront about this with students, and the long-term benefits need to be explained. (Weinstein). Students who were surveyed tended to use a mixture of both spaced practice and cramming, regardless of whether they were Psychology students, which could suggest that even if students know that spaced practice works best, it does take more effort



over and a longer period of time and could also be seen as daunting.

Interleaving is an area that I need to develop in my own practice, and it seems that I am not alone. Weinstein et al writes about the fact that teachers own understanding of interleaving appears to be imprecise, and emphasises the fact that topics are returned to several times in a year, but true interleaving is more complicated. An area for my own professional development this year is to plan specifically for interleaving, the use of research methods being interleaved with other topics being the most desirable and fruitful avenue to explore at this stage. Unsurprisingly, students seemed very vague on what this concept is, and sometimes confused blocking and interleaving.

There are both direct and indirect benefits to retrieval practice, and though this area is possibly the most well used technique among teachers, there is still a way to go in focusing retrieval on complex information, with scaffolding being used, rather than the quick, low stakes variety of quiz retrieval that often takes place. In Psychology, we study the importance of retrieval in units on Memory that look at encoding and elaboration and so could suggest that quite naturally our students will have an advantage in this area.

Dual coding is another area we focus on in my school, but again it is only effective if done well, and there is sometimes confusion, as with interleaving, on exactly what dual coding involves. We all know the power of images, and visual rehearsal and repetition, but when not done effectively we can in fact hinder a student's learning. As Schwartz (2007) – in Weinstein) shows, depending on how visual information is shown, it can actually become a distraction and have reduced effectiveness, so as teachers we need to make sure that images are necessary, clear and useful.

Revision is a key area where students need to have a good understanding of metacognition to aid them in their independent study. Students were asked about their knowledge of high utility methods of revision (Dunlosky). Although all students had the understanding that the highest utility methods were to practice exam questions, and that merely highlighting or rereading notes are low utility methods, there was a distinct lack of confidence in this knowledge in the majority of non – psychology students.

None of the non--psychology students understood what was meant by dual coding, even though as a school, teachers do use this theory in their teaching practice. The majority of Psychology students were able to explain in detail what exactly dual coding is and included the key words encoding and retrieval in their

explanation of this, showing a sophisticated and clear understanding.

Psychology students appear to have a thorough and useful knowledge of memory and how this impacts on their learning and were able to relate the theory to themselves, comments such as 'Knowing that there are types of memory like context dependent forgetting/ state dependent forgetting so, it makes me realise I need to be in the right state of mind when revising in order to remember and to make sure something stays present in your memory you need to reinforce the memory by recalling it lots, this is best using practise questions or flashcards. also using visual or auditory cues to help recall memories.' For non-psychology students, there was a mixed response, with some having no understanding of how memory works, though some did understand the basics of working memory and the importance of retrieval practice and rehearsal and revising over longer periods of time to get information into long term memory.

Most Psychology students agreed that they used the specific knowledge from the A level Psychology curriculum, and apply it to their other subjects and particularly in revision, one student commenting 'my awareness for having a small cognitive load helps me when preparing to revise for all my subjects and ensuring I have a quiet space, as well as applying cues and using them in my exams to help recall facts'.

Non-psychology students were asked whether they felt specific teaching on topics such as how memory works and mindsets would be helpful in their A level studies. The majority of students appeared keen and eager to have access to this knowledge, one comment was 'it can allow students to gain a better idea of how to effectively revise and make use of time instead of focusing on areas and finding out it has not helped that much for them.'

It seems to be, at least from the existing research and the small questionnaire carried out at my school, that in some ways, Psychology students do indeed have the edge in terms of their learning at A level, though part of this edge seems to be around the confidence this specific metacognitive knowledge gives them. By being exposed to specific theories around memory, mindset and dual coding, students are able to apply this knowledge across subjects and in a range of ways. The study was carried out where whole school policy is focused around cognitive science, so the non-psychology students have had some exposure to these concepts, though not in the explicit and detailed way that

Revision is a key area where students need to have a good understanding of metacognition to aid them in their independent study.

Psychology students do. This shows the need for us to include metacognitive language with all of our students, in all subjects to develop a common and shared knowledge and to increase confidence in learners about what they know and how they know. As teachers, we model reflective teaching, and this is turn will encourage students to be reflective learners.

Alongside cognitive science, we must also remember, whatever the subject, that background knowledge is key. As subject teachers, we are always imparting knowledge to our students which will then be used in working memory. Research in cognitive science is not static, it develops and evolves, just as our teaching does, and perhaps the most important piece of advice to give any of our students the edge, is to keep trying new things, keep questioning, as the learning never ends.



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WHY USING ANIMALS IN RESEARCH IS OK

Why it was normal and acceptable in the past to use other animals for psychological research, and how this belief changed.



It seems that in the UK, it was once not just “all right” but right and proper to use other animals for our own good, it was a social norm. Animals were “other”, not human and not comparable with us, except in the most basic, physical ways such as needing to eat, drink, urinate, reproduce, etc. They, so the belief ran, did not have real emotions, couldn’t think, were very much lower forms of life. Predominant religious beliefs reinforced this, for example in the Christian bible the very first chapter, Genesis, tells that when God made the world he gave humans sovereignty over the whole world, living and non-living. So – what changed the social, intellectual and religious norm, and why?

