# Associations Between Exposures and Education Outcomes

| Outcome | Specific Outcome | Exposure | Lead Author, Date | r with 95% CI | I² | K | N | Indiv. Data | Eggers | Excess Signif. |
|---|---|---|---|---|---|---|---|---|---|---|
| Learning | General | Screen-based intervention: Sesame Street | Mares, 2013 | 0.14 [ 0.10, 0.19] | | 24 | 10,596 | ✗ | – | – |
| | Literacy and numeracy | Screen-based intervention: Sesame Street | Mares, 2013 | 0.14 [ 0.08, 0.20] | | 15 | 7,604 | ✗ | – | – |
| | Physical and social environment | Screen-based intervention: Sesame Street | Mares, 2013 | 0.17 [ 0.09, 0.24] | | 13 | 7,797 | ✗ | – | – |
| | Educational achievement problems | Internet use: Cyberbullying victimization | Gardella, 2017 | 0.15 [ 0.13, 0.17] | 0% | 7 | 7,768 | ✓ | ✗ | ✓ |
| | School attendance problems | Internet use: Cyberbullying victimization | Gardella, 2017 | 0.20 [ 0.18, 0.21] | 0% | 9 | 25,242 | ✓ | ✗ | ✓ |
| | General | Screen-based intervention: Education (via computer) | Liao, 2008 | 0.22 [ 0.15, 0.29] | | 48 | 5,121 | ✗ | – | – |
| | General | Screen use: General (mobile phone) | Kates, 2018 | -0.12 [-0.19, -0.05] | | 8 | 135,131 | ✗ | – | – |
| Literacy | General | TV programs and movies: General (in background) | Madigan, 2020 | -0.19 [-0.31, -0.06] | 70% | 5 | 2,792 | ✓ | ✗ | ✓ |
| | General | Screen-based intervention: Literacy | McArthur, 2018 | 0.22 [ 0.11, 0.33] | 0% | 6 | 294 | ✓ | ✗ | ✓ |
| | Phonics | Screen-based intervention: Literacy (phonics; via computer) | McArthur, 2012 | 0.15 [-0.02, 0.33] | 0% | 4 | 124 | ✓ | ✗ | ✓ |
| | Decoding | e-Books: General | Zucker, 2009 | 0.09 [-0.10, 0.28] | 0% | 2 | 109 | ✓ | ✗ | ✓ |
| | Reading comprehension | e-Books: General | Zucker, 2009 | 0.23 [ 0.10, 0.35] | 44% | 7 | 401 | ✓ | ✗ | ✓ |
| | Listening comprehension | Screen-based intervention: Literacy (Abracadabra; in schools) | Abrami, 2015 | 0.09 [-0.06, 0.23] | 82% | 7 | 1,171 | ✗ | – | – |
| | Phonics | Screen-based intervention: Literacy (Abracadabra; in schools) | Abrami, 2015 | 0.09 [ 0.04, 0.15] | 0% | 19 | 1,238 | ✗ | – | – |
| | Phonemic awareness | Screen-based intervention: Literacy (Abracadabra; in schools) | Abrami, 2015 | 0.16 [ 0.11, 0.21] | 0% | 20 | 1,753 | ✗ | – | – |
| | Reading comprehension | Screen-based intervention: Literacy (Abracadabra; in schools) | Abrami, 2015 | 0.03 [-0.03, 0.09] | 0% | 6 | 1,045 | ✗ | – | – |
| | Reading fluency | Screen-based intervention: Literacy (Abracadabra; in schools) | Abrami, 2015 | 0.04 [-0.06, 0.14] | 74% | 6 | 1,725 | ✗ | – | – |
| | Vocabulary knowledge | Screen-based intervention: Literacy (Abracadabra; in schools) | Abrami, 2015 | 0.05 [-0.04, 0.14] | 50% | 15 | 1,167 | ✗ | – | – |
| | Writing | Screen-based intervention: Writing feedback | Graham, 2015 | 0.19 [ 0.08, 0.28] | 0% | 4 | 463 | ✗ | – | – |
| | General | Screen-based intervention: Literacy videos | Hurwitz, 2018 | 0.10 [ 0.07, 0.13] | 0% | 783 | 24,624 | ✗ | – | – |
| | Reading | Screen-based intervention: Reading (in schools) | Cheung, 2012 | 0.08 [ 0.06, 0.10] | 78% | 84 | 60,553 | ✗ | – | – |
| | Reading fluency | Screen-based intervention: Literacy | Blok, 2002 | 0.13 [ 0.07, 0.18] | 62% | 50 | 1,121 | ✗ | – | – |
| | General | TV programs and movies: General | Adelantado-Renau, 2019 | -0.12 [-0.15, -0.09] | 54% | 8 | 16,761 | ✓ | ✗ | ✓ |
| | General | TV programs and movies: Coviewing | Madigan, 2020 | 0.11 [ 0.01, 0.20] | | 9 | 3,376 | ✗ | – | – |
| Numeracy | General | Screen-based intervention: Mathematics (via computer in classrooms) | Kroesbergen, 2003 | 0.29 [ 0.23, 0.36] | 0% | 11 | 848 | ✓ | ✓ | ✓ |
| | General | Screen-based intervention: Mathematics (in schools) | Cheung, 2013 | 0.08 [ 0.06, 0.10] | 72% | 73 | 56,891 | ✓ | ✗ | ✓ |
| | General | Screen-based intervention: Dynamic geometry software | Chan, 2014 | 0.43 [ 0.29, 0.57] | 92% | 9 | 1,174 | ✓ | ✗ | ✓ |
| | General | TV programs and movies: General | Adelantado-Renau, 2019 | -0.12 [-0.18, -0.07] | 78% | 7 | 14,115 | ✓ | ✗ | ✓ |
| | General | Screen-based intervention: Cognitive training | Oldrati, 2020 | 0.17 [ 0.04, 0.30] | 68% | 11 | 693 | ✓ | ✓ | ✓ |
| Science | General | Screen-based intervention: Science (in schools) | Slavin, 2014 | 0.21 [ 0.15, 0.26] | | 6 | 2,384 | ✗ | – | – |

r with 95% and 99.9% CIs

Note:
**Indiv. Data:** Individual study data available for reanalysis.
**Eggers:** P > 0.05 for Egger's test of asymmetry, or too few studies to analyse (K < 10).
**Excess Signif.:** P > 0.05 for test for excess significance.