

Study Characteristics							
Review characteristics and quality assessment for studies providing unique effects							
First Author	Year	Design Restrictions	Regions Restrictions	Study Range Earliest - Latest	Sample Age Restrictions (Age Range) <sup>1</sup>	Outcomes Assessed	Exposures Assessed
Abrami	2015	Include: Experimental; Quasi-experimental	None specified	2009–2015	Early childhood; School-age Children (Primary/Elementary)	<ul style="list-style-type: none"><li>Literacy: Listening comprehension</li><li>Literacy: Phonics</li><li>Literacy: Phonic awareness</li><li>Literacy: Reading comprehension</li><li>Literacy: Reading fluency</li><li>Literacy: Vocabulary knowledge</li></ul>	<ul style="list-style-type: none"><li>Intervention: Literacy (Abracadabra; in schools)</li></ul>
Adelantado-Renau	2019	Include: Cross-sectional studies	None specified	1982–2019	Children; Adolescents (5.7-18.0)	<ul style="list-style-type: none"><li>Learning: General</li><li>Literacy: General</li><li>Numeracy: General</li></ul>	<ul style="list-style-type: none"><li>Screen use: General</li><li>TV programs and movies: General</li><li>Video games: General</li></ul>
Aghasi	2020	Include: Observational	None specified	2007–2016	All (14.2-15.8)	<ul style="list-style-type: none"><li>Body composition</li></ul>	<ul style="list-style-type: none"><li>Internet use: General</li></ul>
Andrade	2019	Include: Interventions	None specified	2010–2017	Children; Adolescents	<ul style="list-style-type: none"><li>Healthy behavior: Self-efficacy</li><li>Psychological health: Depression</li><li>Psychological health: Enjoyment</li><li>Self-perceptions: General</li><li>Self-perceptions: Self-esteem</li></ul>	<ul style="list-style-type: none"><li>Video games: Physically active</li></ul>
Bartel	2015	None	None specified	2004–2014	Adolescents (12.2-17.7)	<ul style="list-style-type: none"><li>Sleep: Bedtime</li><li>Sleep: Duration</li><li>Sleep: Time to fall asleep</li></ul>	<ul style="list-style-type: none"><li>Computer use: General</li><li>Internet use: General</li><li>Screen use: General (mobile phone)</li><li>TV programs and movies: General</li><li>Video games: General</li></ul>
Blok	2002	None	None specified	1990–2000	All (5.4-11.5)	<ul style="list-style-type: none"><li>Literacy: Reading fluency</li></ul>	<ul style="list-style-type: none"><li>Intervention: Literacy</li></ul>
Bossen	2020	Include: Randomised controlled trials	None specified	2011–2018	Children (10.0-15.7)	<ul style="list-style-type: none"><li>Body composition</li><li>Cardiometaabolic health: Fitness</li><li>Physical activity: General</li><li>Physical health: Muscular fitness</li></ul>	<ul style="list-style-type: none"><li>Video games: Health promoting content</li></ul>
Boyland	2016	Include: Experimental	None specified	2004–2015	Children; Adolescents (6.0-10.4)	<ul style="list-style-type: none"><li>Diet: Food intake</li></ul>	<ul style="list-style-type: none"><li>Advertising: Unhealthy food</li></ul>
Byun	2018	Include: All quantitative designs	None specified	2006–2014	School-age Children	<ul style="list-style-type: none"><li>Numeracy: General</li></ul>	<ul style="list-style-type: none"><li>Video games: Numeracy</li></ul>
Carter	2016	Include: All quantitative designs	None specified	2011–2015	Children; Adolescents (10.6-17.0)	<ul style="list-style-type: none"><li>Sleep: Inadequate duration</li><li>Sleep: Lethargy</li><li>Sleep: Poor quality</li></ul>	<ul style="list-style-type: none"><li>Screen use: General (mobile phone at bed time)</li></ul>
Champion	2019	Include: Randomised controlled trials	None specified	2003–2017	School-age Children (11.4-15.9)	<ul style="list-style-type: none"><li>Body composition</li><li>Diet: Fat consumption</li><li>Diet: Fruit and vegetable intake</li><li>Diet: Fruit intake</li><li>Diet: Sugary drinks and snacks</li><li>Physical activity: General</li><li>Physical activity: Moderate-to-vigorous intensity</li><li>Risky behavior: Alcohol consumption</li><li>Risky behavior: Smoking</li><li>Screen time: General</li></ul>	<ul style="list-style-type: none"><li>Intervention: Lifestyle risk behaviour (at school)</li></ul>
