COMMUNITY PERSPECTIVES ON EDUCATIONAL TECHNOLOGY IN ROCKFORD PUBLIC SCHOOLS

Evidence for Prioritizing Textbook-Based Instruction

Abstract

The rapid adoption of 1:1 digital devices in K-12 classrooms has coincided with concerns about cognitive development, attention, and academic outcomes. This paper reviews the history and research on educational technology, examines recent policy reversals in Sweden, Finland, and Denmark, and presents results from a survey of 87 Rockford Public Schools parents, teachers, and residents. Findings show strong community support for prioritizing textbook-based instruction and limiting routine device use, especially in early grades. The paper recommends restoring printed textbooks as the core delivery method while treating technology as a targeted supplement only.

Joshua Hall

Candidate for Trustee, Rockford Public Schools Board of Education

Introduction

There exists a growing concern among parents, educators, and researchers regarding the effect of the integration of digital devices and educational technology (EdTech) into K-12 classrooms on school-age-children's cognitive development, attention, and foundational academic skills.[1] Proponents of EdTech use have long argued that devices prepare students for the digital world and personalize learning; however, this routine high-volume device use as the primary mode of content delivery coincides with stagnant or declining performance on standardized assessments, shortened attention spans, and increased reports of distraction.[2] These issues are particularly acute for children whose brains are still developing executive functions such as sustained attention, working memory, and inhibitory control.[3]

Academic research, recent progressive educational policy shifts in leading nations, and direct community input from Rockford Public Schools stakeholders demonstrate that textbook-based instruction should be prioritized as the core method of educational content delivery, with routine digital device use limited, particularly in the early grades.

EdTech History and Concerns

Initial Advocacy

Advocates of large-scale one-to-one (1:1) device programs (ensuring a school-owned device is personally dedicated to an individual student's use) promised transformative educational outcomes. Proponents argued that providing every student with a personal laptop, tablet, or Chromebook would enable personalized learning at each

---

[1]Jared Cooney Horvath, "Written testimony on the impact of technology on youth," *United States Senate Committee on Commerce, Science, and Transportation,* January, 2026, https://www.commerce.senate.gov/services/files/A19DF2E8-3C69-4193-A676-430CF0C83DC2, 1.

[2] Ibid.

[3] Csongor Toth, et al., "Associations Between Screen Time, Sleep, and Executive Function in School-Aged Children and Adolescents: The Moderating Role of Digital Content and Age." *Journal of Clinical Medicine 14,* no. 3 (2025), https://pmc.ncbi.nlm.nih.gov/articles/PMC12733803/, 2, 14.

child's pace, close achievement gaps for low-income and rural students, increase engagement and collaboration, and prepare the next generation for 21st-century jobs in a digital economy.[4] Federal initiatives such as the Obama administration's ConnectED program explicitly promised to connect 99% of U.S. students to high-speed internet and modern devices, with the expectation that this infrastructure would raise test scores, foster creativity, and make education more equitable and efficient.[5] Schools were told that going paperless and giving students "anytime, anywhere" access to digital textbooks, interactive content, and global resources would revolutionize teaching and learning.[6]

Big Tech

It is impossible to view the subject of EdTech without recognizing the ulterior motives and vested interests of large technology companies. Major of these, particularly Apple, Google, and Microsoft, actively lobbied Congress, federal agencies, and education organizations to accelerate the adoption of 1:1 devices and digital platforms in public schools.

Between 2005 and 2018 alone, Amazon, Apple, Facebook, Google, and Microsoft collectively spent more than $582 million on federal lobbying, much of it focused on education technology policy, broadband funding, and procurement rules favorable to their products.[7] Google positioned its Chromebooks and Google Workspace for Education as essential tools while internally viewing school deployments as a "pipeline of future users".[8]

---

[4] Elizabeth Heubeck, "What We've Learned From a Quarter Century of 1-to-1 Computing," *Education Week,* May 17, 2022, https://www.edweek.org/technology/what-weve-learned-from-a-quarter-century-of-1-to-1-computing/2022/05; Karla Ann Tarkington, "Impact Of One-To-One Technology on High School Students' Act." Student Theses and Dissertations: 20, 2021, https://arch.astate.edu/cgi/viewcontent.cgi?article=1318&context=all-etd, 21.