Firstly, I think it’s important to acknowledge that the norms about what is and is not acceptable with regard to our relationship with other animals shows considerable variation between people and cultures. In addition, norms evolve over time, they, like most things, are not set in stone. Just about every person could list some norms which have changed in their own lifetime, certainly even in the past 50 years. Secondly, in psychological research there are main differences between different countries about what is and is not permissible in the use of other animals, plus there are differences too in how this is interpreted. In the UK, for example, research using apes is forbidden.

Percentage of animal types used experimentally in the UK in 2019

Type of animal	% used in research
Mice	74
Fish	14
Rats	5
Birds	4
Other mammals	3

The total number of procedures in 2019 was 3.5 million, covering medical, scientific and psychological research, and this number is reducing annually in the UK as other techniques are developed. In 2019, 25% fewer primates were used compared to 2018, and between 2% and 10% fewer other mammals. However, in the USA not only is research on all primates, including apes, allowed but about 110 million animal procedures a year take place. However, it is worth noting that the human population that is about 40 times bigger than that of the UK. Australia still allows psychological experiments on all primates. There are, as far as I am aware, many countries where there are no data released on animal experiments, but just looking at the three nations of the UK, USA and Australia it is clear that norms vary considerably.

So why have the UK norms about animal use changed so much in the past 100 years? I think it might be because scientific research has challenged the ideas back then. We are not so different/better than they are, after all.

Let me give some examples.

Old assumptions about humans and other animals

1. Animals don’t have emotions (so we are better than they are)

- I think every pet owner would dispute this, but that’s anecdotal evidence, not scientific evidence. However, just last year citizen science produced real evidence that elephants grieve, that they change their behaviour when a member of the family dies. Yes, we’ve all probably heard accounts of elephant graveyards and so on in Africa, but nothing from Indian elephants. One factor was that in Africa elephants wander the plains in clear sight, whereas in India, they tend to stay in dense forest or jungle. Then researchers realised they could access tourist’s photos of Indian holidays, freely available on the internet and in the public domain. Amazingly one of the things they found was elephant groups reacting to the death of a member, carrying the body of a dead youngster, standing round together for periods of time around the dead one. I think many are convinced that this unmanipulated behaviour can be interpreted as grief, as having emotion.

2. Animals are not individuals like humans are (so we are better than they are)

- Field observations, even TV watchers of programmes about farms for example, have shown clearly that cows, for example, can be bullies, can form cliques, can act as victims – is

this an example of cows as individual creatures?

3. We have culture! Groups of humans have different cultures, other animals don't have culture (so we are better than they are)
 - A long time ago the team at the University of St Andrews had shown that East African chimpanzees had developed the skill for cracking nuts by using a suitable stone as a table or anvil, and another as a hammer, bashing them together to crack the nut. They also showed film of young chimps being made to sit down and pay attention, being shown this skill and then made to imitate it. Not only does this show tool use, see below, and social learning, the behaviour is not seen in other areas in Africa.
4. We have rituals, like birthdays, rites of passage such as the post-exam prom, other animals have no rituals or rites of passage (so we are better than they are)
 - Recently, in West Africa, Jane Goodall's team found and filmed evidence of ritual behaviour in other chimpanzees, for example drumming on specific trees and a kind of dancing when a storm was coming
 - The chimps also built strand cairns of stones, for no apparent reason ... a ritual?
 - Country people have, probably for millennia, spoken of the ways crows meet up when one of them dies, so crow funerals are spoken about, but this too is anecdotal evidence – until such meetings were filmed. They do gather, typically

there is walking to-and-fro associated with the event. There is no explanation for this behaviour other than they are marking the event. It is a ritual.

5. Other animals can't problem-solve, they just mindlessly do trial-and-error until it works, but we do insight learning all the time (so we are better than they are)
 - Kohler did many experiments using primates and published his book, *The Mentality of Apes* over a hundred years ago, showing that his apes could solve a problem that needed a stepped solution by observing and then thinking.
 - Then in 2002, at the University of Oxford, Kacelnik's team showed that Betty, a captive New Caledonian Crow, could not only problem solve, but also make and use tools to get food out of a container. Subsequent research has shown that this breed of crows has high skills in problem solving and can use insight thinking to make a variety of tools for a variety of tasks. See below.
6. Only humans can make tools and use them for novel tasks (so we are better than they are)
 - See point 3, East African chimpanzees; also number 5, Betty the crow and other crows.



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Applying these ideas to the classroom

1. An important feature to me is recognition that norms are not set in stone. What we feel is a good norm may be less or not good in another setting, country, or culture. This is important, isn't it. It's not about the norm necessarily being right or wrong. We do judge people/countries/cultures so very much. And it can be a norm about something not really that important that can produce an explosive effect. Time for discussion?
2. Students can explain the term Social Norm and ask people what was OK / not OK when they were young compared to now, then put the results up in class. I'd suggest asking parents as one group, and grandparents as the other. Even if grandparents live at a distance, surely they will use zoom/email etc. This could even be an Open Evening activity.
3. Students could draw up a simple questionnaire of Which of these social norms were accepted/not accepted when you (Parent/Grandparent) were my age? It would have a simple tick or cross for each norm for counting totals. It would also be a useful example of showing social sensitivity about the subject of each norm, I can think right away of

three former students who would have made – in their minds very funny – unacceptable suggestions.