Chan	2014	Include: Experimental; Quasi-experimental	None specified	2002–2012	School-age Children	<ul style="list-style-type: none"><li>Numeracy: General</li></ul>	<ul style="list-style-type: none"><li>Intervention: Dynamic geometry software</li></ul>
Cheung	2012	Include: Randomised controlled trials	None specified	1982–2010	School-age Children	<ul style="list-style-type: none"><li>Literacy: Reading</li></ul>	<ul style="list-style-type: none"><li>Intervention: Reading (in schools)</li></ul>
Cheung	2013	Include: Experimental; Quasi-experimental	None specified	1980–2010	School-age Children	<ul style="list-style-type: none"><li>Numeracy: General</li></ul>	<ul style="list-style-type: none"><li>Intervention: Mathematics (in schools)</li></ul>
Coyne	2018	None	None specified	1975–2017	Children; Adolescents	<ul style="list-style-type: none"><li>Prosocial Behavior: General</li></ul>	<ul style="list-style-type: none"><li>Screen use: Prosocial content</li></ul>
Cushing	2010	Include: All quantitative designs; Experimental	None specified	1989–2009	Children; Adolescents	<ul style="list-style-type: none"><li>Healthy behavior: General</li></ul>	<ul style="list-style-type: none"><li>Intervention: Health behaviours</li></ul>
Darling	2017	Include: Intervention	None specified	2006–2016	Children; Adolescents (8.7-16.0)	<ul style="list-style-type: none"><li>Body composition</li><li>Diet: Healthy dietary behaviour</li><li>Physical activity: General</li></ul>	<ul style="list-style-type: none"><li>Intervention: To promote health (via mobile phone)</li></ul>
de Oliveira	2016	Include: Observational	None specified	2010–2014	Adolescents	<ul style="list-style-type: none"><li>Cardiometaabolic health: Metabolic Syndrome</li></ul>	<ul style="list-style-type: none"><li>Screen use: General</li></ul>
Fang	2019	Include: Cohort; Case-control; Cross-sectional	None specified	2006–2019	Children; Adolescents	<ul style="list-style-type: none"><li>Body composition</li></ul>	<ul style="list-style-type: none"><li>Computer use: General</li><li>Screen use: General</li><li>TV programs and movies: General</li></ul>
Ferguson	2017	None	None specified	2005–2017	Children; Adolescents	<ul style="list-style-type: none"><li>Risky behavior: Sexual activity</li><li>Risky behavior: Sexual activity (initiation of sex)</li></ul>	<ul style="list-style-type: none"><li>Screen use: Sexual content</li></ul>
Folkvord	2018	Include: Interventions	None specified	2007–2018	Children; Adolescents	<ul style="list-style-type: none"><li>Diet: Food intake (calories)</li></ul>	<ul style="list-style-type: none"><li>Advertising: Advorgames</li></ul>
Gardella	2017	Include: Cross-sectional	Include: North America	2006–2014	Adolescents (12.5-16.2)	<ul style="list-style-type: none"><li>Learning: Educational achievement problems</li><li>Learning: School attendance problems</li></ul>	<ul style="list-style-type: none"><li>Internet use: Cyberbullying victimization</li></ul>
Ghobadi	2018	Include: Cohort; Case-control; Cross-sectional Exclude: Interventions	None specified	2009–2014	Children; Adolescents	<ul style="list-style-type: none"><li>Body composition</li></ul>	<ul style="list-style-type: none"><li>TV programs and movies: Mealtime</li></ul>
Graham	2015	Include: Experimental; Quasi-experimental	None specified	2004–2011	School-age Children (Primary/Elementary School)	<ul style="list-style-type: none"><li>Literacy: Writing</li></ul>	<ul style="list-style-type: none"><li>Intervention: Writing feedback</li></ul>
Hammersley	2016	Include: Randomised controlled trials	None specified	2003–2013	Children; Adolescents	<ul style="list-style-type: none"><li>Body composition</li></ul>	<ul style="list-style-type: none"><li>Intervention: To promote healthy weight (obesity prevention)</li></ul>
