First	cteristic	s and quality assess	Sample	ees providing under the control of t	racteristics Sample Age Restrictions		istics for studies providin			_	Lit.	Dual	y Assess	Studies		
	2020	Include: Experimental designs	None specified	2009- 2019	School-age Children (Early Primary, Elementary)	•	Literacy: Listening comprehension Literacy: Phonics Literacy: Phonomic awareness Literacy: Reading comprehension Literacy: Reading fluency		Intervention: Literacy (Abracadabra; in schools)	Crit. ³	Search U	L	Qual. ⁶	Listed ⁷	Bias ⁸	Hetero L
Adelantado Renau	2019	Include: Cross- sectional studies	None specified	1982– 2019	Children; Adolescents (5.7-18.0)	•	Literacy: Vocabulary knowledge Learning: General Literacy: General Numeracy: General	•	Screen use: General TV programs and movies: General Video games: General	L	L	L	L	L	L	L
Andrade	7019	Include: Interventions	Include: Overweight and obese	2010– 2017	Children; Adolescents	•	Healthy behavior: Self- efficacy Psychological health: Depression Psychological health: Enjoyment Self-perceptions: General Self-perceptions: Self- esteem	•	Video games: Physically active	U	L	L	U	L	н	L
	2020	None specified Include: Interventions	None specified Include: Autism	2008– 2020 2013– 2015	School-age Children (Primary, Elementary, Middle School) School-age Children (Primary,	•	Learning: Motivation		Video games: Educational (with competition) Intervention: Education (via touch	U	H	Н	Н	Н	L	L
Bartel	2015		Exclude: Atypical population (except for delayed sleep phase disorder or insomnia)	2004– 2014	Adolescents (12.2-17.7)	•	Sleep: Duration Sleep: Time to fall asleep	•	Computer use: General Internet use: General Screen use: General (mobile phone) TV programs and movies: General Video games: General	L	L	U	U	L	U	U
Benavides-	2022	Include: Randomised controlled trials and quasi-RCTs. Include: Randomised controlled trials	Exclude: Any disease Mental disorders Include: Math difficulties Include: Regular	1999– 2019 2006– 2018	Adolescents Children		Diet: Fat consumption	•	Intervention: Nutrition (in schools) Intervention: Mathematics	L	Н	L	L H	L	H	L
Blok	2002		students, poor readers or dyslexics Exclude: Severe or multiple disabilities	1990– 2000	All (5.4-11.5)	•	Body composition Cardiometabolic		Intervention: Literacy	U	L	Н	Н	L	Н	L
	2016	Randomised controlled trials Include: Experimental Include: All	Include: Chronic disease None specified	2011– 2018 2004– 2015	Children; Children; Adolescents (6.0-10.4)	•	Physical activity: General Physical health: Muscular fitness Diet: Food intake	•	Video games: Health promoting content Advertising: Unhealthy food	Н	L	L	U	L	L	L
	2020	quantitative designs Include: designs with control groups	None specified Exclude: Brain damage	2006– 2014 2002– 2019	School-age Children Children (3.4-14.3)	•	Cognition: Executive functioning Cognition: Executive Functioning (cognitive		Video games: Numeracy Computer use: Executive functioning training	U	Н	U	Н	H	H	H
		groups				•	(inhibition) Cognition: Executive Functioning (working memory) Body composition Diet: Fat consumption Diet: Fruit and vegetable intake		craming							
Champion	2019	Include: Randomised controlled trials	None specified	2003– 2017	School-age Children (11.4-15.9)	•	General Physical activity: Moderate-to-vigorous intensity Risky behavior: Alcohol consumption		Intervention: Lifestyle risk behaviour (at school)	L	L	L	L	L	L	L
	2014	Include: Experimental; Quasi- experimental Include: pre-post designs with or	None specified	2002– 2012 2001–	School-age Children School-age Children	•	Numeracy: General		Intervention: Dynamic geometry software Screen use: General (in	U	Н	Н	H	L	L	L
Chen	2020	without control group Include: Experimental designs Include: Randomised controlled trials	None specified None specified	2016 2008– 2019 1982– 2010	(Primary, Elementary) All School-age Children	•	Learning: General	•	video games: Educational (with competition) Intervention: Reading (in schools)	U	H	U	Н	н	H L	L