4. This would make a good cross-curricular exercise with Biology as it's about behaviour, human and non-human.
5. It would be possible for this to become a class assembly for the year-group, or the whole student body even, outlining what social norms are and then explaining that they vary and they change.
6. The results of this could also make a nice article for your local newspaper, a plus for you and for your school/college/academy. My department got great brownie points for a similar exercise involving neighbours and family friends with a very positive spin for the perception of real Psychology!
7. This could be a fun session – the video clips are great – for a science/psychology/biology club!
8. And finally, could this be the starting point or the basis of an extended essay? There's so much fascinating research out there.



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Video References

- Crow "funeral" <https://www.youtube.com/watch?v=KUNXWmhnOzk>
- Shows crows gathering around the body, distinctive calls, more crows flying in, the characteristic short strutting walk with cries. 2.5 minutes
- Magpie mourning <https://www.youtube.com/watch?v=60Zg9sGnQf8> showing gathering, possibly trying to "wake" the dead bird; and <https://www.youtube.com/watch?v=ROkCijTdc0A> a natural setting in a garden
- Chimpanzee rain dances https://www.youtube.com/watch?v=JERlIC3_IT0 and https://www.youtube.com/watch?v=tiU4nMf_LX0 and
- African Elephant "mourning" https://www.youtube.com/watch?v=Ku_GUNzXoeQ rare footage of elephants gathering around the remains of an old matriarch, and just standing – highly unusual behaviour. This has been observed many times now, only around the death of another elephant. 3.5 minutes
- African Elephants keeping the anniversary of their rescuer after his death <https://www.youtube.com/watch?v=eY1hxwuD1rU> start at 2.5 minutes, lasts about 3 minutes
- Asian elephant showing mourning behaviours <https://www.science.org/content/article/youtube-videos-reveal-asian-elephants-may-mourn-their-dead>

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RETRIEVAL PRACTICE

What is retrieval practice?

Retrieval practice is a research-based technique that helps to improve recall of information. Retrieval practice involves challenging students to recall information without relying on resources such as their notes or textbooks. This process of striving to recall information strengthens memory. When 'selling' this technique to them, we link back to Biopsychology and the strengthening of synapses and the pruning of those that are not used.

Research has shown that retrieval practice is a stronger learning strategy than ones that are frequently used in the classroom such as lecturing from the front and taking notes. Retrieval practice, therefore, should be used during learning, not just assessment.

Why should we be using it?

As Psychology teachers, we know the importance of research and evidence-based practice. Researchers tested how effective retrieval practice is compared to simply reading and re-reading notes. They compared final test scores and measured how effective students believed these strategies were and how interesting they found their revision when using them. They found that if the final test was 2-7 days away, students who had

one study period followed by a session of retrieval practice did at least 30% better than those who had done two study periods of just reading. (Watson et al., 2021)

What barriers might I face when implementing it and how do I overcome these barriers?

Some students (understandably) do not like to struggle and will quickly go to their notes. Really emphasising that it is the struggling process that helps to strengthen memory should get them on board. Keeping retrieval practice low stakes by not giving them grades for any retrieval practice that they do will allow them a safe space to make mistakes and experience the benefits of retrieval practice. Feedback can be given so they know what they got right, and more importantly, what they got wrong. However, this does not mean more work for the teacher as students can self or peer-assess.

Students tend to rely on their own (less effective) methods just because they think that they work and they feel easy, e.g., re-reading notes and highlighting. Students may have an example of when they have crammed the night before a test by re-reading their notes and they did well. The mistake students make here is that they think to

themselves 'I know this!' – however, they are just experiencing the illusion of familiarity. The key here is to let them know that these old methods do not work for A-level study. Students are more likely to rate re-reading as being more effective than retrieval practice. However, students that used mostly retrieval practice remembered over 50% more than those who had just read and re-read during revision. (Watson et al., 2021)

By making retrieval practice part of your classroom routine, you can demonstrate how it can be used outside of the classroom during their own study time and allow them to see their grades improve.

Retrieval practice

Below are several ways we have implemented retrieval practice in our classrooms.

Retrieval grids (see below) can be used at any point in your lesson, we tend to use them as starter recaps. We make a table and fill it with questions – each question is worth a certain number of points. The points are awarded in terms of when the content was taught. The content taught further back is worth more points than the content taught the previous day. Questions are colour coded in terms of when the information was taught. This activity feels very low stakes because it does not use exam style marking and students can self or peer-assess. It allows students to gain feedback on what they remember and what they do not. It combines spacing and interleaving which are also shown to improve revision and learning (Jones, 2019).



What two things should police officers avoid doing when interviewing an eyewitness? (2 points).	This is the only type of LTM that is implicit (retrieved without conscious effort) (2 points).
According to interference theory, the degree of forgetting is greater when memories are ____ (2 points).	In Baddeley's 1996 study, recall was much worse for ____ similar words compared to ____ dissimilar words in the STM study. (3 points).
In Loftus and Palmer's 1974 study, in which critical question did participants estimate the highest speed? "How fast were the cars going when they ____ into each other?" (1 point).	Anna changes the email address she has had since she was 12. She struggles to recall her new address. Which type of interference would account for this? (2 points).
There are two types of STM that can be expressed verbally (declarative). Name one of them. (2 points).	In Baddeley's 1966 study, recall was much worse for ____ similar words compared to ____ dissimilar words in the LTM study. (3 points).
Bower found that if participants felt happy when they learnt information, but then felt sad when they later tried to recall it, then they were much more likely to forget it. Which type of forgetting would account for this? (2 points).	Roughly draw the Yerkes-Dodson Curve. (1 point).