Hassan-Saleh	2019	Include: Experimental; Quasi-experimental	None specified	2008–2016	Children; Adolescents	<ul style="list-style-type: none"><li>Literacy: Pronunciation</li></ul>	<ul style="list-style-type: none"><li>Intervention: Pronunciation</li></ul>
Hernandez-Jimenez	2019	Include: Experimental; Quasi-experimental	None specified	2009–2017	Children; Adolescents	<ul style="list-style-type: none"><li>Body composition</li></ul>	<ul style="list-style-type: none"><li>Video games: Physically active</li></ul>
Hurwitz	2018	None	Include: North America	1997–2018	Early childhood/pre-school; School-age Children (Early Primary/Elementary)	<ul style="list-style-type: none"><li>Literacy: General</li></ul>	<ul style="list-style-type: none"><li>Intervention: Literacy videos</li></ul>
Janssen	2020	Include: Experimental; Cross-sectional; Longitudinal	None specified	2007–2019	Children	<ul style="list-style-type: none"><li>Sleep: Duration</li></ul>	<ul style="list-style-type: none"><li>Screen use: General</li></ul>
Kates	2018	None	None specified	2008–2016	School-age Children	<ul style="list-style-type: none"><li>Learning: General</li></ul>	<ul style="list-style-type: none"><li>Screen use: General (mobile phone)</li></ul>
Kroesberger	2003	Include: Within subject design; between subject design	None specified	1985–1999	School-age Children (Primary/Elementary) (7.0-11.3)	<ul style="list-style-type: none"><li>Numeracy: General</li></ul>	<ul style="list-style-type: none"><li>Intervention: Mathematics (via computer in classrooms)</li></ul>
Kucukalkan	2019	Include: Experimental	None specified	2007–2016	School-age Children (Primary/Elementary)	<ul style="list-style-type: none"><li>Numeracy: General</li></ul>	<ul style="list-style-type: none"><li>Intervention: Mathematics</li></ul>
Lanca	2020	Include: Cohort; Case-control; Cross-sectional; Intervention trials. Exclude: Case reports; Retrospective studies.	None specified	2007–2016	Children; Adolescents	<ul style="list-style-type: none"><li>Eye health: Myopia</li></ul>	<ul style="list-style-type: none"><li>Screen use: General</li></ul>
Li	2010	Include: Experimental; Quasi-experimental	None specified	1991–2005	School-age Children	<ul style="list-style-type: none"><li>Numeracy: General</li></ul>	<ul style="list-style-type: none"><li>Intervention: Mathematics</li></ul>
Liao	2008	Include: All quantitative designs	Include: Taiwan	1990–2003	School-age Children (Primary/Elementary)	<ul style="list-style-type: none"><li>Learning: General</li></ul>	<ul style="list-style-type: none"><li>Intervention: Education (via computer)</li></ul>
Liao	2014	Include: Randomised controlled trials	None specified	1999–2012	Children; Adolescents (4.0-14.7)	<ul style="list-style-type: none"><li>Body composition</li></ul>	<ul style="list-style-type: none"><li>Intervention: Screenetime reduction</li></ul>
Liu	2016	Include: Cross-sectional; Case-control; Longitudinal	None specified	2001–2014	All (10.9-18.0)	<ul style="list-style-type: none"><li>Psychological health: Depression</li></ul>	<ul style="list-style-type: none"><li>Screen use: General</li></ul>
Liu	2019	Include: All quantitative designs	None specified	2007–2014	All (13.3-16.6)	<ul style="list-style-type: none"><li>Psychological health: Anxiety</li><li>Psychological health: Depression</li><li>Psychological health: Satisfaction</li></ul>	<ul style="list-style-type: none"><li>Social Media: Instant messaging</li><li>Video games: General</li></ul>
Madigan	2020	Include: Observational Exclude: Qualitative	None specified	1973–2019	Children (0.5-10.6)	<ul style="list-style-type: none"><li>Literacy: General</li></ul>	<ul style="list-style-type: none"><li>Intervention: Education (general)</li><li>Screen use: General</li><li>Screen use: General (covieving)</li><li>TV programs and movies: Covieving</li><li>TV programs and movies: Educational</li><li>TV programs and movies: General</li><li>TV programs and movies: General (in background)</li></ul>