[5] The White House, "ConnectEd: Realizing the promise of digital learning," The Obama White House, December 15, 2016, https://obamawhitehouse.archives.gov/sites/default/files/docs/fact-sheet_connected_realizing-the-promise-of-digital-learning.pdf.

[6] Heubeck.

[7] vpnMentor, "Big tech lobbying report: How Amazon, Apple, Facebook, Google, and Microsoft spent $582 million influencing U.S. policy," vpnMentor, no date, https://www.vpnmentor.com/research/us-lobby-report/.

[8] Tyler Kingkade, "Google's work in schools aims to create a 'pipeline of future users,' internal documents say," NBC News, January 23, 2026, https://www.nbcnews.com/tech/social-media/google-schools-aims-pipeline-future-users-internal-documents-rcna255175.

Through the ConnectED initiative, Apple pledged $100 million in devices and training, Microsoft offered discounted software and services to nearly all U.S. K-12 districts, and Google aggressively marketed Chromebooks, which came to dominate more than half of the U.S. K-12 device market by the late 2010s.[9]

Device Deployment Worldwide

Nationally, 1:1 device initiatives in U.S. public schools expanded dramatically in the 2010s, driven by the combination of federal grants, state-level technology mandates, and the aggressive industry advocacy described above. By the late 2010s, millions of students had received personal Chromebooks or tablets, and this trend became near-universal during the COVID-19 pandemic when remote and hybrid learning required full digital delivery.[10]

Similarly, 1:1 or high-device-ratio policies were adopted globally in the 2010s, with countries such as Uruguay, Australia, and parts of Scandinavia positioning digital tools as central to 21st-century education.[11] These countries were the pioneers of EdTech 1:1 deployment and have had the most experience and data with their respective programs' use and effectiveness.

Local Deployment

Rockford Public Schools (RPS) mirrored national trends by launching technology pilot programs in the 2015-16 school year, testing Chromebooks and other devices across every building to guide the use of $15 million in voter-approved bond funding for district-wide technology modernization.[12] These pilots established the foundation for routine

---

[9] Tina Nazerian, "Microsoft's Many EDU Updates—and a Window of Opportunity to Win K-12 Market Share," EdSurge. January 22, 2018, https://www.edsurge.com/news/2018-01-22-microsoft-s-many-edu-updates-and-a-window-of-opportunity-to-win-k-12-market-share.

[10] Tarkington, 35.

[11] Valiente; Jayson W. Richardson, et al., "Large-scale 1:1 computing initiatives: An open access database," *International Journal of Education and Development using Information and Communication Technology 9,* no. 1: 4-18, https://files.eric.ed.gov/fulltext/EJ1071344.pdf, 5, 13.

[12] Monica Scott, "Rockford technology pilot programs guide use of $15M bond." M Live, June 11, 2015, https://www.mlive.com/news/grand-rapids/2015/06/rockford_teachers_roll_out_mul.html.

device issuance that was already in place well before the COVID-19 pandemic. The subsequent 2019 bond further supported scheduled technology purchases and device refreshes.[13]

Concerns Arise

But as device use became more and more ubiquitous in our everyday lives, concerns arose about our use of them. Excessive screen time, whether recreational or educational, has been consistently linked in recent research to reduced executive function, shorter attention spans, poorer sleep quality, and impaired cognitive development in children.[14]

Multitasking, constant notifications, and rapid digital switching further impair sustained attention and deep memory formation. Multiple studies show that paper-based reading and handwritten notetaking consistently outperform digital equivalents for comprehension and long-term retention.[15] Salmerón, et al. notes "preliminary evidence suggests that students tend to read on digital devices in a shallower way than with paper."[16]

In RPS, these broader patterns were already evident well before the COVID-19 pandemic. As previously mentioned, the district had implemented a 1:1 Chromebook program in the mid-2010s, and my own elementary-age children received district-issued devices along with digital handouts rather than physical textbooks as early as third grade upon moving to the district.[17] The pandemic dramatically accelerated full digital dependence, normalizing device-centric instruction that had already begun. Local residents described routine Chromebook issuance, heavy reliance on Schoology as the primary learning management system, and the near total replacement of printed textbooks

---

[13] Kent County Clerk, "Candidates and Proposals – May 7, 2019," Kent County Candidates and Proposals, February 20, 2019, https://www.kentcountymi.gov/DocumentCenter/View/322/CandidatesProposalsPDF.