Cops and robbers

Good retrieval practice should enable students to identify gaps in their knowledge. Students are given a table – one column is titled 'cops' and the other 'robbers'. In the 'cops' column students write down everything they know about a topic without any notes. Then, they can have a look at what their partner wrote and in the 'robbers' column, they can jot down what their partner wrote but they had not. This highlights what they need to know but had forgotten. They can do this without a partner, but instead 'steal' information from their textbook or notes (Jones, 2019).

Flash cards

Flash cards can be an effective tool for retrieval practice with the caveat that it depends on how they are used. The principle behind them is that students are creating a resource that they can use to test themselves. We teach students how to best create and use flash cards. There is an abundance of free online resources to make them electronically e.g., Quizlet.com. We have found one of the most important things to emphasise is to keep the writing to a minimum. We advise students to put one question or key term on one side with the answer or definition on the other. If students overload a card with too much information, the strategy becomes less effective. There are lots of different ways they can use their cards once they have created them e.g., they can test themselves, each other, employ the Leitner System or use cards of key term definitions in a game of 'taboo'. If students create these as they go along, they are building up a collection

of revision materials that they can return to throughout the two-year course.

Microsoft Forms

Forms is a free app that comes as part of the basic Microsoft Office suite. It is an easy way to create online quizzes that can be easily accessed by students on their phone or computer. They can be shared via a link or through the assignment function on Microsoft Teams. You can ask a variety of different types of questions including multiple choice and free text. We tend to leave a period of time between covering the topic in class and asking students to complete the quiz. Occasionally, we assign Year 13 students the same quiz as the Year 12 students to give them an opportunity to retrieve the content from the previous year.

Forms is straight forward enough for the students to use independently and can automatically mark some questions and provide feedback. Forms logs individual student's scores and responses, and it displays an analysis of the class performance.

1. What is ordinal data? (1 point)

83% of respondents (15 of 18) answered this question correctly.

[More Details](#)

[Insights](#)

- Data where each participant has... 15 ✓
- Data where each participant's sc... 1
- Where the researcher simply co... 2

An example of a Microsoft Forms multiple choice questionnaire with feedback on performance for teachers



Forms can be shared between colleagues by choosing the option to 'share as a template'. Finally, retrieval practice using Forms has provided an opportunity for students to assess in a low stakes context how much they know and how effective their revision strategies are.

Conclusion

We have implemented retrieval practice strategies into our own teaching and have found them beneficial. We currently teach in a Psychology department that has approximately 800 students in inner city Manchester. Our most recent exam results are above the national average benchmarks across many measures, and we attribute part of that success to the purposeful implementation of evidence-based strategies on how students learn. We hope that you and your students find these methods helpful.



**CHARLOTTE MCKESSY AND
CHARLOTTE BRADSHAW-SMITH,**
XAVERIAN SIXTH FORM COLLEGE

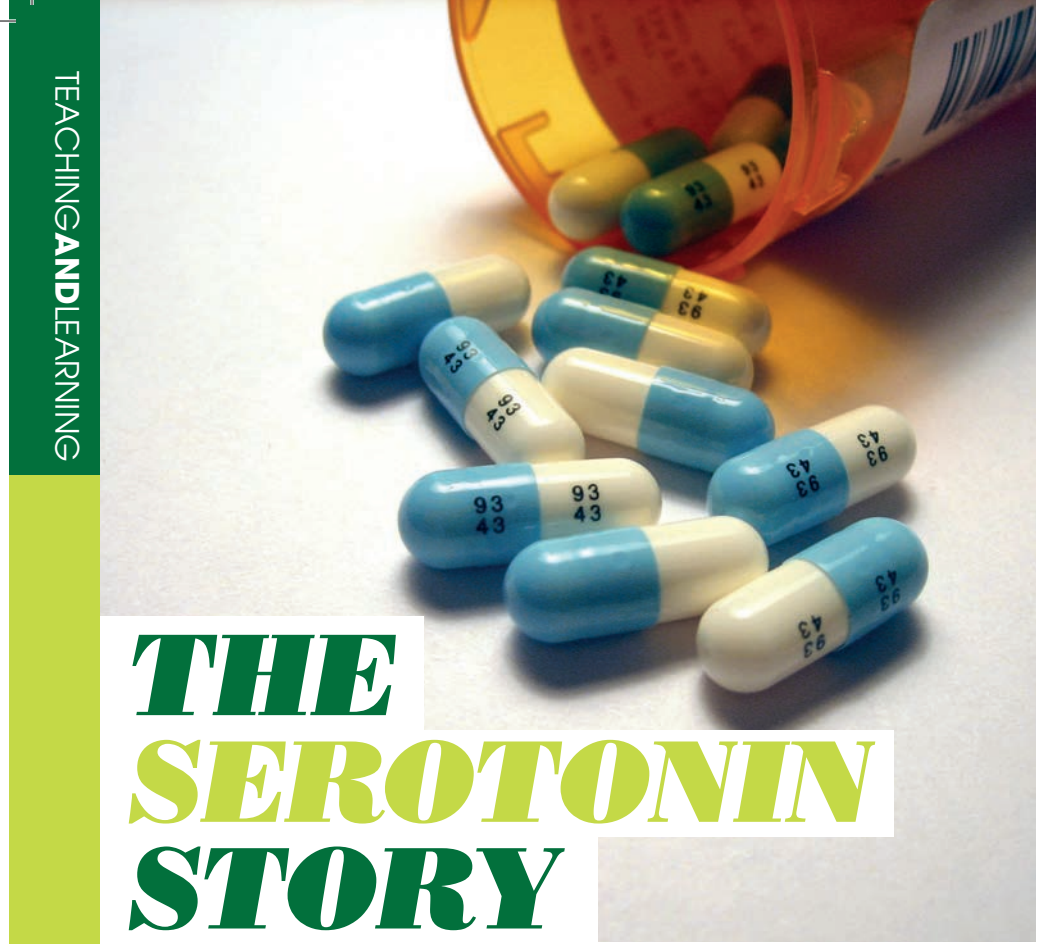


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THE SEROTONIN STORY

The serotonin hypothesis: too simple to be true?

