





# Wales COVID-19 Evidence Centre (WCEC) Rapid Review

A rapid review of strategies to support learning and wellbeing among 16-19 year old learners who have experienced significant disruption in their education as a result of the COVID-19 pandemic Report number – RR00016 (September 2021)

#### **Rapid Review Details**

#### Review conducted by:

Wales Centre for Evidence Based Care

#### **Review Team:**

Deborah Edwards, Judith Carrier, Judit Csontos, Elizabeth Gillen. Maggie Hendry

#### Review submitted to the WCEC on:

28th September 2021

#### Stakeholder consultation meeting:

28<sup>th</sup> September 2021

#### Rapid Review report issued by the WCEC on:

6th October 2021

#### WCEC Team:

Alison Cooper, Ruth Lewis, Micaela Gal, Becki Law, Adrian Edwards

#### This review should be cited as:

[RR00016. Wales COVID-19 Evidence Centre. Rapid Review of strategies to support learning and wellbeing among 16-19 year old learners who have experienced significant disruption in their education as a result of the COVID-19 pandemic. September 2021.

http://www.primecentre.wales/resources/RR/Clean/RR00016\_Wales\_COVID-19 Evidence Centre Rapid review Post-16 education September 2021.pdf

**Disclaimer:** The views expressed in this publication are those of the authors, not necessarily Health and Care Research Wales. The WCEC and authors of this work declare that they have no conflict of interest.

# A rapid review of strategies to support learning and wellbeing among 16-19 year old learners who have experienced significant disruption in their education as a result of the COVID-19 pandemic Report number – RR00016 (September 2021)

#### TOPLINE SUMMARY

#### **Background / Aim of Rapid Review**

The COVID-19 pandemic has caused a significant disruption to all levels of education, especially pupils from disadvantaged and vulnerable groups. Students aged 16-19 years are at a crucial time in their lives as they transition into further study or employment. The pandemic has brought together a unique set of conditions, not only involving disruption to education, but also to environmental, economic, social and emotional areas of young people's and their families' lives. This rapid review investigated strategies to support learning and wellbeing among 16-19 years old learners engaged in full time education within a college or school setting who have experienced significant gaps in their education as a result of the COVID-19 pandemic.

#### What is a Rapid Review?

Our rapid reviews use a variation of the systematic review approach, abbreviating or omitting some components to generate the evidence to inform stakeholders promptly whilst maintaining attention to bias. They follow the methodological recommendations and minimum standards for conducting and reporting rapid reviews, including a structured protocol, systematic search, screening, data extraction, critical appraisal, and evidence synthesis to answer a specific question and identify key research gaps. Literature searches were conducted on 15/8/21 and 26/9/21. Included systematic reviews were assessed for quality with the AMSTAR-2 tool and included rapid reviews were assessed with the RaPeer tool.

#### **Key Findings**

Extent of the evidence base

 14 systematic reviews (nine including meta-analysis), three rapid reviews, one protocol and five UK organisational reports

Recency of the evidence base

Reviews were published 2016-2021 and included pre-COVID evidence

#### Evidence of effectiveness

 There was no direct systematic review evidence that evaluated strategies to support learning for 16-19 year old learners following the COVID-19 pandemic.

- Pre-COVID evidence for several methods demonstrated a positive impact for 3-18 year old learners to enable them to progress with their learning. These included: additional tutor support (one to one, small group tuition, mentoring, peer support); additional hours of tuition (extension of the teaching day, or school holiday interventions); metacognition and self-regulation; and additional maths and English tuition.
- Scholarships, financial aid and college information have been found to help high-potential but low-income learners progress to higher education in the USA.
- The evidence showed no benefit in withdrawing students from core lessons for additional English tuition and there was no evidence that evaluated whole group additional tutor support and online additional tutor support.
- There was no direct systematic review evidence found for evaluating 16-19 years old learners' wellbeing related to the COVID-19 pandemic.
- Pre-COVID evidence showed that screening and effective referral pathways to clinical treatment are beneficial in improving student wellbeing for older teenagers and sixth form college students; and counselling, physical activity and interventions aiming to improve sleep are beneficial in improving student wellbeing across all the key-stages. Additionally, mindfulness interventions are successful in improving wellbeing for a wide range of learners especially in post-secondary education.
- Mixed evidence was found for therapy-based prevention programmes and social and emotional learning and no evidence found for evaluating support from family and friends.

#### **Policy Implications**

- Evidence for strategies to support learning and wellbeing for 16-19 years old learners who have experienced significant disruption in their education is from studies conducted before the COVID-19 pandemic.
- Research is required to evaluate whether interventions that were successful in relatively "normal" circumstances will be as successful during / post-pandemic.
- Although supported by a limited volume of evidence, targeting support activity at learners from the most deprived socio-economic backgrounds has a significant positive impact on their progress.

#### Strength of Evidence

Most included studies were appraised as 'critically low-quality' (review) evidence

## **TABLE OF CONTENTS**

TABLE OF CONTENTS	4
BACKGROUND	6
1.1 Purpose of this review	6
RESULTS	7
2.1 Overview of the evidence base	7
2.1.1 Progressing with learning	7
2.1.2 Student wellbeing	8
2.2 Effectiveness of methods of support for progressing with learning	9
2.2.1 Bottom line results for methods of support for progressing with learning	10
2.3 Effectiveness of methods of support for improving student wellbeing	11
2.3.1 Bottom line results for methods of support for improving student wellbeing	
DISCUSSION	
3.1 Summary of the findings	
3.2 Limitations of the available evidence	
3.3 Implications for policy and practice	
3.4 Strengths and limitations of this Rapid Review	
REFERENCES	
RAPID REVIEW METHODS	28
5.1 Eligibility criteria	28
5.2 Literature search	
5.3 Study selection process	
5.4 Data extraction	29
5.6 Quality appraisal	29
5.7 Data presentation and summary	
EVIDENCE	
6.1 Study selection flow chart	30
6.2 Information available on request	30
ADDITIONAL INFORMATION	30
7.1 Conflicts of interest	
7.2 Acknowledgements	30
7.3 Disclaimer	30
ABOUT THE WALES COVID-19 EVIDENCE CENTRE (WCEC)	32
APPENDIX	33

#### Abbreviations:

Acronym	Full Description
EEF	Education Endowment Foundation
FE	Further education
HE	Higher education
SFCA	Sixth Form Colleges Association

#### **BACKGROUND**

This Rapid Review is being conducted as part of the Wales COVID-19 Evidence Centre Work Programme. The above question was suggested by the post-16 and transitions team working as part of the Welsh Government's Renew and Reform programme. The work will help to shape the COVID-19 related recovery programme's work in providing **medium to long term coordinated support** for learners' wellbeing and progression across post-16 education and training in Wales. The findings will also be used to inform a baseline against which the impact of relevant interventions introduced as part of the programme can be monitored.

The COVID-19 pandemic caused a significant disruption to all levels of education. Several systematic reviews have provided evidence of learning loss across a range of subjects (Patrinos and Donnelly 2021), which is higher for pupils from disadvantaged and vulnerable groups (Crenna-Jennings et al. 2021; Darmody et al. 2021). Although the education of learners of all ages has been affected, post-16 learners are at a crucial time in their lives as they transition into further study or employment (Holt-White and Culliane 2021). It is important to support learners to overcome any negative impacts associated with the COVID-19 pandemic in an efficient and impactful way. Both national and international initiatives will therefore be needed to support schools in helping students catch up on missed learning, especially those post-16 learners from vulnerable backgrounds. A number of catch-up strategies for disadvantaged students have been suggested and include summer schools, extended school days, tutoring programmes and other practices (Crenna-Jennings et al. 2021). As well as focusing on initiatives for catching up and progressing with learning, it is also important to consider young people's mental health in the context of COVID-19 (Six Form Colleges Association 2021).

#### 1.1 Purpose of this review

This Rapid Review investigated strategies to support learning and wellbeing among 16-19 years old learners engaged in full time education within a college or school setting who have experienced significant gaps in their education as a result of the COVID-19 pandemic. Prior to preparing this review (July 2021), a Rapid Evidence Summary was initiated across secondary education settings. Following searches of repositories specific to COVID-19 literature, the Education Resources Information Center database (ERIC) and education focused organisational websites (for example Nuffield Foundation, Education Policy Institute, Education Endowment Foundation), a number of reviews were identified. It was established that the evidence base on the impacts of COVID-19 in learning and attainment in disadvantaged children and young people has been thoroughly investigated (Chaabane et al. 2021, Drane et al. 2020, Patrinos and Donnelly 2021, Viner et al. 2021) and a further living systematic review and meta-analysis is currently underway (Betthaeuser et al. 2020).

A recent rapid evidence review by Moss et al. (2021) for DfE examined the evidence for the harms to pupils in the lower secondary and primary sectors from COVID and considered strategies for mitigating these harms. However, several reviews reported a **paucity of**COVID-19 pandemic specific evidence regarding strategies to mitigate these impacts

for post-16 learners (Spours et al. 2021, Crenna-Jennings et al. 2021). It was therefore decided to extend the search to literature that explored learning and wellbeing among 16-19 years old learners engaged in full time education within a college or school setting (referred to throughout the report as post-16 learners) who have experienced significant gaps in their education for any reason, whether through disadvantage or from regions struck by past disease, conflict, natural disasters etc. as well as any COVID-19 pandemic-specific studies. For the purposes of this report, systematic reviews where the primary studies were conducted before the start of the COVID-19 in December 2019 were referred to as pre-COVID-19. Any evidence published in response to the pandemic was referred to as post-COVID.

The specific **questions** posed by the stakeholders were:

- Q1: What methods of support for 16-19 years old learners are successful in enabling individuals to progress with their learning?
- Q2: What methods of support are beneficial in improving 16-19 year old learners' wellbeing?

#### **RESULTS**

#### 2.1 Overview of the evidence base

Of the 1,782 records identified across our searches, 14 systematic reviews (9 including a meta-analysis), three rapid reviews and one protocol for a systematic review met our eligibility criteria. Five broader organisational reports that informed the topic were also included.

All the systematic reviews incorporated **international literature** with the exception of three systematic reviews, where the included reviews were either only from the **USA** (Renbarger and Long 2019, Schmidt and Park 2021) or where the majority were from the **USA** (Lindsay et al. 2019). The five broader organisational reports included in this rapid review were all from the **UK**.

#### 2.1.1 Progressing with learning

The searches identified the following:

- Four systematic reviews (Lindsay et al. 2019; Renbarger and Long 2019; Schmidt and Park 2021; Maughan et al. 2016) and one systematic review with meta-analysis (Valentine et al. 2009) that explored progressing with learning in post-16 settings pre COVID-19.
- One rapid review (Spours et al. 2021) set out to explore progressing with learning in post-16 settings as a result of the COVID-19 pandemic.
- A further seven systematic reviews with meta-analysis explored the concept for 3-18 year olds in secondary schools pre COVID-19 (EEF 2021a, b, c, d, e, f and g).
- Additionally, four broader organisational reports explored progressing with learning in post-16 settings as a result of the COVID-19 pandemic (Association of Colleges 2021a; Crenna-Jennings et al. 2021; Holt-White and Cullinane 2021; The Sutton Trust 2021).

 A systematic review is currently registered on PROSPERO and due to report in December 2021 and asks the questions "what evidence is there, on educational policies and interventions relating to COVID-19 and other public health emergencies, aiming to improve quality and inclusiveness in education? and "What are the effects of such educational policies and interventions? (Bangpan et al. 2020).

#### Outcomes

All the Educational Endowment Foundation systematic reviews that were part of the teaching and learning toolkit reported on additional months of progress in learning. The other systematic reviews reported on on individual learners' outcomes and included educational attainment, short term grades and persistence, academic performance and completion. Some of the systematic reviews from the USA also focused on learners progressing to the next stage of learning and included accessing college, non-cognitive support, college enrolment, career, transition skills or individual learning achievement such as student experience, student success, non-cognitive support.

#### Recommendations from the organisational reports

A number of different organisational groups have made recommendations that focus on enabling 16-19 year old learners to progress with their learning and include the <a href="Education Policy Institute">Education Policy Institute</a> (Crenna-Jennings et al. 2021), The Sutton Trust (<a href="Holt-White and Cullinane">Holt-White and Cullinane</a> 2021, The Sutton Trust 2021), and the <a href="Association of Colleges">Association of Colleges</a> (2021a). These range from broad appeals for additional funding (often made in the context of policy and funding arrangements that are specific to England) to more targeted support for disadvantaged groups as follows <a href="(Table 1)">(Table 1)</a>.