[14] Toth, 2.

[15] Horvath, 5.

[16] "Relation between digital tool practices in the language arts classroom and reading comprehension scores." *Reading and Writing 36,* no. 1: 175-194. https://pmc.ncbi.nlm.nih.gov/articles/PMC9076497/pdf/11145_2022_Article_10295.pdf, 176.

[17] Scott; Kent County Clerk.

with digital materials even in the earliest grades.[18] Faculty, partially motivated by concern the devices themselves have become a major source of distraction rather than a focused learning aid have begun a pilot program of LanSchool, an EdTech ad-on application to combat some of these negative effects and keep students on task while using their digital devices in the classroom.[19]

Academic Research

When digital devices move beyond occasional supplements and become the primary mode of content delivery, the promised benefits of personalization and engagement largely fail to materialize, while risks of distraction and shallow processing increase significantly.[20]

A growing body of rigorous research has reinforced these concerns. A 2024 Campbell Systematic Review study of randomized controlled trials found that mobile device use in primary classrooms produces only small, highly context-dependent effects on literacy and numeracy, frequently near-zero, or slightly negative when devices replace traditional instruction.[21] Complementary 2023-2025 studies on screen time and executive function document consistent small-to-moderate negative associations with attention, working memory, and inhibitory control, particularly among younger children exposed to high-volume or recreational content.[22]

These findings have prompted significant policy reversals in those aforementioned countries once at the forefront of digital education. Sweden has committed over €100 million (approximately $117 million USD) to restore physical textbooks, paper, and

---

[18] Joshua D. Hall, "Educational Technology Survey," The Committee to Elect Josh Hall, April 22, 2026, https://votejoshhall.com/survey.

[19] Richard Clark, Principal of Rockford High School, Personal discussion with author, March 27, 2026.

[20] Horvath, 5; Salmerón et al., 176.

[21] Claire Dorris, et al., "A systematic review of mobile device use in the primary school classroom and impact on pupil literacy and numeracy attainment: A systematic review." *Campbell Systematic Reviews 20,* no. 2: 1-52, https://pmc.ncbi.nlm.nih.gov/articles/PMC11190352/pdf/CL2-20-e1417.pdf, 1.

[22] Toth, 2, 14; Caroline Fitzpatrick, et al., "Associations Between Preschooler Screen Time Trajectories and Executive Function," *Academic Pediatrics 25,* no. 2, https://www.academicpedsjnl.net/action/showPdf?pii=S1876-2859%2824%2900548-5, 3.

handwriting, especially in early grades; pre-schools are no longer required to use digital tools, tablets are banned for children under two, and a new textbook-based curriculum will launch in 2028.[23] Denmark has rolled back to paper-and-pen learning while banning mobile phones in schools, and parts of Finland have implemented parallel restrictions to protect focus and literacy.[24]

Results

On January 15, 2026, Dr. Jared Cooney Horvath, a neuroscientist, former classroom teacher and Director of LME Global (an organization specializing in human learning and brain development), gave testimony before the U.S. Senate Committee on Commerce, Science, and Transportation.[25] Dr. Horvath presented compelling evidence that the widespread adoption of educational technology and routine classroom digital device use has contributed to a historic reversal in cognitive development among school-age children.[26]

He argued that today's Generation Z is the first in modern history to underperform previous generations across key measures of literacy, numeracy, attention, and higher-order reasoning, despite decades of increased educational spending and expanded technology access. Drawing on international assessments (Programme for International Student Assessment, Trends in International Mathematics and Science Study, Progress in International Reading Literacy Study), Dr. Horvath demonstrated a dose-response pattern:

---

[23] Joshua Cohen, "Sweden goes back to basics, swapping screens for books in the classroom," Ars Technica, April 1, 2026, https://arstechnica.com/science/2026/04/sweden-goes-back-to-basics-swapping-screens-for-books-in-the-classroom/; Maddy Savage, "Back to books - Sweden's schools cutting back on digital learning," BBC, April 16, 2026, https://www.bbc.com/news/articles/cly0vk77vdko; Sweden Ministry of Education and Research, "Government investing in more reading time and less screen time," February 8, 2024, https://www.government.se/articles/2024/02/government-investing-in-more-reading-time-and-less-screen-time/.