Look in any A-level or IB Diploma textbook, and you will find the serotonin hypothesis for depression - and OCD and phobias and aggression. In one popular A-level text, a lack of the neurotransmitter serotonin is mentioned over 50 times in connection with one or other of these mental disorders. Yet most teachers know that the serotonin hypothesis has been at least partly discredited, at least in so far as the serotonin story is much more complex than this. None of these disorders can be traced **solely** to a low level of serotonin, though an imbalance in the neurotransmitter may be part of the story for some of them. Clinical depression is the classic mental disorder for which reduced serotonin has been blamed. But where did this serotonin story originate? And how can we teach the complexities to students so they can discuss critically the use of selective serotonin inhibitors (SSRIs) in treating disorders?

The history of the serotonin hypothesis

Before the 1950s, depression was treated with sedatives, stimulants such as amphetamines, and electroconvulsive therapy, all of which worked to some extent, though it was unclear what the brain mechanisms were behind this. The serotonin hypothesis, that a lack of serotonin in the synaptic cleft between neurons in the brain is responsible for depression, was

developed from the 'monoamine hypothesis' put forward in the 1960s, which proposed that depression results from a depletion of serotonin, norepinephrine and dopamine in the brain, especially in the synapses. (For more information on this, see Barreto, 2019.)

When it was discovered in the mid-1960s that Parkinson's disease was caused by a deficiency of dopamine, then the stage was set for other diseases and mental disorders to be viewed as maybe a simple deficiency of just one neurotransmitter. But it was not until fluoxetine, marketed as Prozac, was introduced in the 1980s that the one neurotransmitter became established as serotonin (Spiegel, 2012). Fluoxetine targets the neurotransmitter serotonin, which was known to affect mood. Prozac worked better than the earlier antidepressants in that it had significantly fewer side effects than the older treatments, seemed to be non-addictive and right up to the current day, has been identified as especially effective for children and adolescents (Reyad, 2021). So, the serotonin hypothesis developed.

Suggested critical thinking for students: It is quite common for drug research to work backwards from a treatment that seems to work to a theory of why it works. This is how the monoamine hypothesis and the serotonin hypothesis both developed. Does knowing this give us more or less confidence in the effectiveness of increasing serotonin for treating MDD? (Possible answer: it

should not affect our confidence level in the effectiveness of the drugs, as they have been shown to work for many people, but it should raise questions as to whether it is just the serotonin levels that are having the effect. If we see that a treatment appears to work without really understanding all of the mechanisms, it is a big leap to say it is because of increased serotonin.)

The debate over the role of serotonin in depression

There are two main issues that psychologists have with the serotonin hypothesis:

- In the current understanding we have of the complexity of neurotransmission action in the brain, it is hard to believe that any **one** neurotransmitter can be responsible for such a diverse disorder as depression, which, unlike Parkinson's disease, is not an identifiable brain disorder.
- If a lack of serotonin available in the synapse was the single cause of depression, then selective serotonin reuptake inhibitors (SSRIs) like fluoxetine, which block the reuptake of serotonin by the presynaptic neuron, should work for everyone. However, they do not, and moreover, while the balance between serotonin in the neurons and serotonin in the synapse changes almost immediately when a person starts taking an SSRI, this can take weeks to translate into an alleviation of symptoms.

Suggested critical thinking for students: what sort of empirical evidence is necessary to demonstrate the role of serotonin in clinical depression? (Suggested answer: measuring the level of serotonin in the brain of those who have been diagnosed with depression. If their other brain chemicals are all within normal levels, except for serotonin, which is low when compared to a group of people without depression, this would be good evidence for serotonin's role. Note: it has only been possible to measure serotonin in the brain rather than the blood for about the past ten years. Earlier studies are based on measuring serotonin in the blood.)

Evidence for a role for serotonin in depression

Tryptophan is the amino acid from which serotonin is built. It is found in a number of foods, including dairy, poultry and some fruits. The best evidence that serotonin has a role in depression comes from 'tryptophan depletion' studies, where the participant's diet is manipulated to severely reduce tryptophan and so reduce the serotonin

levels in the brain. In healthy participants with no sign of depression this does not produce significant change in mood; however previously depressed patients who are no longer on medication showed brief significant symptoms of depression (Delgado et al., 1990).

Suggested critical thinking for students: what does this suggest the role of serotonin is? (**Suggested answer:** lack of serotonin seems to be positively correlated with a return of depressive symptoms in people who were in remission. This suggests that serotonin levels are not a sufficient explanation for the onset of depression for everyone, just those who have previously suffered from it. However, maybe low serotonin impairs the mechanisms that are maintaining recovery from depression.)