#### 2.1.2 Student wellbeing

The searches identified the following:

- Two systematic reviews (Lindsay et al. 2016; Lindsay et al. 2019), one systematic review with meta-analysis (Halladay et al. 2019) and one rapid review (White 2017a, b) explored methods of support that are beneficial for student wellbeing in post-16 settings pre COVID-19.
- Two rapid reviews (Sixth Form Colleges Association 2021, Spours et al. 2021) set out to explore methods of support that are beneficial for student wellbeing post-16 settings as a result of the COVID-19 pandemic.
- Additionally, two broader organisational reports explored methods of support that
  are beneficial for student wellbeing in post-16 settings as a result of the pandemic
  (Association of Colleges 2021b, Holt-White and Cullinane 2021).

#### **Outcomes**

The reported outcomes included self-determination, empowerment, self-efficacy, self-confidence, self-advocacy, autonomy, resilience, and stress, and improving mental health.

#### Recommendations from the organisational reports

The <u>Association of Colleges</u> (2021b) provided a list of recommendations for policy makers, colleges and for their own organisation to help improve students' wellbeing. The rapid review by Spours et al. (2020) did not find any systematic reviews in this area for post-16 learners

and reported only on the grey literature, particularly summarising the recommendations found within the Association of Colleges (2021b) report and the Sixth Form Associations rapid review (Sixth Form Colleges Association 2021). These recommendations can be found in <a href="Table 1">Table 1</a>. In addition to these recommendations, the <a href="Sutton Trust">Sutton Trust</a> (Holt-White and Cullinane 2021) suggested that Universities should provide additional wellbeing support for students.

#### 2.2 Effectiveness of methods of support for progressing with learning

The methods of support for learners that have evidence of success in enabling individuals to progress with their learning are reported in Table 2 where they are highlighted in green and hyperlinked to the main data extraction tables (see Appendix) where further information is available.

- Additional tutor support by trained and qualified teacher in the subject of study, such as one to one tuition (EEF 2021a), small group tuition (EEF 2021b), learner-led peer support sessions (EEF 2021c), mentorship (EFF 2021d), metacognition and self-regulation (EFF 2021g) have demonstrated positive impact for 3-18 year olds enabling them to progress with their learning. Although mentoring can have a negative impact with unsuccessful pairing of mentor and mentee (EEF 2021d).
- Additional hours of tuition on chosen course of study, such as extension of the teaching day (EEF 2021f) or additional teaching during school holidays (EEF 2021e) were successful in enabling 3-18 year olds to progress with their learning.
   Specific summer interventions for low income, high potential students transitioning to FE (Renbarger and Long 2019) were also successful.
- Additional hours of tuition for maths and English such as specific interventions
  for maths and English literacy in the classroom, level 2 maths embedded in
  vocational studies, writing interventions for English literacy (Maughan et al. 2016)
  have demonstrated positive impact for 16–18-year olds enabling them to progress
  with their learning.
- Other approaches which included scholarships, financial aid, college information in the USA (Renbarger and Long 2019) and interventions designed to keep disadvantaged youth in college once admitted (Valentine et al. 2009).

The methods of support for learners that have *mixed evidence* in enabling individuals to progress with their learning in post-16 settings are reported in Table 2 where they are highlighted in blue and hyperlinked to the main data extraction tables (see Appendix) where further information is available.

- Additional tutor support such as mentoring for youth and young adults with learning disabilities in the USA (Lindsay et al 2016).
- Additional hours of tuition for maths and English for 16-18 year olds such as English literacy taught across the curriculum and supporting maths teaching as additional hours of tuition on chosen course of study (Maughan et al. 2016).
- Additional assessed work for low income, high potential students transitioning to FE in the USA such as early access to college work including advanced

placement, International Baccalaureate and dual credit (Renbarger and Long 2019).

 Other approaches in the USA including non-academic interventions for postsecondary enrolment (Schmidt and Park 2021).

The methods of support for learners that have shown *no demonstrable benefit* in enabling individuals to **progress with their learning in post-16 settings** are reported in Table 2 where they are **highlighted in yellow** and hyperlinked to the main data extraction tables (see Appendix) where further information is available.

 Withdrawing students from core lessons for extra English catch-up as additional hours of tuition on chosen course of study (Maughan et al. 2016).

No evidence was found to enable an evaluation of the following methods of support

- Whole or merged group additional tutor support by trained and qualified teacher in the subject of study.
- Qualified teacher-led or independent study as additional tutor support by trained and qualified teacher in the subject of study.
- Online synchronous, online asynchronous, or in-person face-to-face additional tutor support by trained and qualified teacher in the subject of study.
- Spours et al. 2021 reported that evidence from one systematic review suggested that improved training, collaborative learning & more blended learning are required to support catch-up in FE settings.
- There was no systematic review evidence on mitigating the increased educational inequalities directly relevant to the FE Sector (Spours et al. 2021)

#### 2.2.1 Bottom line results for methods of support for progressing with learning

This section summarised the evidence from 12 systematic reviews (eight including a metaanalysis), one rapid review, and four broader organisational reports – all from prepandemic contexts. Evidence from systematic reviews demonstrated that one to one tuition, small group tuition, learner-led peer support sessions, extension of the teaching day, additional teaching during school holidays, specific summer interventions, mentorship, metacognition and self-regulation, maths and English literacy in the classroom, level 2 maths embedded in vocational studies, writing interventions for English literacy scholarships, financial aid, college information have demonstrated positive impact for 3-18 year olds and post-16 learners enabling them to progress with their learning (pre COVID-19). English literacy taught across the curriculum and supporting maths teaching, early access to college work, including advanced placement, International Baccalaureate and dual credit and a range of other non-academic approaches as methods of support that can be beneficial to support learning among 3-18 year olds and post-16 learners (pre COVID-19). Evidence from one systematic review showed no demonstrable benefit of withdrawing students from core lessons for extra English catchup (pre COVID-19). The rapid review by Spours et al (2020) identified that there was no systematic review evidence on mitigating the increased educational inequalities directly relevant to the FE Sector as a result of the COVID-19 pandemic.

#### 2.3 Effectiveness of methods of support for improving student wellbeing

The methods of support that have evidence of success on *improving student wellbeing* in **post-16 settings** are reported in **Table 3** where they are **highlighted in green** and **hyperlinked** to the main data extraction tables (see Appendix) where further information is available.

- Support from NHS Children and Adolescent Care Services including screening SFCA 2021), and effective referral pathways to clinical treatment (SFCA 2021) for older teenagers and those in sixth form colleges (SFCA 2021).
- Support from trained internal or external staff, such as mindfulness (Halladay et al. 2019; White 2017a, b), counselling (SFCA 2021), physical activity (SFCA 2021) and interventions aiming to improve sleep (SFCA 2021) across all ages (4 years to HE).

The methods of support that have *mixed evidence* on improving student wellbeing in **post-16 settings** are reported in **Table 3** where they are highlighted in blue and hyperlinked to the main data extraction tables (see Appendix) where further information is available.

- Specific social and emotional learning (White 2017a, b) and therapy-based prevention programmes (SCFA 2021) that are provided by trained internal or external staff.
- Interventions that aim to build self-confidence and wellbeing, such as mentorship (Lindsay et al. 2016); and post-secondary transition interventions (Lindsay et al. 2019).

No evidence was found to enable an evaluation of for the following methods of support

• Support from family and friends to improve student wellbeing in post-16 settings.

# 2.3.1 Bottom line results for methods of support for improving student wellbeing

This section summarised the evidence from three systematic reviews (one included a meta-analysis), three rapid reviews and two broader organisational reports – all from prepandemic contexts. Evidence from one rapid review demonstrated screening and effective referral pathway to clinical treatment are beneficial in improving student wellbeing for older teenagers and those in sixth form colleges (Pre COVID-19). Additionally, evidence from the systematic reviews and two of the rapid reviews showed that mindfulness, counselling, physical activity and interventions aiming to improve sleep are beneficial in improving student wellbeing across all key-stages (pre COVID-19). Evidence from systematic reviews and evidence syntheses provided mixed results for specific social and emotional learning, therapy-based prevention all key-stages (pre COVID-19) and for interventions that aim to build self-confidence and wellbeing, such as mentorship and post-secondary transition interventions (Lindsay et al. 2019) for post-16 learners (pre COVID-19). The rapid review by Spours et al (2020) identified that there was no systematic review evidence on mitigating the increased educational inequalities directly relevant to the FE Sector as a result of the COVID-19 pandemic.

Table 1: Summary table of characteristics of organisational reports

Citation Citation retrieval source	Country	Objective	Key relevant recommendations		
Association of Colleges 2021a	UK	Recommendations for	Policy proposals		
College catch-up funding and remote education. AoC survey and policy proposal Report template - COVID survey (aoc.co.uk)		catch-up due to lost learning and wellbeing	i) Fair funding and hours: more funding per student to increase hours of teaching and support towards levels provided in other OECD countries.p.5.		
Retrieved from organisational website			ii) Targeted support for the most disadvantaged: extend the student premium from age 16-19, including the service premium and looked after children premium; a specific fund to support High Needs SEND students. p. 5/6		
			iii) Build <b>self-confidence and wellbeing:</b> a base-rate increase or specific funding for more extra-curricular enrichment activities such as sport, drama, music and volunteering. p. 6		
			iv) Education recovery year: students finishing this year to have access to up to a year of fully funded additional study where needed, including a bursary to support students to participate. p.6		
Association of Colleges 2021b Mental health and colleges https://www.aoc.co.uk/sites/default/files/Mental% 20Health%20in%20Colleges%20- %20Report.pdf  Retrieved from organisational website	UK	Recommendations for improving mental health	<ul> <li>Recommendations for Policy Makers:</li> <li>Create a national fund to support the transition and retention of 16 year olds into colleges in September 2021, targeting most vulnerable learners</li> <li>Ensure all policies have an assessment of their impact on the mental health of staff and students</li> <li>Ensure that investments and training opportunities relating to mental health and for education settings take specific account of the needs of FE colleges and their whole learner population</li> <li>Explore the potential to roll out the social prescribing model, using physical activity and other enrichment activities to promote student wellbeing</li> <li>Recommendations for Colleges:</li> <li>Develop additional support programmes for learners with mental health difficulties or deemed vulnerable to support smooth transition and aid retention</li> <li>Sign the AoC Mental Health and Wellbeing Charter and annually evidence how the meet all 11 commitments</li> <li>Engage with the local suicide prevention plan</li> <li>Ensure all staff have access to suicide awareness training</li> <li>Carry out regular surveys of college populations in order to build an evidence base and understand the efficacy of different interventions.</li> <li>Undertake annual staff wellbeing surveys</li> <li>Continue to engage with local health commissioners to ensure they are involved in local and national initiatives aimed at the mental health of young people</li> <li>Recommendations for AoC</li> </ul>		
			<ul> <li>Recommendations for AoC</li> <li>Work with experts to develop specific resources for suicide prevention for FE colleges</li> <li>Seek opportunities for further research linked to the mental health of learners in FE settings</li> </ul>		

Crenna-Jennings et al. 2021 Education recovery and resilience in England (Report for the Education Policy Institute) https://epi.org.uk/publications-and- research/education-recovery-and-resilience-in- england/ Retrieved from organisational website (Report for the Education Policy Institute)	UK	Recommendations for supporting support young people during transitions, between education and into employment	Work with national stakeholders, especially DfE, OfS, Department of Health & Social Care, and NHSE & I to ensure there is a good understanding of the FE setting and those who learn and work in colleges  A targeted approach to mitigate the inequitable impact of the pandemic and support young people during transitions, between education and into employment, are laid out below.  i) Extend the 16-19 Tuition Fund for a further two years p.39  ii) Provide funding to extend 16-19 courses for an additional year where there is demand p.40  iii) Fund post-16 places in Alternative Provision p.40  iv) Fund a new 16-19 Student Premium p.41
Holt-White and Cullinane 2021 A levels and University access 2021 https://www.suttontrust.com/wp- content/uploads/2021/07/A-Level-and- University-Access-2021.pdf  Retrieved from organisational website (Report for the Sutton Trust)	UK	Discusses impact of COVID-19 on learning, assessment and University applications and entry and present recommendations for universities, schools, and policy makers  Wellbeing	For universities  Applicants from disadvantaged backgrounds who have narrowly missed their offer grades should be given additional consideration in the admissions process. p.13  Universities should provide additional wellbeing supports for the incoming cohort. p. 13  Universities should identify key gaps in learning at an early stage in the first term, and provide support if necessary. p.13  For schools  It is more important than ever for schools to provide as much support to students as possible around results day and during the clearing period, which could be done remotely if necessary. p.13  For policymakers  Pupil premium and recovery premium funding, as well as National Tutoring Programme provision, should be extended to 16-19 year olds in education and training. p.13  Data on this year's GCSE and A Level results should be made available to researchers at an early stage as possible, in order to understand patterns in this year's results. p.13  There must be a long-term plan for assessment in 2022 and beyond. p.13.
The Sutton Trust 2021 Fairness first: Social mobility, COVID and education recovery https://www.suttontrust.com/wp- content/uploads/2021/05/Fairness-First-Social- Mobility-COVID-Education-Recovery.pdf Retrieved from organisational website	UK	Policy brief that outlines outline how the Sutton Trust believes they can make it a fairness-first recovery	Pupil premium and recovery premium funding should be extended to 16-19 year olds in education and training. p. 3  The National Tutoring Programme should be extended to those in post-16 education to ensure quality provision. p. 3