J	2013	Include: Experimental; Quasi- experimental Include: experiemental designs with control group	None specified None specified	1980– 2010 2008– 2013	School-age Children		Numeracy: General		Intervention: Mathematics (in schools) Screen use: General (mobile phone for language learning)	L	Н	H	И	L	L	L
	2022	Include: Longitudinal; Retrospective Include: randomised	None specified Exclude: Disabilities	2004– 2018 2011– 2016	All	•	ADHD Symptoms (Inattention)		Screen use: General Screen use: Reading	U	L	U	H	L	H	L
Comeras- Chueca	2021	(control group with no intervention or traditional	Exclude: Disabilities, diseases or disorders, overweight or obese	2008– 2019	All (4.5-11.6)	•	Rody composition: RMI	•	(vs paper) Video games: Physically active	L	U	L	U	L	Н	L
Comeras- Chueca	2021	exercise intervention) Include: randomized and non-randomized controlled with control group with no intervention or	disabilities, diseases or	2010– 2020	All (8.0-14.0)	•	Body composition: Fat- free mass		Video games: Physically active	L	L	L	U	L	н	L
Coyne Cunninghan	2018	Include: Quantitative	disorders other than obesity None specified None specified	1975– 2017 2014– 2018	Children; Adolescents All (11.2-16.8)	•	Body composition: Waist circumference		Screen use: Prosocial content Social Media: General (duration)	L	L	L	н	L	L	L
Cushing	2010	designs Include: All quantitative designs; Experimental Include: Intervention	None specified None specified	1989– 2009 2006– 2016	Children; Adolescents Children; Adolescents (8.7-16.0)	•	Healthy behavior: General Body composition Diet: Healthy dietary behaviour Physical activity:		Intervention: Health behaviours Intervention: To promote health (via mobile phone)	U	L	H	H	L	L	L
	2022	Include: experimental or observational Include: Quantitative designs	Exclude: Atypically developing Include: Healthy children	1978– 2021 2017– 2019	Children (0.5-11.0) Early childhood;	•	Psychological health:		Screen use: General	U	L	L	L	L	L	L
Ferguson	2017	designs None Include: Experimental,	children None specified	2019 2005– 2017 2009–	Pre-school Children; Adolescents	•	z-score Risky behavior: Sexual activity Risky behavior: Sexual activity (initiation of sex)	•	(meeting guidelines) Screen use: Sexual content Video games: Violent	U	L	L	Н	L	L	L
Folkvord	2018	correlational, or longitudinal Include: Interventions Include: experimental or	None specified None specified Exclude: Cochlear	2013 2007– 2018 2002–	(7.8-17.5) Children; Adolescents Early childhood; Pre-school; School-age	•	Diet: Food intake (calories) Literacy: Reading comprehension	•	Advertising: Advergames	U	L	L	U	L	L H	L
	2021	experimental or quasi- experimental		2002– 2019 2006– 2014		•	comprehension Literacy: Vocabulary learning		e-Books: General Internet use: Cyberbullying victimization	U	H	L	U	L	L	L
	2019	Include: Experimental with control group Include: Experimental; Quasi- experimental	None specified None specified	NA 2004– 2011	All School-age Children (Primary, Elementary, Middle		Learning: General		Intervention: Augmented reality (in schools) Intervention: Writing feedback	U	H	U	Н	H	L	L
Hammersle <u>'</u>	2016	experimental Include: Randomised controlled trials Include:	Exclude: Those with special needs, require a special diet, or have a condition that would limit physical activity	2003– 2013	Middle School) Children; Adolescents		Body composition		Intervention: To promote healthy weight (obesity prevention)	L	L	Н	L	L	Н	L
Hassan- Saleh	2021	Experimental with control group Include: Experimental; Quasi- experimental Include:	Exclude: Disabilities None specified	2012– 2018 2008– 2016	School-age Children; Children; Adolescents Children; Adolescents	•	language vocabulary Literacy: Pronunciation Physical activity:	•	Intervention: English as foreign language Intervention: Pronunciation Intervention: To promote physical	U	L	L U	L U	H	H H	L