Evidence that serotonin plays a limited role or no role in depression

Kirsch and Sapirstein (1998) conducted a very well-known meta-analysis of combined data from 38 trials that included patients who had been given SSRI antidepressants, placebos or no treatment and then applied mathematical reasoning to estimate how much the placebos contributed to the improvements in mood. When the researchers calculated the strength of the placebo effect by combining the trials, they found that 75 percent of an antidepressant's effect could have been obtained merely by taking the placebo. The publication of their findings contributed to a lot of criticism of the pharmacological industry for promoting SSRIs when this research suggested they were little better than placebos.

Moncrieff et al. (2022) carried out a large umbrella study of many previous studies, looking at the role of the serotonin transporter gene, tryptophan depletion studies, serotonin receptors and other research that investigated the role of serotonin in depression. They concluded that there was no consistent evidence of there being an association between serotonin and depression, and no support

for the hypothesis that depression is caused by lowered serotonin levels or lowered serotonin activity.

Suggested critical thinking for students: how can these contradictory findings be explained? (**Suggested answer:** There appears to be some role played by serotonin in depression, though its mechanism is unclear. SSRIs seem to work for the majority of people who take them and it is interesting that children and adolescents responded to Prozac better than adults. If Kirsch's claims are true and placebos work nearly as well as SSRIs, then this suggests a role for an individual's interpretation of their treatment. To be treated with medication is to be shown care and concern and perhaps this is part of the unexpected placebo effect when treating depression.)

Conclusion

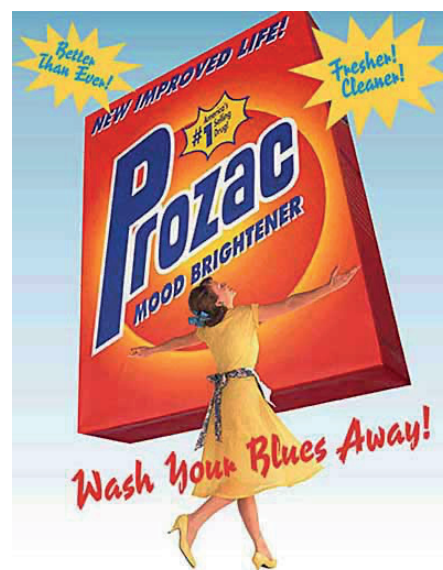
The possible role of serotonin in depression is a separate question from the antidepressant effects of the seven different SSRIs currently marketed. Research has shown that these medications are at least to some extent effective, especially for severe depression (Reyad, 2021.) Theories that link low levels of serotonin directly to depression are no longer credible. Moreover, there are many different types of depression, and it is a disorder with potentially many underlying causes.

The reason for the popularity of the serotonin hypothesis could be that a single biological explanation is more attractive to a person experiencing depression and taking medication seems a simple option. 'You're short of this, so take this pill.' We may have come a long way from the 1950s in choice of treatments, but we are still in the position of knowing a treatment works, but not knowing exactly how.

Suggested follow-up activity for students:

Find out the names of two anti-depressant medications and how they are believed to work. Sites like the NHS at <https://bit.ly/3RESA3d> can be useful.

Make a list of the strengths and weaknesses of the biological approach to treatment for depression.



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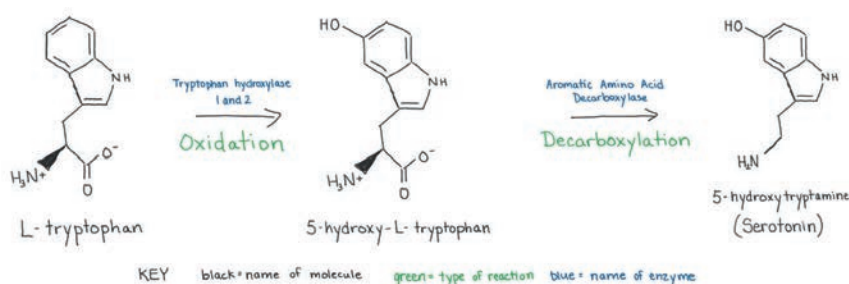
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DR LAURA SWASH,
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THE INCREASING PREVALENCE OF **EATING DISORDERS** **WITHIN SCHOOLS**

It is unavoidable that all secondary schools will, at some point, have a student suffering from an eating disorder, but the current rate of increase in cases is extremely concerning and requires urgent addressing.

Between the 2015/16 financial year and 2020/21, there was a 90%, over 11,000 episodes, increase in hospital admissions for eating disorders.

Fortunately, the majority of eating disorder cases won't get to this critical condition but that does not mean that the tens of thousands which go unadmitted aren't severely dangerous or life altering. When the human body is consuming fewer calories than it requires, crucial internal processes can be affected. This has a particularly adverse impact on the rapidly developing bodies of children and young people. Testosterone and oestrogen production, arguably the most important hormones in young men and women going through puberty, can be reduced resulting in hampered physical development. Furthermore, the brain consumes around one-fifth of the body's calories and will struggle to function properly if it cannot get these. Issues concentrating and sleeping can arise, thus negatively affecting a student's performance within school; potentially leading to more mental health issues.

Despite most eating disorders occurring within teenage girls, it is important to note that boys

are still very much susceptible to developing them. During the 2020/21 fiscal year young men and boys accounted for 637 admissions – a 128% increase compared to 2015/16. Although this may not seem like a particularly concerning number, it is important to remember that it represents the gravest of cases and the ones which do not reach this point can still be extremely dangerous.