[24] Anne Mailliet, et al., "Back to textbooks: Denmark rolls back digital learning," France 24, January 6, 2026, https://www.france24.com/en/tv-shows/focus/20260106-back-to-textbooks-denmark-rolls-back-digital-learning; Elviira Luoma, and Anne Kauranen, "Books in, screens out: some Finnish pupils go back to paper after tech push," Reuters, September 10, 2024, https://www.reuters.com/world/europe/books-screens-out-some-finnish-pupils-go-back-paper-after-tech-push-2024-09-10/.

[25] Learning and the Brain, "Education Speakers," Learning and the Brain, n.d., https://www.learningandthebrain.com/education-speakers/Jared-Horvath; Horvath, 1.

[26] Horvath.

greater classroom screen time correlates with weaker academic outcomes, reduced depth of understanding, and diminished retention.[27] He further cited large-scale meta-analyses showing that most forms of routine EdTech underperform traditional classroom instruction, attributing the mismatch to fundamental differences between how human brains learn and how digital platforms are designed to capture and fragment attention.[28]

Community Survey on Educational Technology

Already being quite skeptical of EdTech's cost/benefit ratio, Dr. Horvath's testimony convinced me of a need to evaluate if RPS is on the right course on the issue of EdTech. And to ground my policy recommendations in local stakeholder perspectives rather than only my own anecdotes and national trends, I designed and distributed an online survey targeting RPS parents, teachers, and community members. The survey was open from March 13 to April 21, 2026, and closed with 87 responses.

Results

The results demonstrate a clear and consistent community preference for substantially reduced routine reliance on digital devices. 59% of respondents indicated they "completely support" or "somewhat support" a "policy that prioritizes traditional textbook-based learning over digital instruction" (Figure 1.).[29]

[27] Ibid.
[28] Ibid.
[29] Hall.

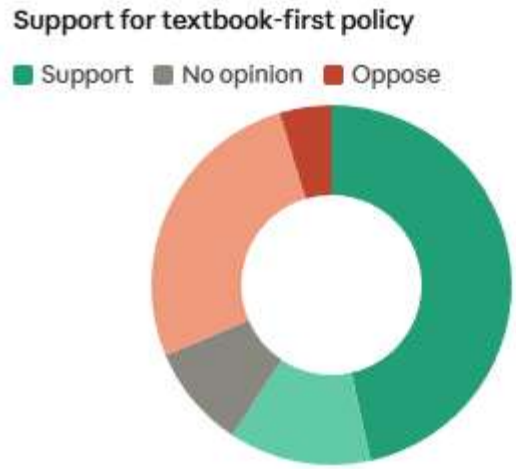

Figure 1

A full 91% of respondents stated that they wished for "digital devices [to] be incorporated into the curriculum" in a "Minimal" (49%) or "Moderate" (41%) manner (Figure 2.).