Hernandez- Jimenez	2021	Randomised controlled trials Include: Experimental; Quasi- experimental	None specified None specified	2018 2009– 2017	Adolescents (9.9-16.6) Children; Adolescents Early childhood; Pre-school;		General Body composition		activity (via mobile phone) Video games: Physically active	U	L	Н	L	L	L	L
	2020	None Include: Correlational studies Include:	None specified None specified	1997– 2018 2012– 2019			Psychological health:		Intervention: Literacy videos Social Media: General	L U	L	H	H	L	L	L
Kates	2020 2018	Experimental; Cross-sectional; Longitudial None Include: experimental or	Include: Healthy children None specified None specified	2007– 2019 2008– 2016	Children School-age Children School-age Children (Early	•	Learning: General Learning: Literacy and numeracy	•	Screen use: General Screen use: General (mobile phone) Screen use:	UUU	L H	L	L H	H	U	L
Kim Kroesberge	2021	experimental or quasi- experimental Include: Within subject design; between subject design	None specified Include: Math difficulties	2018 1985– 1999	(Early Primary, Elementary) School-age Children (Primary, Elementary) (7.0-11.3) School-age	•	numeracy Literacy: General Numeracy: General Numeracy: General	•	Intervention: Mathematics (via computer in classrooms)	U	L	U	Н	L	Н	L
Kucukalkan Li	2019	Include: Experimental Include: Experimental; Quasi- experimental	Include: Dyscalculia None specified	2007– 2016 1991– 2005	School-age Children (Primary, Elementary) School-age Children	•	Numeracy: General Numeracy: General Developmental: Gross motor (locomotor)	•	Intervention: Mathematics Intervention: Mathematics	U	L	U L	U	H L	Н	L
	2022	Include: Randomised controlled trials Include: experimental or quasi- experimental	Include: Atypically developing None specified	2012– 2020 2014– 2021	Children; Adolescents	•	Developmental: Gross motor (non-locomotor) Developmental: Gross motor (object control skills)		Intervention: Active video games for motor skills Computer use: Programming exercises	L	Н	L	Н	L	H	L
	2008	•	None specified None specified	1990– 2003 1999– 2012	School-age Children (Primary, Elementary) Children; Adolescents (4.0-14.7)	•	Learning: General Body composition		Intervention: Education (via computer) Intervention: Screentime reduction	L	H	н	L	H	H	H
	2019	Include: All quantitative designs Include: studies with control group	None specified None specified	2007– 2014 NA	All (13.3-16.6)	•	Psychological health: Depression Psychological health: Satisfaction	•	Social Media: Instant messaging Video games: General Screen use: General	U	L	U	Н	L	L	L
	2021		Include: Healthy only	2014– 2018	Adolescents	•	Psychological health: Negative coping style Psychological health: Positive coping style	•	Screen use: General (mobile phone addiction) Intervention: Education (general) Screen use: General	U	L	U	L	L	L	L
Madigan	2020	Include: Observational Exclude: Qualitative	Exclude: Asd or intellectual disability	1973– 2019	Children (0.5-10.6)	•	Literacy: General	•		U	L	L	U	L	L	L
Мајог	2021	Include: Randomised controlled trials	None specified	2007– 2020	Children; Adolescents	•	Learning: General Cognition: Cognitive Functioning			U	L	L	Н	L	L	L
Mallawaara	2022	Include: Cross- sectional or longitudinal	Include: Non- clinical	2014– 2020	Early childhood; Pre-school (1.4-5.4)	•	Functioning Cognition: Executive Functioning Developmental: General Developmental: Language or speech Psychological health: Psychosocial factors Psychological health: Self-regulation	•	Screen use: General (mobile phone or tablet)	L	L	L	L	L	L	L
Mares	2005	None	None specified	1969– 1989	Children	•	Self-regulation Sleep: General Aggression: Towards peers Cognition: Reducing stereotypes Prosocial Behavior: Altruism Social interactions:	•	TV programs and movies: General	U	L	Н	Н	L	Н	Н