Disordered eating revolving around muscularity and athletic development is especially common amongst boys, with a study by the University of California suggesting that a staggering 22% of males and 5% of females aged 18-24 exhibit these behaviours. These sorts of disorders can often go overlooked as they don't have a "negative" effect on the person's appearance, and are done in the aim of muscle gain, but they can still have damaging consequences. In order to "bulk," it is not uncommon for boys to eat until they feel nauseous and uncomfortably full. Just a few weeks later, however, they will considerably reduce their own calorie intake in order to lose fat and show off the muscles which the bulking has helped them gain. This behaviour can result in one developing an unhealthy relationship with food and body image, whilst also viewing eating as a chore, potentially causing a plethora of issues further down the line. Thus, it is important to acknowledge that, despite

stereotypes, boys are still very susceptible to eating disorders as the organisation Beat Eating Disorders reports: 'on average it takes nearly three times as long for males to get a referral from their GP for an eating disorder.' This significant delay in access to services can cause potentially irreversible damage and beating stereotypes around eating disorders is key to mitigating this issue.

Genetics and family history also play huge roles in increasing the chances that an individual will develop an eating disorder. Studies suggest that those with relatives who have an eating disorder are 7 to 12 times more likely to develop anorexia nervosa or bulimia nervosa. This is due to the fact that certain behavioural and personality traits can be hereditary. Obsessive thinking, perfectionism, emotional instability and stress reactivity can all be heavily influenced by genetics, and it is easy to imagine how someone who struggles with these may be more prone to developing an unhealthy relationship with food and body image. The psychological and physical changes which adolescents go through during and after puberty can have a variety of behavioural effects including mood swings, increased anxiety and hyper-rationality. Hyper-rationality is when one over rationalises perceived benefits and therefore ignores negative consequences. Many of these behaviours can amplify the effect of genetics,

When compared to five to ten years ago the current data on eating disorders shows just how alarming the situation has become, with a significant amount of this change having occurred during the COVID-19 pandemic.

therefore making young people particularly prone to developing eating disorders.

When compared to five to ten years ago the current data on eating disorders shows just how alarming the situation has become, with a significant amount of this change having occurred during the COVID-19 pandemic. According to the NHS nearly 10,000 children and young people, i.e., people under 24, started treatment for eating disorders between April and December 2021. For comparison, this is a 25% increase from the previous year and a massive two-thirds increase from pre-pandemic years. The CDC in the USA reports that the 'proportion of ER (A&E) visits related to eating disorders doubled among adolescent females' during the pandemic.

COVID-19 has clearly had a colossal impact on the present eating disorder situation. Most individuals would probably agree on a personal level that the sense of angst surrounding the virus as well as the sense of social isolation created by the pandemic and its lockdowns cannot have been good for general mental health. On the topic of mental health amongst healthcare professionals Mohsen Khosravi from the University of Medical Sciences in Iran said: 'We know that negative emotions including anxiety, stress, depression and anger trigger

disordered eating behaviours. For healthcare professionals, the lack of medical equipment in the current crisis is accompanied by the intensification of negative emotions, triggering disordered eating.' Also, Paul Machado, head of the Eating Disorders Research Group at the University of Minho in Portugal, said that many of those who had a pre-existing eating disorder suffered from a 'worsening of their condition, especially if associated with difficulties in emotion regulation.'

I doubt that lack of medical equipment would have created a barrage of negative emotions within the British youth, but other factors caused by COVID-19 would have. Of course, the extreme lack of social interaction during the lockdowns would have certainly created negative emotions, especially considering people of this age group gain much more satisfaction from the company of their peers than their parents. The stress of online school, or lack thereof and therefore a sense of falling behind, would have heightened these emotions, especially for those faced with the uncertainty of exams. Another very common sentiment that was felt amongst teenagers and young adults was that their youth was escaping them and that they were missing out on key experiences. The extreme negative emotions caused by all this would have severely heightened the chances of an individual developing an eating disorder, especially if they had any of the genetic predisposition mentioned earlier.

There is virtually nothing that schools and teachers can do about a pupil developing an eating disorder. Not only is it unreasonable to hope to protect them from their own biological and genetic makeup, but there is also the inevitable exposure to media which everyone will experience. Additionally, schools can hardly control the influence of family and friend groups which students are a part of.

Despite this, schools can still be vital in helping resolve an eating disorder. Being alert to early symptoms and having systems in place so that students can seek help themselves can mean that treatment for eating disorders starts much earlier, thus greatly improving the odds of a full recovery.



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THE WAYS IN WHICH BIOLOGY INFLUENCES PSYCHOLOGICAL RESPONSES



The biological approach to psychology suggests that all human behaviour is rooted in physiological and biological features of the body. It comes from the idea that all behavioural traits can be traced back to an inherited gene, which exists primarily due to evolutionary benefits (Angell, 1909).

The approach focuses on three main factors: genetics, the nervous system and the chemistry and configuration of the brain.