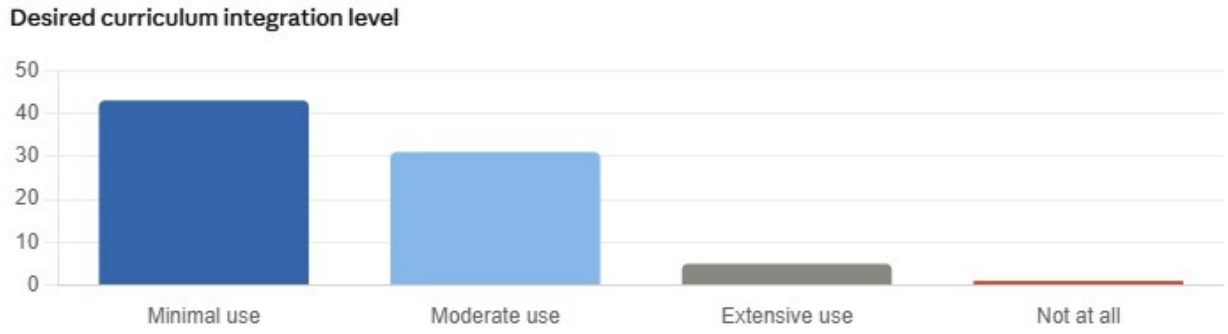

Figure 2

A clear plurality of respondents believe digital devices should not be introduced until the 4th-6th grade level (Figure 3.).

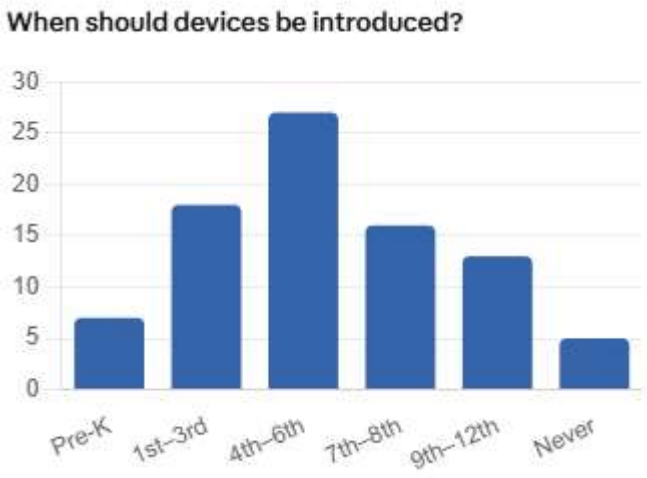

Figure 3

Mixed Results and Survey Issues

I am not a data scientist, pollster, or surveyor generally, but I do know how to be self-critical, evaluate good versus bad data, and incorporate constructive criticism into analysis. As such, there were some questions that provided little informational value, misleading results, or demonstrated a wide and evenly distributed range of opinions. For example, community opinion on the cognitive impact of EdTech was either equally distributed or the question, “How would you rate the impact of educational technology on students' cognitive skills in K-12 education?”, not precise enough to present any consensus (Figure 4, Hall). The question “How confident are you in the current educational technology policies in Rockford Public Schools?” was a poor one in that there is no formalized EdTech policy in RPS, nor was the practice of RPS as a matter of informal policy declared within the question. And thank you to the commenter on Facebook who alerted me to this deficiency. Therefore, the question acted more as a barometer of satisfaction/dissatisfaction of RPS as a whole (Figure 5.).