Mares	2013	None	None specified	1973– 2010	Children	•	Social interactions: General Cognition: Moral reasoning and perception of outgroups Learning: General Learning: Literacy and numeracy	•	Intervention: Sesame Street	U	Н	Н	Н	L	Н	L
	2022		None specified None specified	2001–15 1985– 2002	All (6.0-12.2) Children; Adolescents	•	numeracy Learning: Physical and social environment Body composition Body composition Physical activity:	•	Video games: General TV programs and movies: General Video games: General	U	L	Н	L H	L	L	L
	2019	Include: All quantitative designs Include: Cross- over or parallel randomized controlled trials	None specified None specified Exclude:	2003– 2018 2006– 2017	All Children; Adolescents	•	Aggression: Towards peers Diet: Food intake (calories)	•	Screen use: General TV programs and movies: Mealtime	U	L	U	H	L	L	L
	2022	Include: Randomised controlled trials Include: Randomised controlled trials and quasi-RCTs.	Exclude: Contraindictions to physical activity Intellectual and cognative impairments Include: Poor readers	2015– 2019 1994– 2009	All (10.3-17.8) All (6.7-16.2)		Physical activity: General		Intervention: To promote physical activity (via gamification) Intervention: Literacy (phonics; via computer)	L	L	L	L	L	L	L
	2018		Include: Poor readers None specified	1994– 2015 2004– 2018	Children; Adolescents Adolescents (13.5-16.8)	•	Literacy: General Sleep: Duration Sleep: Problems Sleep: Time to fall asleep		Intervention: Literacy Screen use: General (excessive)	L	L	L	L	L	L	L
Merchant	2014	Include:	None specified	NA	School-age Children	•	Learning: General	•	Screen use: Virtual reality simulations (Educational) Screen use: Virtual reality worlds (Educational) Video games: Virtual reality (Educational)	U	L	Н	Н	Н	Н	L
Neitzel	2022	Include: random assignment or quasi- experimental Include: Group-	Include: Poor readers Include: Both typically	2004– 2020	School-age Children (Primary, Elementary)	•	Literacy: Reading Cognition: Cognitive Functioning Cognition: Executive Functioning	•	reality (Educational) Intervention: Reading (technology supported)	U	L	н	Н	L	Н	Н
	2020	control experimental design	developing and atypically developing with neurodevelopmer disorder	2006– 2018 NA	School-age Children Children; Adolescents	•	Functioning Cognition: Verbal skills Cognition: Visuospatial skills Numeracy: General Psychological health: Adjustment Antisocial Behaviour:		Intervention: Cognitive training TV programs and movies: Violent	U	Н	U	н	Н	L	L
Pearce	2016	Include: All quantitative designs	None specified Include: Healthy	1986– 2012 2001–	Children; Adolescents Children; Adolescents Children;	•	Psychological health: Internalizing Cardiometabolic health: Maximum oxygen consumption	•	movies: Violent content TV programs and movies: Scary content Video games:	U	L	Н	Н	Н	L	L
-	2013	Include: Experimental or	-	2001– 2010 1985– 2012	Children; Adolescents All	•	Physical activity: Energy expenditure Physical activity: Heart rate Cognition: Information processing		Video games: Physically active Video games: General	U	L	U	Н	L	H	L
	2018	Include:	None specified Exclude: Neurological disorder	2008– 2017 2016– 2020	All (8.9-16.0) Children; Adolescents	•	Psychological health:	•	Video games: Violent content Intervention: To improve emotional regulation Intervention: To improve emotional regulation (via digital	И	L	U	H	L	L	L
Rocha	2019	Include: Experimental; Quasi- experimental Include:	None specified	1999– 2018 1978–	All (4.5-15.4) Children;	•	Diet: Fruit and vegetable intake Diet: Food intake (calories)		regulation (via digital games) Intervention: Fruit and vegetable	U	L	L	L	L	L	L
Sadeghirad Scherer	2016	Randomised controlled trials Include: Experimental or quasi- experimental designs	None specified Exclude: Clinical or special needs populations	1978– 2014 1973– 2017	Children; Adolescents (3.8-11.0) All (6.5-16.8)	•	Diet: Food intake (grams) Diet: Unhealthy food choice		Advertising: Unhealthy food Intervention: Education (programming)	H	Н	U	Н	L	L	L