Genetics are said to play a large role on the influence of behaviour possibly due to evolution. Darwin's proposed theory looks at traits based on how they would have been used during evolution. He believed that if a gene produces a good survival trait, it will get passed on through generations (Bohlius et al, 2011). In our day to day lives it is hard to see how this idea manifests, however fight or flight is a primary example. In the years and generations before us the emotion fear benefited humans; it meant that we would react accordingly in the face of danger. If a man in prehistoric days needed to eat, he needed to catch his prey. This would present a dangerous situation if things took a turn for the worst. Adrenaline (hormone often associated with the flight or fight response) would kick in and the man could fight his prey or run from (flight) it. In modern times our food is readily available and luckily there's no need to hunt it ourselves however the adrenal glands are still ready to run from anything they view as a threat. In times of high stress adrenaline is released and the same fight or flight response may be issues. It will trigger many physiological changes thanks to the sympathetic nervous system that sets a person up to face their fears (Harvard Medical School, 2020).

The biological approach also looks at how the central nervous system (brain and spine) are involved with how we see and react with the world (Newman, 2022). Some behaviours that we are said to be 'born with', when viewed scientifically, are the work of nerves and neurons in the peripheral nervous system. The nervous system is a specialised network of cells that help to respond to stimuli in the environment and co-ordinate

the normal functioning of various organs. The central nervous system forms the main body but works with many divisions of the peripheral nervous system to allow a fully functioning body. The peripheral nervous system is divided into the somatic nervous system and the autonomic nervous system. The somatic nervous system is responsible for muscle movement, it gets information directly from the central nervous system which enables the muscles to quickly react in a reflexive manner. As the name suggests, the autonomic nervous system controls functions that come automatically to us. It relays information to major bodily organs that control things like breathing rate, digestion, and heart rate. As previously mentioned, it is associated with the fight or flight response. So, when you are facing a time of high stress a subdivision of the autonomic nervous system called the sympathetic nervous system triggers physiological changes to allow survival. These include an increased heart and breathing rate and inhibited digestion. These changes ensure no energy is expended on means that aren't essential to survival at that given moment. This change is temporary, and another subdivision of the autonomic nervous system called the parasympathetic nervous system will alter these changes to a more relaxed/normal state when the threat is no longer present. This means your breathing rate and heart rate will reduce to a resting state and digestion will be initiated again.

The biochemistry of the brain is also a major factor in the biological approach to psychology. This explores the influence of neurotransmitters and hormones on human behaviour. A network of neurons can be found in both the central and peripheral nervous system, they deliver electrical and chemical messages across the body. When a sensory neuron encounters a stimulus an electrical impulse known as an action potential is fired along the neuron. Between neurons there are gaps called synapses, so whilst the impulse along a single neuron is electrical, across these synapses a chemical message must be delivered instead. This is where neurotransmitters come in, they travel

along the synaptic gap in synaptic vesicles and get taken up by a neighbouring neuron in the neural network at their postsynaptic receptor site. Neurotransmitters can be excitatory or inhibitory, this means when they are delivered to the postsynaptic neuron, they will either trigger the new neuron to fire another action potential (excitatory) or make it less likely to fire another action potential (inhibitory). Much like genetics and the nervous system, these tiny neural networks are just in place when we are born and control a lot of reflexive behaviour we do. For example, when we touch a hot surface, our automatic reaction is to pull our hand away, this isn't something we have to think about as it just happens. This process of it 'just happening' is due to the presence of neurons and their speedy ability to control muscle movement.

Each of these three factors feeds into the biological approach and helps to provide a basis for research and application of psychology in modern day. This includes therapies and treatments for various psychopathologies.



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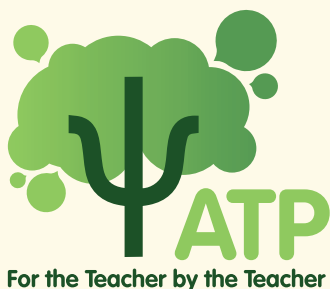
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LAXMI SHARMA
YEAR 13, EDGBASTON COLLEGE



What do you think about... ?

For our first option page, tell us what you think about the current qualification and assessment systems for Key Stage 4 and 5. What would you change?

In the October 2022 edition and on social media, you were asked for your views on the current qualification and assessment systems for Key Stages 4 and 5. Here are some of your comments...

On Twitter

M. Shaw: Outdated for A level. Works for students with good memories who can retain two years of information.

T. Dunn: Rip it up and start all over again, giving both students and teachers a voice to change both the content and the assessment.

On Facebook

K. Betts: Continuous assessment completed in exam conditions, or at home (where parents can help!)? I suppose with psychology, students only really gain that

holistic understanding towards the end of the course – surely students can't effectively evaluate a theory if they've only addressed that approach/perspective?

D. Blakemore: I am retired now and this was a question that was put forward when I was a student in year 10! I see the merit in continuous assessment but as someone who did well in exams without working it would have been hard for me. However, I think it would be better discipline for students but harder work for teachers. Perhaps 50% each way would be a good compromise.

J. Mary: Reintroduce an element of NEA. The previous form of this allowed for in depth analysis and proper practical work (for OCR). I also think the late advance info meant that courses were fully taught but helped hone revision and exam technique.

A. Mac: I like advanced information, given a couple of weeks before the exams. This means the whole spec is taught and exam stress is reduced by enabling focused

revision. Continuous assessment would stress both teachers and students.

D. Gajic: We also need to consider how to enable exams to be online to meet the demands of modern society. I believe this is currently an area of research for awarding bodies. Big issues with how to make them secure and cheat proof though.

L. Swash: 50-50 balance, with open book exams focused on conceptual understanding, practical application, and critical thinking.

N. Yeates: I would make it much less memory based in the 21st Century and much more choosing the best information and applying it. More skills and less rote learning needed.

Thanks for your comments :-)

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