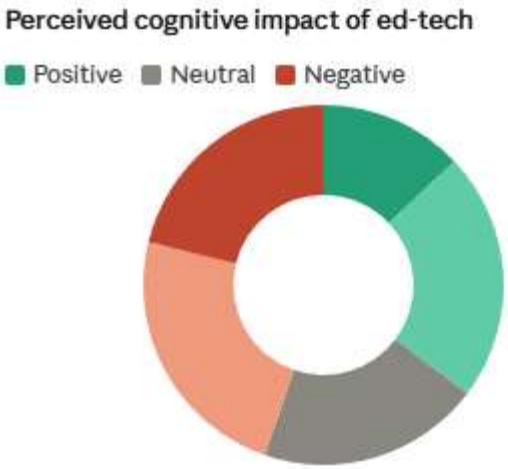

Figure 4

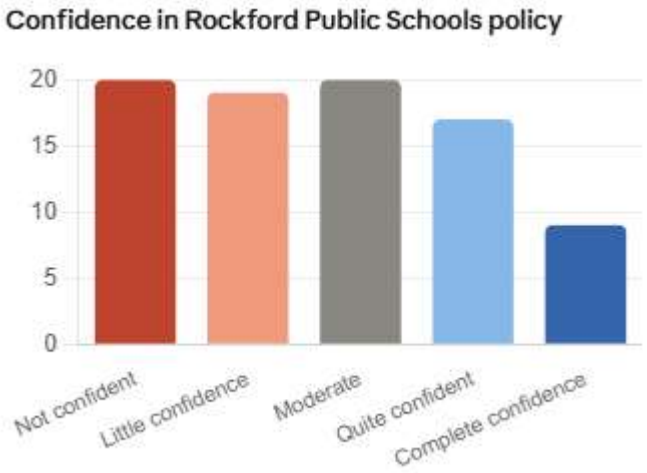

Figure 5

The top concerns about classroom technology (and this was a question whose merits were also critiqued as the critic claimed it steered the user to respond in a negative fashion) were “Increased screen time” and “Lack of traditional skills” both at 62% of respondents (Figure 6.).

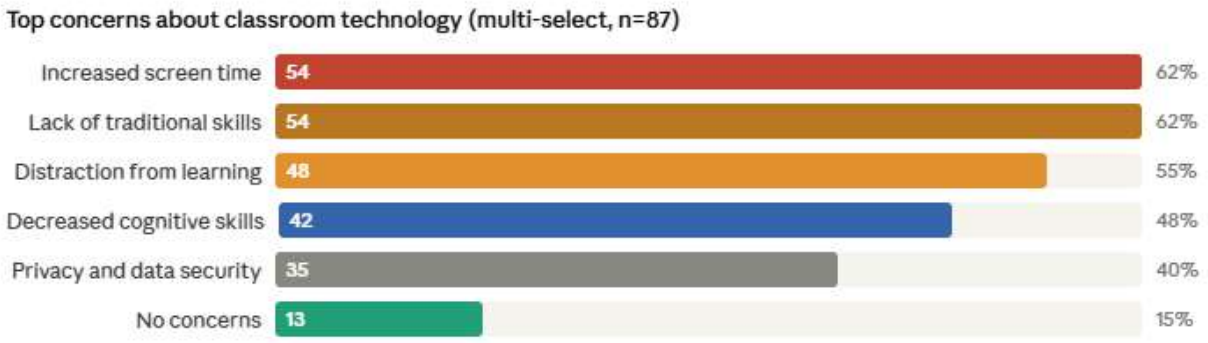

Figure 6

The open-ended questions prompted 56 responses. These were roughly split into three camps. 55% lean toward reducing or removing EdTech, particularly in early grades. About 25% land in a pragmatic middle: they are fine with technology but want it supervised, purposeful, and supplementary rather than the primary mode of instruction. Only about 20% are pro-technology as a priority. Below are a few more notable take-aways from the open ended questions:

- The age-gating theme was almost universal, even among respondents who were not opposed to EdTech overall. Very few people thought current introduction should start earlier while disagreement was more about how late to delay… not whether to delay.
- There were quite a few platform complaints (Schoology, Skyward, Hardware quality). Quite a few parents feel disconnected from their children's curriculum, an experience I relate to personally.
- Two respondents provided personal cases where EdTech is critical in providing educational equivalencies due to their children's special needs.
- One educator's comment stands out: they argued classroom tech use is already minimal (under 45 minutes/day at their school) and the real driver of declining attention spans is cumulative home screen exposure.

A very hearty thanks to all 87 members of our community who participated in this survey. Your feedback is vital to continuing to build my own policy positions. This survey in

its entirety, with certain portions of the open-ended questions redacted for privacy, can be found on a link at my website https://votejoshhall.com/survey.

Recommendations

Given the change of direction in the traditionally forward and progressive public educational systems of countries like Sweden, Finland, and Denmark, who have reversed course from reliance on EdTech in response to the developing academic research and declining educational outcomes; and the desires of the community, I present three policy proposals. These proposals do not seek to eliminate EdTech. Devices remain valuable as targeted supplements once foundational skills are solidly established through traditional methods. Just as there are wise exceptions carved out of personal wireless device use restrictions in classrooms, I am for similarly wise policy exceptions carved out for EdTech utilization.

Transition to Textbook-Based Curriculum as the Core Foundation Across all Grades.

The Board of Education should adopt and enforce a formal policy designating printed textbooks and teacher-led instruction as the primary delivery method for core academic content in all subjects and grades. Digital resources would be restricted to reinforcement, remedial, supplemental, or individually documented exception cases only.