Mares	2005	None	None specified	1969–1989	Children	<ul style="list-style-type: none"><li>Aggression: Towards peers</li><li>Cognition: Reducing stereotypes</li><li>Prosocial Behavior: Altruism</li><li>Social interactions: General</li></ul>	<ul style="list-style-type: none"><li>TV programs and movies: General</li></ul>
Mares	2013	Exclude: Experimental	Exclude: North America	1973–2010	Children	<ul style="list-style-type: none"><li>Cognition: Moral reasoning and perception of out-groups</li><li>Learning: General</li><li>Learning: Literacy and numeracy</li><li>Learning: Physical and social environment</li></ul>	<ul style="list-style-type: none"><li>Intervention: Sesame Street</li></ul>
Marshall	2004	None	None specified	1985–2002	Children; Adolescents	<ul style="list-style-type: none"><li>Body composition</li><li>Physical activity: General</li></ul>	<ul style="list-style-type: none"><li>TV programs and movies: General</li><li>Video games: General</li></ul>
Martins	2019	Include: All quantitative designs	None specified	2003–2018	All	<ul style="list-style-type: none"><li>Aggression: Towards peers</li></ul>	<ul style="list-style-type: none"><li>Screen use: General</li></ul>
McArthur	2012	Include: Randomised controlled trials and quasi-RCTs.	None specified	1994–2009	All (6.7-16.2)	<ul style="list-style-type: none"><li>Literacy: Phonics</li></ul>	<ul style="list-style-type: none"><li>Intervention: Literacy (phonics; via computer)</li></ul>
McArthur	2018	Include: Randomised controlled trials and quasi-RCTs.	Include: English speaking countries	1994–2015	Children; Adolescents	<ul style="list-style-type: none"><li>Literacy: General</li></ul>	<ul style="list-style-type: none"><li>Intervention: Literacy</li></ul>
Oldrati	2020	Include: Group-control experimental design	None specified	2006–2018	School-age Children	<ul style="list-style-type: none"><li>Cognition: Cognitive Functioning</li><li>Cognition: Executive Functioning</li><li>Cognition: Verbal skills</li><li>Cognition: Visuospatial skills</li><li>Numeracy: General</li><li>Psychological health: Adjustment</li></ul>	<ul style="list-style-type: none"><li>Intervention: Cognitive training</li></ul>
Paik	1994	None	None specified	NA	Children; Adolescents	<ul style="list-style-type: none"><li>Antisocial Behaviour: General</li></ul>	<ul style="list-style-type: none"><li>TV programs and movies: Violent content</li></ul>
Pearce	2016	Include: All quantitative designs	None specified	1986–2012	Children; Adolescents	<ul style="list-style-type: none"><li>Psychological health: Internalizing</li></ul>	<ul style="list-style-type: none"><li>TV programs and movies: Scary content</li></ul>
Peng	2011	None	None specified	2001–2010	Children; Adolescents	<ul style="list-style-type: none"><li>Cardiometaabolic health: Maximum oxygen consumption</li><li>Physical activity: Energy expenditure</li><li>Physical activity: Heart rate</li></ul>	<ul style="list-style-type: none"><li>Video games: Physically active</li></ul>
Poorolajal	2020	Include: Observational	None specified	1995–2018	Children; Adolescents	<ul style="list-style-type: none"><li>Body composition</li></ul>	<ul style="list-style-type: none"><li>TV programs and movies: General</li><li>Video games: General</li></ul>
Prescott	2018	Include: Longitudinal	None specified	2008–2017	All (8.9-16.0)	<ul style="list-style-type: none"><li>Aggression: Towards peers</li></ul>	<ul style="list-style-type: none"><li>Video games: Violent content</li></ul>
Rodriguez-Rocha	2019	Include: Experimental; Quasi-experimental	None specified	1999–2018	All (4.5-15.4)	<ul style="list-style-type: none"><li>Diet: Fruit and vegetable intake</li></ul>	<ul style="list-style-type: none"><li>Intervention: Fruit and vegetable</li></ul>
Sadeghirad	2016	Include: Randomised controlled trials	None specified	1978–2014	Children; Adolescents (3.8-11.0)	<ul style="list-style-type: none"><li>Diet: Unhealthy food choice</li></ul>	<ul style="list-style-type: none"><li>Advertising: Unhealthy food</li></ul>