Schroeder Scionti	2013	designs Include: Experimental; Quasi- experimental Include: Interventions	None specified None specified	2001– 2009 2009– 2019	All Children (4.3-6.1)		Cognition: Executive functioning	•	Intervention: With digital characters Intervention: Cognitive training Intervention: To	L	L	U	Н	L	L	L
	2019	Include: Interventions Include:	Include: No health conditions except obesity	2013– 2018	(12.0-15.7)	•	Body composition Diet: Sugary drinks Physical activity: General Screen time: General	•	promote health (via mobile phone app) Intervention: To promote health (via mobile phone) Intervention: To promote health (via text message)	U	L	L	L	L	Н	L
	2022		None specified None specified	2003– 2021 2000– 2011	Adolescents (10.4-18.0) School-age Children (Primary, Elementary) Early	•	Depression		Internet use: General Intervention: Science (in schools)	L U	Н	Н	Н	L	Н	Н
	2021	Include: experimental and quasi- experimental designs Include: Experimental;	Include: No developmental delay	1994– 2019 1980–	childhood; Pre-school; School-age Children (Early Primary, Elementary) (0.8-6.5)		Learning: General		Screen use: Video (vs face-to-face)	U	L	U	Н	Н	L	L
	2014	Experimental; Quasi- experimental Include: Randomised controlled trials	None specified None specified	1980– 2014 2001– 2016	All	•	Cognition: Executive Functioning (accuracy) Cognition: Executive Functioning (cognitive		e-Books: Narration Intervention: Education (via computer)	H	L	U	Н	L	L	L
		and quasi-RCTs.	None specified	2016 2010– 2015	All	•	Functioning (inhibition) Cognition: Executive Functioning (working memory)	•	•	U	Н	U	U	L	L	L
	2019	Include: desgins with a control group Include: Interventions (pre-post or controlled). Exclude: Cross-sectional	None specified None specified	2006– 2016 2015– 2016	School-age Children School-age Children (Middle/High School)	•	Mathematics Risky behavior: Media		Video games: Educational Intervention: Media literacy (web-based)	U	H	L	H	L	L	L
	2016	sectional Include: Prospective design Exclude: Qualitative;	None specified None specified	2005– 2015 2011– 2018	School-age Children (2.0-16.3)	•	Body composition Risky behavior: Risk taking (general)	•	Computer use: General TV programs and movies: General Social Media: General	U	L	L	L	L	H	L
Williams	1982	Case studies	None specified None specified Exclude: Disabilities	2018 1954– 1980 2005– 2012		•	sexual behaviour Risky behavior: Substance abuse Learning: General	•	TV programs and movies: General Video games: Educational	U	U	Н	U	L	H	H
Wouters	2013	designs Include: Experimental with control group Include: Experimental; Quasi- experimental;	None specified None specified	2012 1993– 2007 2010– 2018	All Children (1.8-5.9)	•	Learning: General		Video games: Educational (with instructional support) Intervention: Education (via touch screen)	U	H	U	Н	L	L	L
Xie	2018	Pre-test post- test Include: experimental,		2010– 2018 2006–	(1.8-5.9) Early childhood; Pre-school (1.8-5.8)	•	Learning: General Psychological health: General		· ·	U	L	U	Н	L	L	L
	2020	None specified Exclude: Non- empirical studies; Qualitative; Systematic reviews or meta- analyses	None specified None specified	2006– 2016 2009– 2018	All	•	General Psychological health: Positive mental health Healthy behavior: General Healthy behavior: Self- efficacy Psychological health: Enjoyment			U	H	U	н	L	L	L
¹ Items are fro	2009 om the ded	analyses Include: Randomised controlled trials; Quasi- experimental; Observational National Health, Lun		1997– 2006 's Quality Ass	School-age Children (Primary, Elementary) essment of Sys	•	Enjoyment Literacy: Decoding Literacy: Reading comprehension		e-Books: General es tool. Note that we exclud	L ed the fir	L rst item o	U of the too	H ol.	L	Н	L
³ Eligibility cri ⁴ Literature se ⁵ Dual indepe ⁶ Dual indepe	teria pr earch st ndent s ndent q dies list bias ass	essed		sults of each												