Table 2: Summary of which methods of support for learners are successful in enabling individuals to progress with their learning

Support measure/s	Type of research evidence	
	Pre-COVID	Post-COVID
Additional tutor support by trained and q	ualified teacher in the subject of study	
Group size	•	
One to one	EEF 2021a Systematic review and meta-analysis 3-18 years International literature Outcomes: Additional months progress in learning (n=123 studies) Authors quality rating: Moderate	
Small group	EEF 2021b Systematic review and meta-analysis 3-18 years Mainly USA literature Outcomes: Additional months progress in learning (n=62 studies) Authors quality rating: Moderate	
Whole group <sup>a</sup>		
Merged groups <sup>a</sup>		
Type of study		
Qualified teacher-led sessions <sup>a</sup>		
Independent study <sup>a</sup>		
Learner-led peer support sessions	Systematic review and meta-analysis 3-18 years International literature Outcomes: Additional months progress in learning (n=127 studies) Authors quality rating: High (score of 4 out of 5)	
Mentoring  Mentoring	Systematic review and meta-analysis 3-18 years International literature Outcomes: Additional months progress in learning (n=44 studies) Authors quality rating: Moderate Lindsay et al .2019	
	Systematic review Youth and young adults with learning disabilities Mainly USA literature Outcomes: College enrolment and transitions (n=not reported)	

	Authors quality rating: Level II (n=4), Level III (n=2), Level IV (n=4) for those with	
	positive outcomes	
Mode of delivery <sup>a</sup>		
online synchronous <sup>a</sup>		
online asynchronous <sup>a</sup>		
in-person face-to-face <sup>a</sup>		
in person lase to lase		
Additional hours of tuition on chosen cou	urse of study	
In the normal teaching term and days		
Level 2 maths	Maughan et al. 2016	
Specific interventions in maths classroom	Systematic review	
	16-18 years	
	International literature	
	Outcomes: Educational attainment (n=3 studies)	
Level 2 Feeligh literacy	Authors quality rating: Variable some robust	
Level 2 English literacy Specific interventions in English classroom	Maughan et al. 2016 Systematic review	
Specific interventions in English classroom	16-18 years	
	International literature	
	Outcomes: Educational attainment (n=6 studies)	
	Authors quality rating: Variable some robust	
Level 2 English literacy	Maughan et al. 2016	
Taught across the curriculum	Systematic review	
· ·	16-18 years	
	International literature	
	Outcomes: Educational attainment (n=3 studies)	
	Authors quality rating: Weak	
Level 2 maths	Maughan et al. 2016	
Supporting maths teaching	Systematic review	
	16-18 years International literature	
	Outcomes: Educational attainment (n=3 studies)	
	Authors quality rating: Variable	
Level 2 maths	Maughan et al. 2016	
Embedded in vocational studies	Systematic review	
	16-18 years	
	International literature	
	Outcomes: Educational attainment (n=3 studies)	
	Authors quality rating: Variable	
Level 2 English:	Maughan et al. 2016	
Withdrawing students from	Systematic review	
core lessons for extra catch-up	16-18 years	
	International literature	
	Outcomes: Educational attainment (n=2 studies)	

	Authors quality rating: Weak	
Laval O Franksk		
Level 2 English	Maughan et al. 2016	
Writing interventions	Systematic review	
	16-18 years	
	International literature	
	Outcomes: Educational attainment (n=1 study)	
	Authors quality rating: Robust	
Through holiday schools in Dec, April or July	EEF 2021e	
	Systematic review and meta-analysis	
	3-18 years	
	International literature	
	Outcomes: Additional months progress in learning (n=59 studies)	
	Quality: Low	
Thursday automains of the teaching day.	EEF 2021f	
Through extension of the teaching day		
	Systematic review and meta-analysis	
	3-18 years	
	International literature	
	Outcomes: Additional months progress in learning (n=74 studies)	
	Authors quality rating: Moderate	
Specific summer intervention	Renbarger and Long 2019	
'	Systematic review	
	Low income, high potential students transitioning to FE	
	USA literature	
	Outcomes: Accessing college and non-cognitive support (n=1 study)	
	Authors quality rating: Score of 3 out of 4	
Outside of mainstream teaching (private tuition	reamone quanty ranning. Seems on a same r	
Level 2 maths	Maughan et al. 2016	
<u>Level 2 matris</u>	Systematic review	
	16-18 years	
	International literature	
	Outcomes: Educational attainment (n=2 studies)	
	Authors quality rating: Weak	
Training for students in mate cognition to	anable them to access their own learning and learning pands	
	enable them to assess their own learning and learning needs	
Metacognition and self-regulation	<u>EFF 2021g</u>	
	Systematic review	
	3-18 years	
	International literature	
	Outcomes: Additional months progress in learning (n=246 studies)	
	Authors quality rating: High	
Additional appeared wards		
Additional assessed work	D 1 11 0040	
Early access to college work (Advanced Placement/	Renbarger and Long 2019	
International Baccalaureate and dual credit)	Systematic review	
	Low income, high potential students transitioning to FE	
	,	

	USA literature	
	Outcomes: Student experience and student success (n=5 studies)	
	Authors quality rating: Score of 3 out of 4	
	Authors quality fatting. Score of 3 out of 4	
Other		
Scholarships and Financial aid	Renbarger and Long 2019	
	Systematic review	
	Low income, high potential students transitioning to FE	
	USA literature	
	Outcomes: Accessing college (n=9 studies)	
	Authors quality rating: Score of 3 out of 4	
College information	Renbarger and Long 2019	
	Systematic review	
	Low income, high potential students transitioning to FE	
	USA literature	
	Outcomes: college applications (n=1 study)	
	Authors quality rating: Score of 3 out of 4	
Interventions designed to keep disadvantaged youth	Valentine et al. 2009	
in college once they got there	Systematic review	
	Students who were either at increased risk for college failure (e.g., were identified	
	as high-risk admits) or were on academic probation	
	International literature	
	Outcomes: Short term grades and persistence (n=19 studies)	
	Authors quality rating: Poor	
Non-academic interventions for postsecondary	Schmidt and Park 2021.	
enrolment	Systematic review	
	Post -secondary students in rural and high-poverty areas	
	USA literature	
	Outcomes: Student post-secondary enrolment, academic performance and	
	completion. (n=17 studies)	
	Authors quality rating: NR	
Improved training		Spours et al. 2021
Collaborative learning		Narrative comment
Blended learning.		

<sup>&</sup>lt;sup>a</sup> We did not find any evidence for this area but this does not imply that no evidence exists and focused searches are recommended

Key: FE: further education; MA; meta-analysis; NR: not reported

Intervention has been shown to have a positive effective on the outcome of interest

Intervention has shown to have a positive and a negative effect on the outcome of interest

Intervention has been shown to have no benefit on the outcome of interest

Table 3: Summary of which methods of support are beneficial for improving student wellbeing

Support measure/s	Type of research evidence		
•	Pre-COVID	Post-COVID	
Support from family and friends			
Support from NHS Children and Adolesce			
Screening  Effective referral pathways	SFCA 2021  1 RR – 1 Meta-analysis, 4 opinion articles, 1 study Older teenagers and those in sixth form collegesa International literature Outcomes: Mental health Quality: NR  SFCA 2021  1 RR – 1 opinion article Older teenagers and those in sixth form collegesa International literature Outcomes: Mental health		
Support from trained internal or external s	Quality: NR		
Mindfulness	White 2017a, b  1 RR – 2 SRs  4-15 years International literature Outcomes: Cognitive outcomes and resilience and stress measures Quality: Low to moderate  Halladay et al. 2019 Systematic review Healthy postsecondary students including undergraduate, graduate, college, and health professional studies who have anxiety or depressive symptoms. International literature Outcome: Improved anxiety, depressive symptoms, and reduced stress (n=41 RCTs in 49 studies) Quality: Low to high  SFCA 2021 1 RR – 2 SRs, 1 study Older teenagers and those in sixth form collegesa International literature Outcomes: Anxiety and depression		

	Quality: NR	
0		
Counselling	SFCA 2021	
	1 RR – 1 SR, 1 Meta-analysis, 1 study	
	Older teenagers and in sixth form colleges <sup>a</sup>	
	International literature	
	Outcomes: Mental health	
	Quality: Low to moderate	
Physical activity interventions	SFCA 2021	
1 Tryologi dolivity intorvontione	1 RR - 1 Meta-analysis and	
	1 review of reviews	
	Older teenagers and in sixth form colleges <sup>a</sup>	
	International literature	
	Outcomes: Mental health	
	Quality: Low to NR	
Improving sleep	SFCA 2021	
	1 RR – 1 SR, 1 Meta-analysis	
	Older teenagers and in sixth form colleges <sup>b</sup>	
	International literature	
	Outcomes: Mental health	
	Quality: NR	
0		
Specific social and emotional learning programmes	White 2017a, b	
	1 RR – 1 SR, 3 studies	
	4 -5 years	
	International literature	
	Outcomes: Wellbeing outcomes	
	Quality: NR	
Therapy-based prevention programmes	SFCA 2021	
	1 RR – 10 SR /meta-analyses, 2 studies	
	Older teenagers and in sixth form colleges <sup>a</sup>	
	International literature	
	Outcomes: Anxiety and depression	
	Quality: NR	
Building self-confidence and wellbeing		
Through extra-curricular activities		Association of Colleges
i mough extra-cumcular activities		
		Survey and policy proposal
Mentorship	Lindsay et al. 2016	
	23 studies	
	Youth with disabilities transitioning to PSE or employment	
	International literature	
	Outcomes: Self-determination, empowerment	
	self-efficacy, self-confidence and self-advocacy	
	Quality: Level III (n=3) and level IV evidence (n=20)	
Post-secondary transition interventions <sup>c</sup>	Lindsay et al. 2019	
1 Ost-secondary transition interventions	18 studies	
	TO Studies	

Youth with disabilities transitioning to PSE or employment	
Mainly USA studies	
Outcomes: self-determination, self-confidence, social and vocational self-efficacy,	
autonomy, social support and career exploration	
Quality: Level II (n=4), Level III (n=2), Level IV (n=4) for those with positive	
outcomes	

<sup>&</sup>lt;sup>a</sup> The review included studies looking at younger children and pupils in secondary schools where it answered the review where it is particularly relevant to the review question or when evidence for older teenagers was not available

Key: NR: not reported; RR: rapid review; PSE: post-secondary education; SR: systematic review



Intervention has been shown to have a positive effective on the outcome of interest



Intervention has shown to have a positive and a negative effect on the outcome of interest



Intervention has been shown to have no benefit on the outcome of interest

<sup>&</sup>lt;sup>b</sup> One SR included adults

<sup>&</sup>lt;sup>c</sup> Curriculum-based programmes, online programmes, immersive college residential programmes, mentoring programmes, simulations, self-directed programmes, technology-based programmes, and multi-component programmes. Data synthesis pooled across all programmes.

#### **DISCUSSION**

#### 3.1 Summary of the findings

An initial search of the literature identified a paucity of COVID-19 pandemic specific evidence regarding methods of support for 16-19 year old learners in enabling individuals to progress with their learning or to improve their wellbeing. Only one systematic review protocol (Bangpan et al. 2020) and two rapid reviews (Spours et al. 2021; SFCA 2021) specifically sought to address learning loss and/or mental health issues relating to the pandemic. This rapid review therefore extended the search to learners aged 16-19 years old who have experienced significant gaps in their education for any reason, whether through disadvantage or from regions struck by past disease, conflict, natural disasters etc. as well as any COVID-19 pandemic-specific studies.

However, there were **no systematic reviews of any coordinated catch-up activities or wellbeing initiatives after disruptions due to the COVID-19 pandemic** or any other past crisis from other countries such as Hurricane Katrina or the Christchurch Earthquake in New Zealand. The available evidence was therefore drawn from reviews that focused on raising the attainment of learners facing disadvantage and reducing inequalities in educational outcomes in **pre-pandemic contexts**. Systematic reviews of wellbeing initiatives all drew on the wider literature of school and college-based approaches improving mental health that had been published prior to the COVID-19 pandemic.

Low quality evidence from systematic reviews demonstrated that one-to-one tuition, small group tuition, learner-led peer support sessions, extension of the teaching day, additional teaching during school holidays, specific summer interventions, maths and English literacy in the classroom, level 2 maths embedded in vocational studies, writing interventions for English literacy, scholarships, financial aid, college information have demonstrated **positive impact for 15-16 year olds and post-16 learners** enabling them to progress with their learning (pre COVID-19). No direct systematic review evidence directly investigating methods of support post COVID-19 for learners that enable them to progress with their learning in post-16 settings was found.