Schroeder	2013	Include: Experimental; Quasi-experimental	None specified	2001–2009	All	<ul style="list-style-type: none"><li>Learning: General</li></ul>	<ul style="list-style-type: none"><li>Intervention: With digital characters</li></ul>
Scionti	2019	Include: Interventions	None specified	2009–2019	Children (4.3-6.1)	<ul style="list-style-type: none"><li>Cognition: Executive functioning</li></ul>	<ul style="list-style-type: none"><li>Intervention: Cognitive training</li></ul>
Shin	2019	Include: Interventions	None specified	2013–2018	Children; Adolescents (12.0-15.7)	<ul style="list-style-type: none"><li>Body composition</li><li>Diet: Sugary drinks</li><li>Physical activity: General</li><li>Screen time: General</li></ul>	<ul style="list-style-type: none"><li>Intervention: To promote health (via mobile phone app)</li><li>Intervention: To promote health (via mobile phone)</li><li>Intervention: To promote health (via text message)</li></ul>
Slavin	2014	Include: Randomised controlled trials; Quasi-experimental; Observational	None specified	2000–2011	School-age Children (Primary/Elementary)	<ul style="list-style-type: none"><li>Science: General</li></ul>	<ul style="list-style-type: none"><li>Intervention: Science (in schools)</li></ul>
Takacs	2014	Include: Experimental; Quasi-experimental	None specified	1980–2014	NA	<ul style="list-style-type: none"><li>Learning: General</li></ul>	<ul style="list-style-type: none"><li>e-Books: Narration</li></ul>
Takacs	2019	Include: Randomised controlled trials and quasi-RCTs.	None specified	2001–2016	Children	<ul style="list-style-type: none"><li>Cognition: Executive Functioning (accuracy)</li><li>Cognition: Executive Functioning (cognitive flexibility)</li><li>Cognition: Executive Functioning (inhibition)</li><li>Cognition: Executive Functioning (working memory)</li></ul>	<ul style="list-style-type: none"><li>Intervention: Education (via computer)</li></ul>
Tekedere	2016	None	None specified	2010–2015	All	<ul style="list-style-type: none"><li>Learning: General</li></ul>	<ul style="list-style-type: none"><li>Intervention: Augmented reality (in schools)</li></ul>
Vahedi	2018	Include: Interventions (pre-post or controlled). Exclude: Cross-sectional	None specified	2015–2016	School-age Children (Middle/High School)	<ul style="list-style-type: none"><li>Risky behavior: Media literacy</li><li>Risky behavior: Risk taking (attitude)</li></ul>	<ul style="list-style-type: none"><li>Intervention: Media literacy (web-based)</li></ul>
Vannucci	2020	Exclude: Qualitative; Case studies	None specified	2011–2018	Adolescents (12.6-18.0)	<ul style="list-style-type: none"><li>Risky behavior: Risk taking (general)</li><li>Risky behavior: Risky sexual behaviour</li><li>Risky behavior: Substance abuse</li></ul>	<ul style="list-style-type: none"><li>Social Media: General</li></ul>
Xie	2018	Include: Experimental; Quasi-experimental; Pre-test post-test	None specified	2010–2018	Children (1.8-5.9)	<ul style="list-style-type: none"><li>Learning: General</li></ul>	<ul style="list-style-type: none"><li>Intervention: Education (via touch screen)</li></ul>
Zhang	2016	Include: Cohort; Case-control; Cross-sectional	None specified	2001–2014	Children	<ul style="list-style-type: none"><li>Body composition</li></ul>	<ul style="list-style-type: none"><li>TV programs and movies: General</li></ul>
Zhou	2020	Exclude: Non-empirical studies; Qualitative; Systematic reviews or meta-analyses	None specified	2009–2018	All	<ul style="list-style-type: none"><li>Healthy behavior: General</li><li>Healthy behavior: Self-efficacy</li><li>Psychological health: Enjoyment</li></ul>	<ul style="list-style-type: none"><li>Video games: Health promoting content</li></ul>
Zucker	2009	Include: Randomised controlled trials; Quasi-experimental; Observational	None specified	1997–2006	School-age Children (Primary/Elementary)	<ul style="list-style-type: none"><li>Literacy: Decoding</li><li>Literacy: Reading comprehension</li></ul>	<ul style="list-style-type: none"><li>e-Books: General</li></ul>

<sup>1</sup> Where provided