Forbid Routine Issuance of Digital Devices to Children in 3rd Grade or Below

Given the substantial body of evidence showing at best minimal academic gains, and in most cases neutral or negative effects, from routine 1:1 device use in the early elementary grades, the Board of Education should adopt and enforce a formal policy prohibiting the routine issuance and daily classroom use of district-provided digital devices for students in grades 3 and below.

Establish an Educational Technology Evaluation Committee

The Board of Education should create an Educational Technology Committee comprised of classroom teachers, district school parents, curriculum specialists, and administrators. This committee shall meet regularly – at least every other month – in open public sessions to solicit and respond to community input.

Its primary initial task will be to evaluate the non-routine use and appropriateness of 1:1 devices for students in grades 3 and below in light of current and emerging research, and parent concerns. Ongoing responsibilities will include monitoring continued academic research on device use in education, reviewing district practices, and presenting evidence-based and community-developed recommendations to the full Board.

Phased Implementation

These proposals would be implemented in a phased, deliberate manner. A curriculum review task force should report back to the Board within 90–120 days with a detailed transition plan. Budgetary resources should be realigned from recurring device refreshes and software license renewals toward the purchase and distribution of printed textbooks.

Conclusion

Academic research, recent international policy reversals in traditionally high-performing nations, and direct input from 87 RPS stakeholders agree: textbook-based instruction should be restored as the core delivery method, with routine digital device use limited… especially in the early elementary years. This approach protects developing brains, restores parental oversight, rebuilds foundational skills, and ensures technology serves as a genuine supplement rather than a default substitute.

As a candidate for the Rockford Public Schools Board of Education, I am committed to advancing these changes. I invite parents, teachers, administrators, and community

members to join this effort. Together, we can provide Rockford students with the focused, deep-learning foundation they deserve.

References

Cohen, Joshua. 2026. "Sweden goes back to basics, swapping screens for books in the classroom." *Ars Technica*. April 1. Accessed April 22, 2026. https://arstechnica.com/science/2026/04/sweden-goes-back-to-basics-swapping-screens-for-books-in-the-classroom/.

Dorris, Claire, Karen Winter, Liam O'Hare, and Edda Tandi Lwoga. "A systematic review of mobile device use in the primary school classroom and impact on pupil literacy and numeracy attainment: A systematic review." *Campbell Systematic Reviews* 20, no. 2 (2024): 1-52. https://pmc.ncbi.nlm.nih.gov/articles/PMC11190352/pdf/CL2-20-e1417.pdf.

Fitzpatrick, Caroline, Elena Florit, Annie Lemieux, Gabrielle Garon-Carrier, and Lucia Mason. "Associations Between Preschooler Screen Time Trajectories and Executive Function." *Academic Pediatrics* 25, no. 2. https://www.academicpedsjnl.net/action/showPdf?pii=S1876-2859%2824%2900548-5.

Hall, Joshua D. 2026. "Education Technology Survey." The Committee to Elect Josh Hall, April 23, 2026. https://votejoshhall.com/survey.

Heubeck, Elizabeth. 2022. "What We've Learned From a Quarter Century of 1-to-1 Computing." *Education Week,* May 17, 2022. https://www.edweek.org/technology/what-weve-learned-from-a-quarter-century-of-1-to-1-computing/2022/05.

Horvath, Jared Cooney. "Written testimony on the impact of technology on youth." *United States Senate Committee on Commerce, Science, and Transportation,* January, 2026. https://www.commerce.senate.gov/services/files/A19DF2E8-3C69-4193-A676-430CF0C83DC2.

Kent County Clerk. "Candidates and Proposals - May 7, 2019." Kent County Clerk Candidates and Proposals, February 20, 2019. https://www.kentcountymi.gov/DocumentCenter/View/322/CandidatesProposals-PDF.

Kingkade, Tyler. "Google's work in schools aims to create a 'pipeline of." *NBC News,* January 23, 2026. https://www.nbcnews.com/tech/social-media/google-schools-aims-pipeline-future-users-internal-documents-rcna255175.