Low quality evidence from rapid reviews and systematic reviews demonstrated that screening and effective referral pathway to clinical treatment are beneficial in improving **student wellbeing for older teenagers and those in sixth form colleges** (pre COVID-19). The best quality evidence was for mindfulness (low to high quality) with counselling (low quality), physical activity (low quality) and interventions aiming to improve sleep (low quality) were found to be beneficial in improving student wellbeing across all key-stages (pre COVID-19). No direct systematic review evidence directly investigating methods of support post COVID-19 for improving student wellbeing in post-16 settings was found.

#### 3.2 Limitations of the available evidence

This rapid review was conducted to inform strategies to support 16-19 years old learners who have experienced significant gaps in their education because of the COVID-19 pandemic. Much of the review evidence included, however, relates to learning and

wellbeing support in other circumstances. This, of course, does not mean that interventions applied in other situations may not be relevant, but it could be argued that the pandemic has brought together a unique set of conditions, not only involving disruption to education, but also to environmental, economic, social and emotional areas of young people's and their families' lives. It is not possible to say whether an intervention that was found to be successful in relatively "normal" circumstances will be as successful in these difficult times. All the included organisational reports do address post-pandemic recovery but, again, their authors must rely on limited evidence and the application of knowledge and expertise to produce recommendations to be applied in a set of circumstances that have not been experienced before.

All the included systematic reviews in this rapid review, with the exception of one which scored 'high' (Halladay et al. 2019) were rated 'critically low' (see Section 5.6 for details of rating and implications). According to AMSTAR guidance, critically low means that they "should not be relied on to provide an accurate and comprehensive summary of the available studies" (p. 6, Shea et al. 2017). Some of these studies had obvious flaws; Lindsay et al. (2016) and (2019), and Schmidt and Park (2021) all chose to focus on studies or interventions that showed positive outcomes to the exclusion of others. The other included systematic reviews also rated critically low due to poor reporting and use of methods (Maughan et al. 2016; Renbarger and Long 2019; Valentine et al. 2009; EEF 2021a, b, c, d, e, f, g). Issues with these systematic reviews included lack of transparency regarding quality assessment of the included studies, insufficient search strategies or a single person screening or extracting data. However, it must be acknowledged that these studies have been undertaken by well established organisations and may have been conducted to a higher standard than indicated by their AMSTAR assessment due to the lack of reporting of their methods.

Of the three rapid reviews, one scored six out of six on the RaPeer tool (Spours et al. 2021). The SCFA (2021) scored only one yes (a focused question), and one partial yes (searching for the right type of papers). While Spours et al. (2021) and the SCFA (2021) aimed to address issues brought on by the current COVID-19 pandemic, they were not able to find any evidence about mitigations. Spours et al. (2021) and SCFA (2021) had to draw on prepandemic literature and studies exploring mitigating measures in a younger population. This could potentially **impact on the generalisability of the findings to the current pandemic era, and to post-16 education**. White (2017 a, b) scored five yes, and one no (lack of reporting on critical appraisal) on RAPeer. Moreover, White (2017a, b) was conducted prepandemic which could influence the applicability of its findings in the current setting. The organisational reports were not quality appraised; the value of their recommendations and policy proposals is inferred by the reputation for knowledge and professional expertise attached to the organisations themselves.

#### 3.3 Implications for policy and practice

The findings of this rapid review, subject to the limitations described, can be used to shape support activity for 16-19 years old learners transitioning into, and engaging with full-time education following significant disruptions to their normal education. Thus, the implications for policy and practice are:

- The apparent **paucity of relevant research** activity among this age group suggests both a need for such activity, and that decision makers are currently limited in the published evidence base available to steer their work.
- Although supported by a limited volume of evidence, targeting support activity at learners from the most deprived socio-economic backgrounds has a significant positive impact on their progress.
- Additional subject specific tutoring by trained and qualified teachers on a one-toone or small group basis does have a positive impact on the progress in learning for 3-18 years olds.
- Peer-led learning support and mentoring schemes also have a positive impact on the progress of 3-18 year olds.
- Metacognition and self-regulation activities to help students assess their own needs have benefit for 3–18-year-olds to progress their learning.
- Additional teaching delivered during holiday periods as well as at the end of the school/college working day have been shown to be successful in promoting progress in 3–18-year-olds and students transitioning to higher education.
- In the USA scholarships, financial aid, and college information help highpotential but low income learners progress to higher education. Moreover, interventions aimed at keeping students at higher education institutions have a beneficial impact on college retention.
- Regarding support for wellbeing, help from care services in the form of screening and an effective referral pathway to clinical treatment can benefit older teenagers and for youth in sixth form colleges.
- Interventions, such as **counselling**, **physical activity**, **and sleep improvement** can positively impact on older teenagers' and sixth form students' wellbeing.
- Additionally, mindfulness interventions have shown to be successful in improving
  wellbeing for a wide range of learners including 4–15-year-olds, and youth in sixth
  form colleges. The strongest evidence on the beneficial impact of mindfulness exists
  in postsecondary education.

#### 3.4 Strengths and limitations of this Rapid Review

Limitations of this rapid review mirror the limitations reported by Spours et al. (2021), who described four main factors that limited their research: lack of research into further education measures to mitigate the harms caused by the COVID-19 pandemic, uncertainties caused by the ever-changing pandemic situation, generalisability of existing research to different contexts, insufficient evidence on the feasibility of short and long-term mitigation measures in practice.

Regarding the lack of research in post-16 education, in this rapid review even though eight included systematic reviews were published post pandemic (EEF 2021a, b, c, d, e, f, g; Schmidt and Park 2021) these only include pre-pandemic primary studies. Furthermore, as mentioned above in section 3.2, the two included pandemic-related rapid reviews mainly rely on pre-pandemic studies (Spours et al. 2021; SCFA 2021). The five organisational reports

were published post-pandemic, although they mainly contain recommendations and discussions on potential recovery routes. This **lack of research into the mitigation of harms caused by the pandemic**, and the uncertainties caused by the changing restrictions can lead to **issues with the generalisability of the findings**, and the potential feasibility and effectiveness of interventions in practice.

Another potential limitation of this rapid review is that we did not find any evidence for some interventions including additional tutor support in whole groups or merged groups, teacherled support or independent study, the delivery mode of additional tutoring and interventions from family or friends to improve student wellbeing. Nonetheless, this does not imply that no evidence exists. More focused searches are recommended for future research.

The strength of this review is that a thorough search was undertaken by an information specialist across four COVID databases, five non-COVID databases and the websites of 16 organisations were searched. Although this was a rapid review in which several of the systematic review processes could have been streamlined, we did not limit the dates of the searches, and it should be noted that data screening, data extraction and critical appraisal of each study were undertaken by different reviewers and then independently checked for accuracy and consistency by the same second reviewer.

The synthesis identified overall that there was reasonable agreement among all the included literature, which may be considered to imply some degree of reliability. There were no contradictory findings, and the recommendations of the organisational reports were concordant with the findings of the reviews.

#### **REFERENCES**

Association of Colleges. (2021a). College catch-up funding and remote education. AOC Survey and Policy proposal April 2021. AoC, London. [Accessed 23/08/2021]. Available from: <a href="https://www.aoc.co.uk/sites/default/files/Mental%20Health%20in%20Colleges%20-%20Report.pdfhttps://www.aoc.co.uk/sites/default/files/Report%20-%20College%20Catch-up%20Funding%20and%20Remote%20Education%20-%20April%202021.pdf">https://www.aoc.co.uk/sites/default/files/Report%20-%20College%20Catch-up%20Funding%20and%20Remote%20Education%20-%20April%202021.pdf</a>

Association of Colleges. (2021b). Mental health and colleges. AoC, London. [Accessed 23/08/2021]. Available from:

https://www.aoc.co.uk/sites/default/files/Mental%20Health%20in%20Colleges%20-%20Report.pdf

Bangpan M, Kulophas D, Shi Y, D'Souza P, Dickson K, Oliver S and Ehren M. (2020). Understanding the impact of policies/interventions in preparing for, responding to, and recovering from the COVID-19 and other public health emergencies on quality and equity in education. PROSPERO 2020. CRD42020196650. Available from https://www.crd.vork.ac.uk/prospero/display\_record.php?ID=CRD42020196650

Betthaeuser BA, Bach-Mortensen AM and Engzell P. (2021) Learning loss during the COVID-19 pandemic: a living systematic review and meta-analysis. PROSPERO 2021 CRD42021249944 [Accessed 27/08/2021]. Available from: https://www.crd.vork.ac.uk/prospero/display\_record.php?ID=CRD42021249944

Chaabane S, Doraiswamy S, Chaabna K, et al. (2021) .The impact of COVID-19 school closure on child and adolescent health: A rapid systematic review. Children (Basel) 8(5). DOI: 10.3390/children8050415

Crenna-Jennings W, Perera N and Sibieta L. (2021). Education recovery and resilience in England. Phase one report. Education Policy Institute, London. [Accessed 23/08/2021]. Available from: https://epi.org.uk/wp-content/uploads/2021/05/Education-Recovery EPI.pdf

Darmody M, Smyth E and Russell H. (2021). Impacts of the COVID-19 control measures on widening educational inequalities. YOUNG 29(4): 366–80. https://doi.org/10.1177/11033088211027412

Drane CF, Vernon L and O'Shea S. (2020). Vulnerable learners in the age of COVID-19: A scoping review. *Aust Educ Res*: 1–20. DOI: 10.1007/s13384-020-00409-5.

Education Endowment Foundation. (2021a). One-to-One Tuition. [Accessed 28/09/2021]. Available from: <a href="https://educationendowmentfoundation.org.uk/education-evidence/teaching-learning-toolkit/one-to-one-tuition">https://educationendowmentfoundation.org.uk/education-evidence/teaching-learning-toolkit/one-to-one-tuition</a>

Education Endowment Foundation. (2021b). Small Group Tuition. [Accessed 28/09/2021]. Available from: <a href="https://educationendowmentfoundation.org.uk/evidence-summaries/teaching-learning-toolkit/small-group-tuition/">https://educationendowmentfoundation.org.uk/evidence-summaries/teaching-learning-toolkit/small-group-tuition/</a>

Education Endowment Foundation. (2021c). Peer Tutoring. [Accessed 28/09/2021]. Available from: <a href="https://educationendowmentfoundation.org.uk/evidence-summaries/teaching-learning-toolkit/peer-tutoring/">https://educationendowmentfoundation.org.uk/evidence-summaries/teaching-learning-toolkit/peer-tutoring/</a>

Education Endowment Foundation. (2021d). Mentoring. [Accessed 28/09/2021]. Available from: <a href="https://educationendowmentfoundation.org.uk/evidence-summaries/teaching-learning-toolkit/mentoring/">https://educationendowmentfoundation.org.uk/evidence-summaries/teaching-learning-toolkit/mentoring/</a>

Education Endowment Foundation. (2021e). Summer Schools. [Accessed 28/09/2021]. Available from: <a href="https://educationendowmentfoundation.org.uk/evidence-summaries/teaching-learning-toolkit/summer-schools/technical-appendix/">https://educationendowmentfoundation.org.uk/evidence-summaries/teaching-learning-toolkit/summer-schools/technical-appendix/</a>

Education Endowment Foundation. (2021f). Extending school time. [Accessed 28/09/2021]. Available from: <a href="https://educationendowmentfoundation.org.uk/education-evidence/teaching-learning-toolkit/extending-school-time">https://educationendowmentfoundation.org.uk/education-evidence/teaching-learning-toolkit/extending-school-time</a>

Education Endowment Foundation. (2021g). Metacognition and self-regulation [Accessed 28/09/2021]. Available from: <a href="https://educationendowmentfoundation.org.uk/education-evidence/teaching-learning-toolkit/metacognition-and-self-regulation">https://educationendowmentfoundation.org.uk/education-evidence/teaching-learning-toolkit/metacognition-and-self-regulation</a>

Halladay J E, Dawdy J L, McNamara I F, Chen A J, Vitoroulis I, McInnes N, and Munn C. (2019) Mindfulness for the Mental Health and Wellbeing of Post-Secondary Students: A Systematic Review and Meta-Analysis. Mindfulness, 10, 397–414. https://doi.org/10.1007/s12671-018-0979-z

Holt-White E and Cullinane C. (2021). A levels and University access 2021. July 2021. The Sutton Trust. London. [Accessed 23/08/2021]. Available from: <a href="https://www.suttontrust.com/wp-content/uploads/2021/07/A-Level-and-University-Access-2021.pdf">https://www.suttontrust.com/wp-content/uploads/2021/07/A-Level-and-University-Access-2021.pdf</a>

Hunter J. 2020. Rapid Peer Reviewer Checklist for Rapid Reviews – RAPeer. Advances in Integrative Medicine 7:4, 183-6. <a href="https://doi.org/10.1016/j.aimed.2020.07.003">https://doi.org/10.1016/j.aimed.2020.07.003</a>.

Lindsay S, Hartman LR and Felin M. (2016). A systematic review of mentorship programs to facilitate transition to post-secondary education and employment for youth and young adults with disabilities, Disability and Rehabilitation, 38:14, 1329-1349. DOI: 10.3109/09638288.2015.1092174

Lindsay S, Lamptey D, Cagliostro E, Srikanthan D, Mortaji N and Karon L. (2019). A systematic review of post-secondary transition interventions for youth with disabilities, Disability and Rehabilitation, 41:21, 2492-2505. DOI: 10.1080/09638288.2018.1470260

Maughan S, Smith J, Mitchell T, Horrocks N and Taylor A. (2016). Improving Level 2 English and maths outcomes for 16-18 year olds Literature review. Education Endowment Foundation, London.

https://educationendowmentfoundation.org.uk/public/files/Presentations/Publications/16-18 Literature Review.pdf

Moss G, Bradbury A, Harmey S, France R, Vigurs C. (2021) Mitigating impacts of the COVID-67 pandemic on primary and lower secondary children during school closures: A rapid evidence review. London: EPPI Centre, UCL Social Research Institute, University College London.

https://eppi.ioe.ac.uk/cms/LinkClick.aspx?fileticket=Yxnj8IdsTIU=&tabid=3842&portalid=0

Page MJ, McKenzie JE, Bossuyt PM, Boutron I, Hoffmann TC, Mulrow CD, et al. (2021). The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. BMJ 372:n71. doi: 10.1136/bmj.n71

Patrinos H and Donnelly R. (2021). Learning loss during COVID-19: An early systematic review. Pre-print. [Accessed 27/08/2021]. Available from: https://www.researchsquare.com/article/rs-518655/v1

Renbarger R and Long K. (2019). Interventions for postsecondary success for low-income and high-potential students: A systematic review. Journal of Advanced Academics. 30(2): 178-202. https://journals.sagepub.com/doi/10.1177/1932202X19828744

Schmidt RA and Park CJ. (2021). Nonacademic interventions for postsecondary enrollment and success in rural high-poverty schools: A systematic evidence review. Arlington, VA: SRI International, Regional Educational Laboratory Appalachia.

https://ies.ed.gov/ncee/edlabs/regions/appalachia/resources/pdfs/Nonacademic-interventions-for-postsecondary-enrollment-and-success acc.pdf

Shea BJ, Reeves BC, Wells G, Thuku M, Hamel C, Moran J, Moher D, Tugwell P, Welch V, Kristjansson E, Henry DA. (2017). AMSTAR 2: a critical appraisal tool for systematic reviews that include randomised or non-randomised studies of healthcare interventions, or both. BMJ. 2017;358:j4008. https://www.bmj.com/content/358/bmj.j4008

Sixth Form Colleges Association. (2021). Supporting students' mental health after the lockdown. A literature review for the Sixth Form Colleges Association. SFCA, London. <a href="https://sfcawebsite.s3.amazonaws.com/uploads/document/SFCA-Mental-health-in-colleges-evidence-review-Updated.pdf?t=1615373296">https://sfcawebsite.s3.amazonaws.com/uploads/document/SFCA-Mental-health-in-colleges-evidence-review-Updated.pdf?t=1615373296</a>

Spours K, Grainger P, Vigurs C, France R. (2021) Mitigating impacts of the COVID-19 pandemic on the further education sector: A rapid evidence review. London: EPPI Centre, UCL Social Research Institute, University College London.

https://eppi.ioe.ac.uk/cms/Portals/0/Lot%204%20-%20FE%20-%20090921\_LO.pdf?ver=2021-09-09-114634-593

The Sutton Trust. (2021). Fairness first: Social mobility, COVID and education recovery. May 20201. The Sutton Trust, London. [Accessed 23/08/2021]. Available from: <a href="https://www.suttontrust.com/wp-content/uploads/2021/05/Fairness-First-Social-Mobility-COVID-Education-Recovery.pdf">https://www.suttontrust.com/wp-content/uploads/2021/05/Fairness-First-Social-Mobility-COVID-Education-Recovery.pdf</a>

Valentine JC, Hirschy AS, Bremer CD, Walter N, Marisa C and Banister A. (2009). Systematic reviews of research: postsecondary transitions. identifying effective models and practices. National Research Center for Career and Technical Education. University of Louisville, College of Education and Human Development. Louisville, KY. <a href="https://files.eric.ed.gov/fulltext/ED507727.pdf">https://files.eric.ed.gov/fulltext/ED507727.pdf</a>

Viner R, Russell S, Saulle R, et al. (2021) Impacts of school closures on physical and mental health of children and young people: a systematic review. <a href="https://doi.org/10.1101/2021.02.10.21251526">https://doi.org/10.1101/2021.02.10.21251526</a>

White J. (2017a). Evidence summary: Reducing the attainment gap – the role of health and wellbeing interventions in schools. Edinburgh: NHS Health Scotland; 2017. <a href="http://www.healthscotland.scot/media/1735/evidence-summary-reducing-the-attainment-gap-the-role-of-health-and-wellbeing-interventions-in-schools.pdf">http://www.healthscotland.scot/media/1735/evidence-summary-reducing-the-attainment-gap-the-role-of-health-and-wellbeing-interventions-in-schools.pdf</a>

White J. (2017b). Rapid Evidence Review: Reducing the attainment gap – the role of health and wellbeing interventions in schools. Edinburgh: NHS Health Scotland; 2017. <a href="http://www.healthscotland.scot/media/1694/reducing-the-attainment-gap-the-role-of-health-and-wellbeing-interventions-in-schools.pdf">http://www.healthscotland.scot/media/1694/reducing-the-attainment-gap-the-role-of-health-and-wellbeing-interventions-in-schools.pdf</a>

#### **RAPID REVIEW METHODS**

#### 5.1 Eligibility criteria

We included any quantitative systematic reviews, rapid reviews, evidence syntheses that explored strategies to support learning and wellbeing among 16-19 year old learners who have experienced significant gaps in their education as a result of the COVID-19 pandemic. Organisational reports that informed the topic were also included.

	Inclusion criteria	Exclusion criteria
Participants	16-19 years	
Settings	Schools and colleges	Higher education
Intervention / exposure	Any	
Comparison	Any	
Outcomes	Related to learners being able to successfully progress with learning and student wellbeing	
Study design	Quantitative systematic reviews, rapid reviews, evidence syntheses	
Countries	Any	
Language of publication	English	
Publication date	No date restrictions	
	All literature relating to the topic both before, during and after the COVID-19 pandemic	
Publication type	Published and preprint	

#### 5.2 Literature search

An initial search of SCOPUS was undertaken ((post 16 education OR post secondary OR further education) AND (learning loss OR progress OR catch up OR wellbeing) AND (COVID\* or coronavirus)) followed by analysis of the text words contained in the title and abstract, and of the index terms used to describe the article. This informed the development of a search strategy which was then tailored for each information source (see additional information). Searches were conducted across nine databases for English language citations and there were no data restrictions. The databases included SCOPUS, Web of Science, ASSIA, ERIC and BEI. The COVID specific databases VA-ESP, L\*OVE COVID19, Collabovid and LitCOVID were only searched to address question one as a rapid review was retrieved from searching the organisational websites that addressed question two in relation to COVID. The reference lists of all included studies retrieved were screened for additional studies and forward citation tracking performed using Web of Science. Additionally, 18 organisational websites were searched for publications relating to the topic area (see additional information).

#### 5.3 Study selection process

All citations retrieved from the database searches were imported or entered manually into EndNote<sup>TM</sup> (Thomson Reuters, CA, USA) and duplicates removed. Irrelevant citations were removed by searching for keywords within the title using the search feature within the Endnote software. The project team agreed which keywords to use to identify papers which do not meet the inclusion criteria. At the end of this process the citations that remained were exported as an XML file and then imported to Covidence<sup>TM</sup>. Two reviewers dual screened 20% of the citations using the information provided in the title and abstract, using the software package Covidence<sup>TM</sup>, and resolved all conflicts. The remaining citations were then screened by a single reviewer, screening with categories of "include" and "exclude". To streamline the review process, the project team decided against a third category of 'unsure' and instead, where there was uncertainty about a citation, it was categorised as 'include' to enable a decision to be made based on the full text.

For citations that appeared to meet the inclusion criteria, or in cases in which a definite decision could not be made based on the title and/or abstract alone, the full text of all citations was retrieved.

The full texts were screened for inclusion by one reviewer using a purposely designed form which was piloted using approximately 10 manuscripts. One reviewer then screened full text manuscripts, and another reviewer checked all excluded manuscripts.

#### 5.4 Data extraction

All demographic data were extracted directly into tables by one reviewer and checked by another. The data extracted included specific details about the interventions, populations, outcomes, and findings of significance to the review question and specific objectives. A template for the data extraction process was piloted on manuscripts for each of the included study designs before use. All outcome data were extracted directly into tables by one reviewer and checked by another.

#### 5.6 Quality appraisal

The Assessing the Methodological Quality of Systematic Reviews (AMSTAR-2) tool (Shea et al. 2017) was used to assess the methodological quality of the included systematic reviews. The AMSTAR-2 is a rating system that classify all reviews' quality level into critically low, low, moderate and high. (1) high—No, or one non-critical weakness: the systematic review provides an accurate and comprehensive summary of the results; (2) moderate—more than one non-critical weakness but no critical flaws: the systematic review provides an accurate summary of the results; (3) low—one critical flaw, with or without non-critical weaknesses: the systematic review may not provide an accurate and comprehensive summary of the results; (4) critically low—more than one critical flaw, with or with-out non-critical weaknesses: the review should not be relied on to provide an accurate and comprehensive summary of the results. The quality of each eligible systematic review was conducted by two reviewers and any disagreements resolved by a third person.

The Rapid Peer Reviewer Checklist for Rapid Reviews (RaPeer) tool (Hunter 2020) was used to assess the methodological quality of the included rapid reviews. Originally developed for journal reviewers to make rapid decisions, RAPeer is a 15-item checklist that can be divided into two parts. The first part is a 9-item reporting checklist, while the second part is a 6-item quality appraisal tool. This 6-item quality appraisal section was used in this rapid review. Answers to the questions can be yes, partial yes, or no, depending on the information available on methodology in the included rapid reviews. The quality of each eligible rapid review conducted by two reviewers and any disagreements resolved by a third person.

#### 5.7 Data presentation and summary

The data were presented as two interactive summary tables with hyperlinks to the main data extraction table. The framework for this table was provided by the stakeholders. This was accompanied by a narrative summary.

#### 5.9 Assessment of body of evidence

Due to time constraints this rapid review only presents the original review authors own interpretation of the quality of evidence.

#### **EVIDENCE**

#### 6.1 Study selection flow chart

The flow of citations through each stage of the review process is displayed in a PRISMA flowchart (Page et al. 2021), see Figure 1.

#### 6.2 Information available on request

- 1. Full search strategies
- 2. Critical appraisal scores
- 3. Excluded studies

#### ADDITIONAL INFORMATION

#### 7.1 Conflicts of interest

The authors declare they have no conflicts of interest to report.

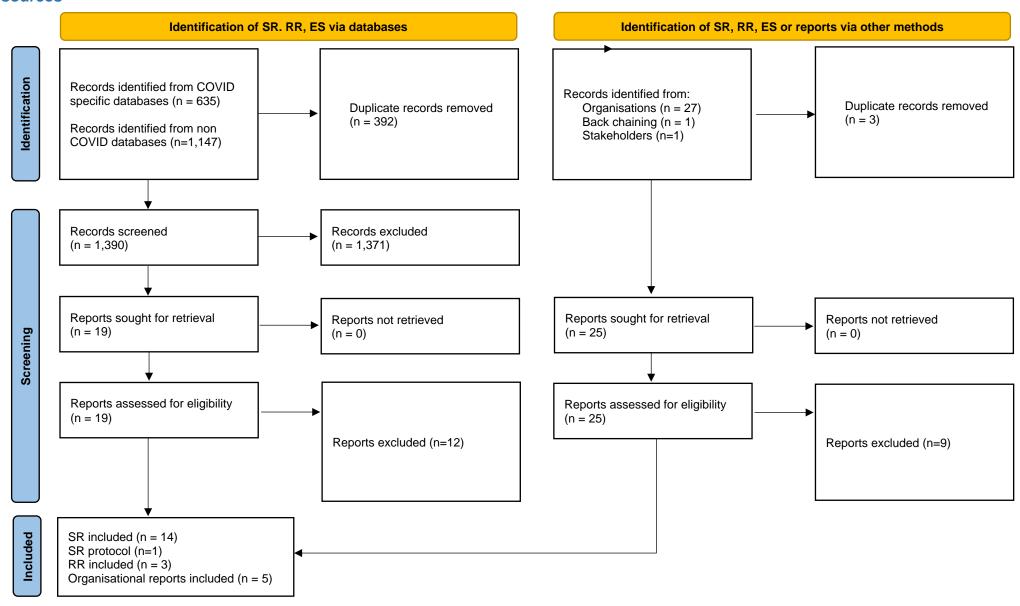
#### 7.2 Acknowledgements

The authors would like to thank Sion Peters-Flynn for his contribution in guiding the focus of the review and interpretation of findings. Also to Zakhyia Begum, Lian Baker and Jennifer Hampton for their contributions in stakeholder meetings.