Learning and the Brain. "Education Speakers." Learning and the Brain, accessed April 22, 2026. https://www.learningandthebrain.com/education-speakers/Jared-Horvath.

Luoma, Elviira, and Anne Kauranen. "Books in, screens out: some Finnish pupils go back to paper after tech push." *Reuters,* September 10, 2024. https://www.reuters.com/world/europe/books-screens-out-some-finnish-pupils-go-back-paper-after-tech-push-2024-09-10/.

Mailliet, Anne, Willy Mahler, and Nick Holdsworth. "Back to textbooks: Denmark rolls back digital learning." *France 24,* January 6, 2026. https://www.france24.com/en/tv-shows/focus/20260106-back-to-textbooks-denmark-rolls-back-digital-learning.

Nazerian, Tina. "Microsoft's Many EDU Updates—and a Window of Opportunity to Win K-12 Market Share." *EdSurge,* January 22, 2018. https://www.edsurge.com/news/2018-01-22-microsoft-s-many-edu-updates-and-a-window-of-opportunity-to-win-k-12-market-share.

Organisation for Economic Co-operation and Development. "PISA 2022 results (Volume I): The state of learning and equity in education." *OECD Publishing,* December 5, 2023. https://www.oecd.org/en/publications/pisa-2022-results-volume-i_53f23881-en.html.

Richardson, Jayson W., Scott McLeod, Kevin Flora, Nick J. Sauers, Sathiamoorthy Kannan, and Mehmet Sincar. "Large-scale 1:1 computing initiatives: An open access database." *International Journal of Education and Development using Information*

and Communication Technology 9, no. 1 (2013): 4-18. https://files.eric.ed.gov/fulltext/EJ1071344.pdf.

Salmerón, Ladislao, Cristina Vargas, Pablo Delgado, and Naomi Baron. "Relation between digital tool practices in the language arts classroom and reading comprehension scores." *Reading and Writing* 36, no. 1 (2023): 175-194. https://pubmed.ncbi.nlm.nih.gov/35571994/.

Savage, Maddy. "Back to books - Sweden's schools cutting back on digital learning." *BBC,* April 16, 2026. https://www.bbc.com/news/articles/cly0vk77vdko.

Scott, Monica. "Rockford technology pilot programs guide use of $15M bond." *M Live,* June 11, 2015. https://www.mlive.com/news/grand-rapids/2015/06/rockford_teachers_roll_out_mul.html.

Sweden Ministry of Education and Research. Government investing in more reading time and less screen time. Government of Sweden, February 8, 2024. https://www.government.se/articles/2024/02/government-investing-in-more-reading-time-and-less-screen-time/.

Tarkington, Karla Ann. "Impact Of One-To-One Technology on High School Students' Act." *Student Theses and Dissertations,* 2021. https://arch.astate.edu/cgi/viewcontent.cgi?article=1318&context=all-etd.

The White House. "ConnectED: Realizing the promise of digital learning:." The Obama White House, December 15, 2016. https://obamawhitehouse.archives.gov/sites/default/files/docs/fact-sheet_connected_realizing-the-promise-of-digital-learning.pdf.

Toth, Csongor, Brigitte Osser, Laura Ioana Bondar, Roland Fazakas, Florin Mihai Marcu, Nicoleta Anamaria Pascalau, Ramona Nicoleta Suciu, and Bombonica Gabriela Dogaru. "Associations Between Screen Time, Sleep, and Executive Function in School-Aged Children and Adolescents: The Moderating Role of Digital Content and

Age." *Journal of Clinical Medicine* 14, no. 3 (2025). https://pmc.ncbi.nlm.nih.gov/articles/PMC12733803/.

Valiente, Oscar. "1-1 in education: Current practice, international comparative research, and." *OECD Publishing,* March, 2010. https://www.oecd.org/content/dam/oecd/en/publications/reports/2010/03/1-1-in-education_g17a1e15/5kmjzwfl9vr2-en.pdf.

vpnMentor. "Big tech lobbying report: How Amazon, Apple, Facebook, Google, and Microsoft spent $582 million influencing U.S. policy." vpnMentor, accessed April 22, 2026. https://www.vpnmentor.com/research/us-lobby-report/.