#### 7.3 Disclaimer

The views expressed in this publication are those of the authors, not necessarily Health and Care Research Wales. The WCEC and authors of this work declare that they have no conflict of interest.

Figure 1: PRISMA 2020 flow diagram for new systematic reviews and rapid reviews which included searches of databases and other sources



#### ABOUT THE WALES COVID-19 EVIDENCE CENTRE (WCEC)

The WCEC integrates with worldwide efforts to synthesise and mobilise knowledge from research.

We operate with a core team as part of <u>Health and Care Research Wales</u>, are hosted in the <u>Wales Centre for Primary and Emergency Care Research (PRIME)</u>, and are led by Professor Adrian Edwards of Cardiff University.

The core team of the centre works closely with collaborating partners in <a href="Health Technology Wales">Health Technology Wales</a>, <a href="Wales">Wales</a> Centre for Evidence-Based Care</a>, <a href="Specialist Unit for Review">Specialist Unit for Review</a></a>
<a href="Evidence centre">Evidence centre</a>, <a href="SAIL Databank">SAIL Databank</a>, <a href="Bangor Institute for Health & Medical Research/Health">Bangor Institute for Health & Medical Research/Health</a> <a href="And Care Economics Cymru">And Care Economics Cymru</a>, and the <a href="Public Health Wales Observatory">Public Health Wales Observatory</a>.

Together we aim to provide around 50 reviews per year, answering the priority questions for policy and practice in Wales as we meet the demands of the pandemic and its impacts.

#### Director:

Professor Adrian Edwards

#### **Contact Email:**

WC19EC@cardiff.ac.uk

#### Website:

https://healthandcareresearchwales.org/about-research-community/wales-COVID-19-evidence-centre

#### **APPENDIX**

## Summary table of characteristics of systematic reviews and rapid reviews

Citation Citation retrieval source	Review type and methodology	Objective Outcomes	Key features of interventions Findings
Citation retrieval source		Quality appraisal rating	
Post 16 education pre COVID			
Bangpan et al. 2020 Understanding the impact of policies/interventions in preparing for, responding to, and recovering from the COVID-19 and other public health emergencies on quality and equity in education.  https://www.crd.york.ac.uk/prospero/display_record.php?ID=CRD42020196650  Retrieved from COVID specific database	Systematic review and narrative synthesis  Protocol registered on PROSPERO database  Population Primary and secondary school students, teachers, and school management staff/authorities	What is the impact of COVID-19 on education systems?     What evidence is there, on educational policies and interventions relating to COVID-19 and other public health emergencies, aiming to improve quality and inclusiveness in education?     What are the effects such educational policies and interventions?  Outcomes Learning, access to education, equality, and education systems during the COVID-19 pandemic, and other public health emergencies	Authors contacted output expected December 2021
Lindsay et al. 2016 A systematic review of mentorship programs to facilitate transition to post-secondary education and employment for youth and young adults with disabilities <a href="https://pubmed.ncbi.nlm.nih.gov/26497325/">https://pubmed.ncbi.nlm.nih.gov/26497325/</a> Retrieved from SCOPUS	Systematic review and narrative synthesis  22 studies investigated several types of intervention including: School-based, community-based, work- based, family employment awareness training, online, multicomponent, and other mentorship interventions	Objectives To identify the effective components of mentorship programmes in facilitating the transition to post-secondary education (PSE) or employment for youth and young adults with disabilities, and describe participants' experiences  Outcome Self-determination Empowerment	For seven mentorship interventions, at least one significant improvement was reported in school- or work-related outcome (self-determination (large effect), empowerment (medium effect), self-efficacy (large effect), or self-confidence or self-advocacy)  Facilitators to implementing mentorship programs for youth with disabilities.

	Population Youth and young adults with learning disabilities	Self-efficacy Self-confidence Self-advocacy  Quality appraisal rating Critically low Focused on a sub set of studies that showed positive outcomes	<ul> <li>Having routine contact either online or face-to-face</li> <li>Structured with trained mentors as well as paid staff</li> <li>Delivered in group-based or mixed formats, and longer in duration (46 months)</li> <li>Mentors acted as role models, offered advice, and provided mentees with social and emotional support</li> </ul>
Lindsay et al. 2019 A systematic review of post-secondary transition interventions for youth with disabilities <a href="https://pubmed.ncbi.nlm.nih.gov/29726294/">https://pubmed.ncbi.nlm.nih.gov/29726294/</a> Retrieved from SCOPUS	Systematic review and narrative synthesis  18 studies investigated several types of intervention including: Curriculum-based programmes, online programmes, immersive college residential programmes, mentoring programmes, simulations, self-directed programmes, technology-based programmes, and multi-component programmes  Population Youth and young adults with learning disabilities	Objectives To understand the best practices and components of post-secondary transition programmes for youth with disabilities  Outcomes College enrolment, self-determination, self-confidence, social and vocational self-efficacy, autonomy, social support, career exploration, and transition skills  Quality appraisal rating Critically low Reported that studies were positive for at least one positive outcome and ignored the other outcomes	Although the outcomes of the post-secondary transition programmes varied across the studies, all of them reported an improvement in at least one of the following: college enrolment, self-determination, self-confidence, social and vocational self-efficacy, autonomy, social support, career exploration, and transition skills
Renbarger and Long 2019 Interventions for postsecondary success for low-income and high-potential students <a href="https://journals.saqepub.com/doi/10.1177/1932">https://journals.saqepub.com/doi/10.1177/1932</a> 202X19828744  Retrieved from: SCOPUS	Systematic review Thematic analysis used to synthesise findings narratively. No formal quality appraisal but included studies had to be published in peer-reviewed journals  Sixteen studies of programmes that served a gifted population in the USA, and that evaluated an intervention related to college access were included	Objectives     What are the interventions that support low-income, gifted students' college success?     What are the outcomes associated with these interventions?      Outcomes     Accessing college, persisting and attaining degrees     Non cognitive support      Quality appraisal rating	Findings mixed, with evidence of Native American and African American students benefiting less than White students  Summer intervention (1 study): Summer program for gifted and talented students. Project Promise serves students from fourth grade to 12th grade for up to 3 weeks on a local college campus. Findings reported were high rates of college enrolment, students felt better prepared and reported better peer, mentor and parental support

Schmidt and Park 2021	Types of intervention were: a summer intervention, advanced coursework, financial aid, college information, and year-round support  Population Low-income and high-potential postsecondary students	Objectives	Advanced coursework (5 Studies): Early access to college work (Advanced Placement [AP]/ International Baccalaureate [IB] and dual credit), Findings were mixed depending on the type of course but did not consistently improve either the student experience or students' success  College information (1 study): This intervention included information about applying to colleges, calculating the cost of colleges, and utilizing fee waivers Findings showed that students submitted more college applications to more selective institutions  Financial aid (4 studies): These programs gave aid to students but seemed to provide little other support to low-income students Findings showed improved choice and access to college but did note always improve success  Year-round support (1 study): A particular group of articles analysed the GMS program. The GMS program is a grant program that provides college tuition for up to 10 years for qualifying members. Findings showed that all students worked better at high school, 90% pursued higher education, benefited from peer support and personal development.  Eight (five interventions) of the 17
Non-academic interventions for postsecondary enrolment and success in rural high-poverty schools: A systematic evidence review <a href="https://ies.ed.gov/ncee/edlabs/regions/appalachia/resources/pdfs/Nonacademic-">https://ies.ed.gov/ncee/edlabs/regions/appalachia/resources/pdfs/Nonacademic-</a>	Systematic review and narrative synthesis  17 Studies (across nine interventions)	What is the evidence for positive effects of non-academic interventions on student post-secondary enrolment, academic performance and completion?	studies found statistically significant positive effects of non-academic interventions on postsecondary outcomes. Only reported on these eight

#### <u>interventions-for-postsecondary-enrollment-</u> and-success acc.pdf

#### Retrieved from ERIC

- Free application for Federal Student Aid (FAFSA)
- Facilitating Long-term Improvements in Graduation and Higher Education for Tomorrow (FLIGHT)
- College Counselling interventions
- Summer Counselling interventions
- Summer Bridge interventions

#### <u>Population</u>

5 to 19 years from rural and high poverty populations

- What is the evidence for positive effects of non-academic interventions on student postsecondary outcomes for rural and high-poverty populations?
- What additional research is needed to address the evidence gap

#### Outcomes

Student post-secondary enrolment, academic performance and completion

#### Quality appraisal rating

Critically low

Only reported on sub set of studies that showed positive outcomes

FAFSA interventions provide students and families with information on the importance of completing the FAFSA to obtain college aid, send reminders on key financial aid deadlines, and may assist low-income families in completing the application. Two studies Two studies demonstrated positive effects on post-secondary enrolment and persistence. p. 10

FLIGHT is a school-based program that provides mentoring and other supports to middle and high school students to improve their chances of enrolling and succeeding in college. p.11

College Counselling interventions provide high school seniors with mentoring and assistance with completing college applications. p. 11

Summer counselling broadly refers to programs aimed at ensuring that high school graduates successfully matriculate in college in the fall after high school graduation. p. 11

Summer Bridge interventions bridge programs aim to support students' postsecondary transition by connecting students to social resources that can help them succeed in college. p. 12

FLIGHT, college counselling, summer counselling, and summer bridge programs showed positive effects on lone outcome each: Post-secondary enrolment for FLIGHT and College Counselling, persistence for Summer Counselling, and completion for Summer Bridge programmes)

The extent of FAFSA interventions on post-secondary enrolment was medium

Valentine et al. 2009 Systematic reviews of research: postsecondary transitions. identifying effective models and practices https://files.eric.ed.gov/fulltext/ED507727.pdf  Retrieved from ERIC	Systematic review and meta- analysis  The search strategy aimed to find studies regarding transition programs designed to help disadvantaged youth move into and through to post-secondary education:  - High school to community college or technical college - High school to 4-year college/university - Completion of community or technical college - Completion of 4-year college/university - Pre-college education to community technical college - High school to related employment - College/university to related employment - Community or technical college to 4-year college/university  19 studies which involved interventions designed to keep students in college once they got there and 18 were included in meta-analysis  Population All studies included students who were either at increased risk for college failure (e.g., were identified as high-risk admits) or were on academic probation	Objectives  What models or programmes of transition exist?  How is successful transition defined?  How are transition models and programmes evaluated?  What is the impact of transition programmes, specifically those that aim to facilitate transition from one educational system to another, to programme completion, or to specific, career-related employment for disadvantaged youth?  Outcomes Short term grades and persistence  Quality appraisal rating Critically low	to large; the extent of evidence for each of the other findings was small  Definition Transition defined as individual movement from pre-college educational systems into and through the first two years of postsecondary education or into related employment  Due to poor reporting of the primary studies, the authors were unable to assess studies on most quality dimensions and it was not possible to determine how or why programs might be effective  Interventions ranged from relatively comprehensive interventions (e.g., a seminar designed to facilitate college adjustment, coupled with limitations on the number of credit hours students could enrol in, smaller classes, and tutoring) to those that were much smaller in scale, such as adding a journaling component to an English composition class. Most interventions fell between these two poles, with a freshman orientation/adjustment seminar being the strategy most often adopted (either alone or in conjunction with other activities such as tutoring)  The data did suggest that comprehensive interventions might affect short term grades and persistence but there was little information as to which elements in the comprehensive interventions might be more effective
Spours et al. 2021	Rapid review	Objectives: Harms	Themes identified:

Mitigating impacts of the COVID19 pandemic on the further education sector: a rapid evidence review. UCL Social Research Institute

http://eppi.ioe.ac.uk/cms/Portals/0/Lot%204%2 0-%20FE%20-%20090921 LO.pdf?ver=2021-09-09-114634-593

Stakeholders

#### Population

Further education sector: UK Students and Staff

"Evidence from systematic reviews has been limited but with significant mitigation messages- given the specificities of the FE Sector in the UK and the novelty of the crisis evidence from systematic reviews has not been able to cast light on COVID harms but has provided possible transferable mitigations focused on targeted investment in vulnerable groups; joined-up and collaborative interventions leading to personalised support packages." p.43

"A novel crisis in an underresearched sector - the density of grey literature and the paucity of peer-reviewed studies- the vast majority of the extant evidence underpinning COVID-related research in the FE Sector comes from 'grey literature' (e.g. non-peer reviewed surveys, sector-based statistics; research by sector representative organisations; perceptions of key actors and policy proposals of an array of civil society organisations)" p. 43

"The challenge with grey literatures is the degree of trustworthiness. Here the picture is uneven. The findings concerning vocational disruption are firmly rooted in national and sector-based statistics whereas findings regarding mental health and wellbeing are based on surveys by sector organisations or

What is the nature and extent of the UK FE Sector experience of harms reported in research on impacts of COVID 19?

Sub questions:

- What short-term harms have been reported by those involved in the Sector? To what degree are the reported harms evidence-based or perception-based?
- In what ways do the specific features of the Sector inform particular harms (e.g. in relation to its social composition, transitions to work; assessment and qualification and transitions to higher study)?
- What relationship can be found between direct/indirect and short/longterm harms (e.g., connections between pre-existing social/educational divisions and new divisions)?

Objectives: Mitigations What systematic review evidence is there to mitigate these UK experienced harms in the research literature and those identified by those involved in the Sector?

Sub questions

- What counter measures are being reported by those involved in the Sector in relation to

short-term harms and long-term harms?
- How far can these measures be classified as emergent or established by research evidence?

Quality appraisal rating 6-items all answered Yes

Theme 1. Vocational disruption for young people, economic participation, and apprenticeships.

Theme 2. The mental health and wellbeing of young people.

Theme 3. Changes to modes of learning, assessment, and qualifications.

Theme 4. Inequalities disadvantaged young people, and NEETs.

Theme 5. Problematical transitions and access to higher education and post-16 systems.

Theme 6. A responsive but 'stressed' FE Sector.

#### Theme 2:

Harms: Based off surveys of individuals and surveys of institutions which have not been peer reviewed. The mental health and wellbeing of young people has suffered with particular concerns about personal futures: job opportunities, nature of society/economy during recovery. p. 19-21

#### Mitigations:

Link to AoC and SCFA reports pulling out their recommendations. p.33

#### Theme 3:

Harms: Based on evidence from case studies and more college-based research is required. Little is known about the impact of remote learning on class gaps. The presumption is that these will deepen, but issues of learner engagement require more research. p.21-22

Mitigations: Evidence from one systematic review suggested improved training, collaborative learning & more blended learning are required to

	the perceptions of sector leaders and young people. These are not to be discounted (concerns about the mental wellbeing of young people come from a variety of sources), but there may be methodological shortcomings of these kind of sources that have to be taken into consideration when assessing the strength and reliability of the evidence".p.43
Halladay et al. 2019 Mindfulness for the Mental Health and Wellbeing of Post-Secondary Students: A Systematic Review and Meta-Analysis	Systematic review and meta- analysis  49 studies were included in the
https://link.springer.com/article/10.1007/s1267	systematic review, out of which 41

support catch-up. The degree to which losses/disruption to vocational learning are remedied will depend on the scale of the economic recovery. Theme 4:

**Harms**: Evidence from systematic reviews and primary research suggests that disrupted/losses to learning have magnified class gaps and this is supported by a broadly held perception in the sector. p.23-25

Mitigations: There were no systematic review evidence on mitigating the increased educational inequalities directly relevant to the FE Sector

1-018-0979-z

Retrieved from PubMed

studies were RCTs.

#### Intervention

Mindfulness-based interventions (MBI) at least two weeks in duration.

No restriction to traditional mindfulness-based stress reduction (MBSR) or mindfulness-based cognitive therapy (MBCT). Authors ensured that interventions in the included papers contained the core components of mindfulness:

- Grounding in the present moment
- Being open and accepting experiences

### Objectives

Primary objective is to address limitations of previous reviews and synthesize the current literature regarding the effectiveness of MBIs for all post-secondary students on:

- Anxiety
- Depression

Secondary objective was to explore if MBIs are effect at:

- Reducing perceived stress
- Improving sleep parameters
- Reducing substance use
- Improving emotion regulation in post-secondary students

#### Outcomes

Primary outcomes:

Anxiety and depressive symptoms excluding diagnosed anxiety disorder or depression

Secondary outcomes: Perceived stress, sleep parameters, substance use frequency, emotion regulation.

## Findings:

The results of this meta-analysis indicate that, in postsecondary students, MBIs appear to produce small to moderate reductions in symptoms of depression, anxiety, and perceived stress post-intervention when compared to passive control.

Results were similar for shorter versus longer interventions.

Studies using MBCT appeared to produce larger effect sizes for depression and anxiety symptoms when comparing to passive control.

MBIs of at least 2 weeks in duration appear to be a better alternative than no intervention for students, particularly for reducing symptoms of depression, anxiety, and perceived stress.

When comparing to no intervention, traditional MBCT appears to be the most effective for symptoms of depression and anxiety compared

No restriction of methods of delivery (online, in person, guided, unguided), length, or frequency. Combined approaches were only used if controls got the same cointervention

#### Population

Postsecondary students, including undergraduates, graduates, college and health professional students. Population only included healthy students who internalise symptoms

Students with diagnosed conditions, such as ADHD, or developmental disabilities were excluded from this review

### Quality appraisal rating

High (only one non-critical weakness Item 10)

to other MBIs.

It is important to note that this review found no significant difference between shorter and longer interventions (apart from MBCT), and therefore shorter interventions may provide feasible, brief, and effective strategies for reducing student anxiety, depression, and perceived stress.

These findings suggest that MBIs may be an appropriate intervention for students who are waiting for counselling services for depression, anxiety, and stress. There is insufficient evidence at this time to evaluate the effectiveness of MBIs in students presenting to health and counselling services for sleep difficulties, substance use problems, or emotion dysregulation or to make recommendations on mindfulness compared to other psychotherapeutic interventions in reducing common mental health concerns among students

Key: ADHD: Attention hyper deficit disorder; AoC: Association of Colleges; FE: further education; SFCA: Sixth Form College Association; MBI: mindfulness-based interventions; MBSR: mindfulness-based stress reduction; MBCT: mindfulness-based cognitive therapy

## Summary table of characteristics of systematic reviews produced by educational organisations

Citation	Review type and	Objective	Key features of interventions
	methodology		Findings
Citation retrieval source	Population	Outcomes	
Education Endowment Foundation 2021a	Systematic review and meta-	<u>Objectives</u>	Definition: a teacher, teaching assistant
One to one tuition	analysis	Provides evidence on the cost, evidence	or other adult giving a pupil intensive
(Teaching and Learning Toolkit)		strength and impact of one-to-one	tuition on a one-to-one basis
https://educationendowmentfoundation.org.uk/	<u>Population</u>	tuition, and guidance on what to	
education-evidence/teaching-learning-	The EEF Teaching and Learning	consider before implementation	High impact for moderate cost based
toolkit/one-to-one-tuition	Toolkit comprises a series of		on moderate evidence
Detained from any significant such site	accessible summaries of	Outcomes	One to one trition in come affective at
Retrieved from organisational web site	international evidence on teaching	Additional months progress in learning	One-to-one tuition is very effective at
(Report for the Education Endowment	3 to 18 year olds, including the	Quality appraisal rating	improving pupil outcomes, delivering
foundation)	cost, evidence strength, and impact of interventions, in this case, one-	Quality appraisal rating Critically low	approximately 4 months' additional
	to-one tuition	Chilically low	progress in secondary schools.
	to-one tuition		It might be an effective strategy for
			providing targeted support to pupils with
			low prior attainment or struggling in
			particular areas
			particular areas
			Short, regular sessions (about 30
			minutes 3-5 times a week) appear to
			result in optimum impact
			<ul> <li>Tuition is more likely to make an impact</li> </ul>
			if it is additional to, but explicitly linked
			with, normal lessons
			<ul> <li>One to one tuition can be expensive,</li> </ul>
			particularly when delivered by teachers.
			Approaches that use teaching assistants
			or in small groups rather than one to one
			have smaller positive effect on average,
			but may be a cost-effective option
			. Tan and to any trition lad by take his w
			• For one-to-one tuition led by teaching
			assistants, interventions are likely to be
			more beneficial when teaching
			assistants, are experienced, well-trained

			and supported – e.g. delivering a structured intervention  Studies in England have shown that pupils eligible for free school meals typically receive additional benefits from one to one tuition. Low attaining pupils are particularly likely to benefit.  • The average cost is moderate; lower for online delivery (15 hours for £167-£180 per pupil via the National Tutoring Programme year 1 (2020-2021)); higher for in-person tuition and qualified or specialist teachers
Education Endowment Foundation 2021b  Small group tuition (Teaching and Learning Toolkit) https://educationendowmentfoundation.org.uk/ education-evidence/teaching-learning- toolkit/small-group-tuition  Retrieved from organisational web site (Report for the Education Endowment foundation)	Systematic review and meta- analysis  Population The EEF Teaching and Learning Toolkit comprises a series of accessible summaries of international evidence on teaching 3-18 year olds, including the cost, evidence strength, and impact of interventions, in this case, small group tuition	Objective Provides evidence on the cost, evidence strength and impact of small group tuition, and guidance on what to consider before implementation.  Outcomes Additional months progress in learning  Quality appraisal rating Critically low	Definition: one teacher or professional educator working with 2-5 pupils together, usually in a separate working area. Intensive tuition in small groups is often provided to support lower attaining learners or those who are falling behind, but it can also be used as a more general strategy to ensure effective progress, or to teach challenging topics or skills  Moderate impact for low cost based on moderate evidence  • Small group tuition has an impact of 2 months' additional progress over the course of a year in secondary schools  • It is more likely to be effective if targeted at pupils' specific needs, identified by diagnostic assessment  • The cost-effectiveness of teaching in small groups (compared with one-to-one tuition) indicates that greater use of this approach may be worthwhile

			Providing training to the staff that deliver small group tuition is likely to increase impact  Additional small group support can be effectively targeted at pupils from disadvantaged backgrounds as part of a school's pupil premium strategy  Studies in England have shown that pupils eligible for free school meals typically receive additional benefits from small group tuition  Impact is linked to group size (the smaller, the better), more feedback from the teacher, more sustained engagement in smaller groups, or work which is more closely matched to learners' needs
Education Endowment Foundation 2021c  Peer tutoring (Teaching and Learning Toolkit)  https://educationendowmentfoundation.org.uk/e ducation-evidence/teaching-learning-toolkit/peer- tutoring  Retrieved from organisational web site (Report for the Education Endowment foundation)	Systematic review and meta- analysis  Population The EEF Teaching and Learning Toolkit comprises a series of accessible summaries of international evidence on teaching 3-18 year olds, including the cost, evidence strength, and impact of interventions, in this case, peer tutoring	Objective Provides evidence on the cost, evidence strength and impact of peer tutoring, and guidance on what to consider before implementation  Outcomes Additional months progress in learning  Quality appraisal rating Critically low	Definition: Includes a range of approaches in which learners work in pairs or small groups to provide each other with explicit teaching support, such as: cross-age tutoring, in which an older learner takes the tutoring role and is paired with a younger tutee or tutees; peer assisted learning, which is a structured approach for mathematics and reading with sessions; and reciprocal peer tutoring, in which learners alternate between the role of tutor and tutee. Peer assessment can take different forms, such as reinforcing learning or correcting misunderstandings  High impact for very low cost based on extensive evidence  Peer tutoring approaches appear to have an average positive effect equivalent to approximately five additional months' progress.

	It has an impact on both tutors and tutees and may be a cost-effective approach to delivering one-to-one or small group tuition
	It seems to be most effective when used to review or consolidate learning, rather than introducing new material
	• Training for staff and tutors is essential for success. It is crucial to allocate sufficient time to train both staff and tutors, to ensure training provides structure to the tutoring, and to identify and implement improvements as the programme progresses
	• Four to ten week intensive blocks with regular sessions (4-5 times a week) appear to provide maximum impact
	<ul> <li>All types of pupil appear to benefit but there is some evidence that pupils who are low-attaining and those with special educational needs make the biggest gains</li> </ul>
	• It appears to be particularly effective when there is support to ensure the quality of peer interaction is high. An age gap of less than 3 years between tutor and tutee is optimal, and the work must be challenging to the tutee whilst easy enough for the tutor to provide support.
	Successful approaches may also support the social and personal development of pupils and boost their self-confidence and motivation for learning

			The average cost is expected to be very low
Education Endowment Foundation 2021d  Mentoring (Teaching and Learning Toolkit) https://educationendowmentfoundation.org.uk/ education-evidence/teaching-learning- toolkit/mentoring  Retrieved from organisational web site (Report for the Education Endowment foundation)	Systematic review and meta- analysis  Population The EEF Teaching and Learning Toolkit comprises a series of accessible summaries of international evidence on teaching 3-18 year olds, including the cost, evidence strength, and impact of interventions, in this case, mentoring	Objective Provides evidence on the cost, evidence strength and impact of mentoring, and guidance on what to consider before implementation  Outcomes Additional months progress in learning  Quality appraisal rating Critically low	Definition: Mentoring involves pairing young people with an older peer or volunteer, who acts as a positive role model, often to young people who are deemed to be hard to reach or at risk of educational failure or exclusion. In general, mentoring aims to build confidence, develop resilience and character, or raise aspirations, rather than to develop specific academic skills or knowledge. Mentors typically build relationships with young people by meeting with them one to one for about an hour a week over a sustained period  Low impact for moderate cost based on moderate evidence  The impact of mentoring varies but, on average, it is likely to have a small positive impact on attainment. Some studies have found more positive impacts for students from disadvantaged backgrounds, and for non-academic outcomes such as attitudes to school, attendance and behaviour  • Positive effects on attainment tend not to be sustained once the mentoring stops. It is important to consider how pupils who have benefitted can be supported to retain positive changes in their confidence and behaviour  • Both community-based and school-based approaches can be successful  • Mentor drop-out can have a detrimental effect on mentees. It is important to consider how to support mentors

			There are risks associated with unsuccessful mentor pairings, which may have a detrimental effect on the mentee, and some studies report negative overall impacts
			Programmes which have a clear structure and expectations, provide training and support for mentors, and recruit mentors who are volunteers, are associated with more successful outcomes
			There is no evidence that approaches with a single focus on improving academic attainment are more effective; programmes with multiple objectives can be equally or more effective
			The average cost is moderate, and largely based on mentor training, salary costs (for non-volunteer mentors) and resources. Continuous training and support increases costs. A moderate and sustained amount of staff time is also required
Education Endowment Foundation 2021e Summer schools (Teaching and Learning Toolkit) https://educationendowmentfoundation.org.uk/e ducation-evidence/teaching-learning- toolkit/summer-schools  Retrieved from organisational web site (Report for the Education Endowment foundation)	Systematic review and meta- analysis  Population The EEF Teaching and Learning Toolkit comprises a series of accessible summaries of international evidence on teaching 3-19 year olds, including the cost, evidence strength, and impact of interventions, in this case, Summer schools	Objective Provides evidence on the cost, evidence strength and impact of Summer schools, and guidance on what to consider before implementation  Outcomes Additional months progress in learning  Quality appraisal rating Critically low	Definition: Summer schools are lessons or classes during the summer holidays. They are often designed as catch-up programmes, although some concentrate on sports or other non-academic activities, or have a specific aim, such as supporting pupils at the transition from primary to secondary school or preparing high-attaining pupils for university  Moderate impact for moderate cost based on limited evidence
			Summer schools have a positive impact on average (3 months' additional

	progress) but are expensive to implement.
	Provision that aims to improve learning must have an academic component. Summer schools that include an intensive teaching component such as using a small group or one-to-one approach have higher impacts on average
	Maintaining regular attendance can be challenging, particularly for disadvantaged students. It is crucial to consider how to attract and engage students to prevent attainment gaps widening
	Summer schools can also provide
	additional experiences and activities such as arts or sports. Such activities may be valuable in themselves or be used to increase engagement
	Greater impact can be achieved when summer schools are intensive, well- resourced, and involve small group or one-to-one teaching by trained and experienced teachers, preferably who are known to the pupils
	There is some evidence that pupils from disadvantaged backgrounds can benefit from summer schools, where activities are focused on well-resourced, small group or one to one academic approaches
	The average cost is moderate, and largely based on staff salary, facilities, resources and activity costs

# Education Endowment Foundation 2021f **Extending school time**

(Teaching and Learning Toolkit)

https://educationendowmentfoundation.org.uk/education-evidence/teaching-learning-toolkit/extending-school-time

Retrieved from organisational web site (Report for the Education Endowment foundation)

Systematic review and metaanalysis

### **Population**

The EEF Teaching and Learning Toolkit comprises a series of accessible summaries of international evidence on teaching 3-18 year olds, including the cost, evidence strength, and impact of interventions, in this case, extending school time.

Provides evidence on the cost, evidence strength and impact of extending school time, and guidance on what to consider before implementation

#### Outcomes

Additional months progress in learning

## Quality appraisal rating Critically low

Definition: 3 main approaches are

- 1) extending the school day,
- 2) extending the school year, and
- 3) providing extra time for targeted groups, particularly disadvantaged or low-attaining pupils, either before or after school.

## Moderate impact for moderate cost based on limited evidence

- Programmes that extend school time have a positive impact (2 months additional progress over a year for secondary schools) but are expensive and may not be cost-effective to implement. Schools will also need to consider the workload and wellbeing of staff
- Extra time should meet pupils' needs and build on their capabilities. It is important to monitor attendance to ensure that pupils who need additional support can benefit
- Before and after school programmes with a clear structure, a strong link to the curriculum, and well-qualified and welltrained staff are more clearly linked to academic benefits than other types of extended hours provision
- Additional time may be more effective if used for one-to-one support
- Enrichment activities without a specific focus on learning can have an impact on attainment, but the effects tend to be lower and the impact of different interventions can vary a great deal

			Overall costs are estimated a moderate. Extending the school year by 2 weeks would cost about £250 per pupil per year for secondary schools; after- school clubs cost on average £7 per session per pupil
Education Endowment Foundation 2021g Metacognition and self-regulation (Teaching and Learning Toolkit) https://educationendowmentfoundation.org.uk/ education-evidence/teaching-learning- toolkit/metacognition-and-self-regulation  Retrieved from organisational web site (Report for the Education Endowment foundation)	Systematic review and meta- analysis  Population The EEF Teaching and Learning Toolkit comprises a series of accessible summaries of international evidence on teaching 3-19 year olds, including the cost, evidence strength, and impact of interventions, in this case, Metacognition and self-regulation	Provides evidence on the cost, evidence strength and impact of extending school time, and guidance on what to consider before implementation  Outcomes Additional months progress in learning  Quality appraisal rating  Critically low	Definition: metacognition and self-regulation approaches support pupils to think about their own learning more explicitly, often by teaching them specific strategies for planning, monitoring and evaluating their learning. Interventions give students a repertoire of strategies to choose from and the skills to choose the most suitable strategy for a given learning task  Very high impact for very low cost based on extensive evidence  • The potential impact of metacognition and self-regulation approaches is high (7 months additional progress in secondary schools), although it can be difficult to realise this impact in practice as students are required to take responsibility for their learning and develop an understanding of what is required to succeed  • Explicitly teaching strategies to help plan, monitor and evaluate learning can be effective, particularly when they are applied to challenging tasks rooted in the usual curriculum content  • Teachers can demonstrate effective strategies by modelling their own thought processes. e.g., a teacher might explain their thinking when interpreting a text or solving a mathematical task, alongside

			promoting and developing metacognitive talk related to lesson objectives  • Professional development can be used to develop a mental model of metacognition and self-regulation, alongside an understanding of teaching metacognitive strategies  • Metacognitive and self-regulation strategies can be effective when taught in collaborative groups so that learners can support each other and make their thinking explicit through discussion  • Costs are estimated to be very low, and mostly arise from professional development training for staff
Maughan et al. 2016 Improving Level 2 English and maths outcomes for 16-18 year olds: Literature review https://educationendowmentfoundation.org.uk/public/files/Presentations/Publications/16-18 Literature Review.pdf  Retrieved from organisational web site (Report for the Education Endowment foundation)	Population 16 -18 years old students from disadvantaged backgrounds, who do not attain at least grade C GCSE in these subjects in year 11	Objectives To assess the evidence on specific interventions, or key features of interventions, which may be effective in improving English and mathematics outcomes for students, who are disproportionately from disadvantaged backgrounds, who do not attain at least grade C GCSE in these subjects in year 11  Outcomes Educational attainment  Quality appraisal rating Critically low due to poor reporting of methods	Mathematics interventions The mathematics articles were grouped into those that (a) were mathematics interventions within mathematics lessons b) those that were some type of support intervention (such as teacher selection or training) (c) those that embedded mathematics into vocational studies in some way (d) those that involved interventions outside of the main teaching (tutoring interventions)  Specific interventions in maths classrooms: "targeted increases in time allocated to study can have a positive impact for borderline students, and that using realistic contexts and classroom discussion can lead to improvements in outcomes". p.4.  Tutoring: "importance of high quality training for tutors" p.5

Other important features of maths interventions included: an early diagnosis via testing; the use of relevant real-life or vocational contexts; technology and e-learning; having appropriately skilled teachers; targeted and sustained teaching. Personal relationships, building self-identity and developing student motivation were also likely to promote success

English interventions
The English interventions that were
reviewed fell into a number of different
categories: those that were taught in the
English classroom, those that were
taught across the curriculum, those that
involved withdrawing students from core
lessons, and writing interventions

Specific interventions in English classrooms "professional development for teachers in the content areas is crucial, and sustained input for the students is generally required" p.3

Writing interventions: "The intervention was more likely to benefit those in the sample who were already the more able writers" p.4

Other important features of interventions likely to have a positive impact on **English** were: peer-mediated support; support sustained over time; multiple strategies; specific teaching of literacy skills; within-class or cross-curricular approaches (not withdrawing students from mainstream lessons); focus on fluency, comprehension or vocabulary, or a combination

Sixth Form Colleges Association 2021 Rapid review with narrative Objectives Evidence was mixed, but the weight of Supporting students' mental health after the What have the impacts of synthesis evidence suggested: lockdown College-aged young people's mental Coronavirus been on young https://sfcawebsite.s3.amazonaws.com/upload health has deteriorated as a result of the Evidence (pre-COVID) relating to people's mental health? s/document/SFCA-Mental-health-in-collegesthe intervention delivered in pandemic; school-based CBT (p. 14) What does the evidence say about evidence-review-Updated.pdf?t=1615373296 schools and colleges: school and college-based and mindfulness programmes (p. 16) therapy-based prevention may reduce anxiety and depression, at approaches to improving students' Retrieved from organisational website programmes: mindfulness: least in the short term: counselling (p. mental health? counselling; physical activity 17), exercise (p. 19) and sleep interventions (p. 20) could improve interventions; improving sleep. Outcomes Improving access to treatment: mental health; the screening (p.40) of Mental Health screening; increasing referrals to students for mental health needs, and mental health treatment the provision of effective referral Quality appraisal rating 6-items, 1 Yes, 1 Partial yes and 4 No pathways (p. 41) to clinical treatment could be helpful (though it is Population Focused on the evidence for older acknowledged that mental health teenagers and in sixth form services are severely over-stretched) colleges where possible. But where it is particularly relevant, or evidence is harder to come by, the review included studies looking at vounger children and in secondary schools too White 2017a Rapid review of programmes The impact of mindfulness and social Objectives Evidence summary: Reducing the attainment implemented in the UK and Ireland To examine the effectiveness of health and emotional learning programmes on gap – the role of health and wellbeing and wellbeing interventions in a school wellbeing were explored, the other interventions in schools. Mindfulness and social and setting to potentially reduce inequalities interventions explored academic and emotional learning programmes http://www.healthscotland.scot/media/1735/evi in educational outcomes behavioural outcomes (not extracted). dence-summary-reducing-the-attainment-gap- Diet and nutrition programmes the-role-of-health-and-wellbeing-interventions-(breakfast clubs, free school Mindfulness-based interventions Outcomes Cognitive outcomes and resilience and in-schools.pdf meals) delivered in a school setting to children Physical activity stress measures of a range of school ages showed White 2017b WHO Health Promoting Schools Wellbeing outcomes significant effects for significant effects Rapid Evidence Review: Reducing the programmes were found for cognitive outcomes and attainment gap - the role of health and Quality appraisal rating resilience and stress measures (p. 5) wellbeing interventions in schools. Population 6-items, 5 Yes, 1 No http://www.healthscotland.scot/media/1694/red General school population no Mixed evidence that social and ucing-the-attainment-gap-the-role-of-healthfurther details provided emotional learning programmes have

and-wellbeing-interventions-in-schools.pdf

Retrieved from back chaining

a positive impact on children's wellbeing

outcomes (p. 6)

Programmes were found to be more likely to be effective if they followed four key principles. (p. 5)  • Sequenced – a connected and coordinated set of activities to achieve skill development objective.  • Active – use of dynamic, varied forms of learning that are engaging and allow students to practise and learn new skills in real-world situations.
Focused – has at least one component devoted to developing personal or social skills.
Explicit – based on a theoretical model of social and emotional learning and targets specific social and emotional learning rather than positive development in general.
Few studies reported effects on young people from different socio-economic or ethnic backgrounds