

Crowdsourcing Efficacy Research and Product Reviews

Prepared by Working Group J

TOPIC DESCRIPTION

The *EdSurge Product Index* currently lists more than two thousand different education technology products and services. Many of these educational technology programs, systems, tools, games, and apps belong to product categories that did not exist even a decade ago. Many schools (K-12 and Higher Ed) feel completely overwhelmed by this abundance of choice, and have no reliable way to determine which products have been proven effective, which are most likely to be a good fit for their local needs.

As a result, it appears that educators and administrators collectively spend countless hours needlessly duplicating efforts. They and their institutions engage in a similar process: They search on the web, read what they can find, or talk to a colleague. They identify a few candidate solutions, and perhaps, but not necessarily, do a pilot. Then they implement an educational technology product or service, without ever documenting or sharing the results of their efforts with anyone outside their institutions.

Working Group J explored this problem as well as potential solutions. Working Group J seeks to discover what efforts may be underway around the country to *aggregate and share educational technology product reviews, analysis of pilots, and efficacy research*.

WORKING GROUP LEADERS

Bart Epstein

Founding CEO; Research Associate Professor
Jefferson Education Accelerator; University of Virginia, Curry School of Education

Chris Rush

Co-Founder and Chief Program Officer; Pahara-Aspen Education Fellow
New Classrooms Innovation Partners; Aspen Institute

RESEARCH LEAD

David Slykhuis

Professor; James Madison University
President; Society for Information Technology and Teacher Education

LOGISTICS LEAD

Madeline Clements

Central Initiatives Associate; New Classrooms

WORKING GROUP MEMBERS

Betsy Corcoran

Co-founder and CEO; EdSurge

George Kane

General Manager; Education Ventures; Emerson Collective

Harold Levy

Executive Director; Jack Kent Cooke Foundation

Jennifer Medbery

Founder & CEO; Kickboard

John Bailey

Vice President of Policy and Executive Director; Digital Learning Now

Matt Greenfield

Managing Partner; Rethink Education

Michael Feldstein

Partner; MindWires Consulting

Michael Nagler

Superintendent; Mineola School District (NY)

Nick White

Chair; WCET Steering Committee, WICHE Cooperative for Educational Technologies

Nicole Neal

CEO; Noodle Markets

Rahim Rajan

Senior Program Officer, Postsecondary Success; Bill & Melinda Gates Foundation

Rebecca Griffiths

Senior Researcher; Center for Technology in Learning, SRI International

Richard Culatta

CEO; International Society for Technology in Education

Steve Fleischman

CEO; Education Northwest

PURPOSE OF THE RESEARCH

The educational technology landscape is exceedingly complex and crowded. Approximately 13 billion dollars are spent annually on the purchase of educational technology (Future Source, 2017). Decision makers (e.g. policy makers, practitioners, private and public funders) often seek to identify the most effective products and often struggle to determine the right tools for their institutions' needs. Before purchasing and implementing an educational product, educators may search users' comments and feedback and discuss with individuals about their experiences, but they rarely share their efforts with other institutions. The primary goal of this project is to discover efforts that may be underway around the country to aggregate educational technology product reviews and efficacy research, analyze pilots, and to share the results. An additional goal is to start a conversation about what is missing from the current landscape and what should be considered that can support more informed decision-making by those spending billions on educational technologies.

BACKGROUND AND LITERATURE REVIEW

What is Crowdsourcing?

“Crowdsourcing is the act of taking a job traditionally performed by a designated agent (usually an employee) and outsourcing it to an undefined, generally large group of people in the form of an open call” (Howe 2010, p.1). To find an optimal educational technology solution, crowdsourcing could be effective. Crowdsourcing is an efficient allocation of resources dealing with changing problems and, over the last decade, online crowdsourcing platforms have become more technologically advanced, powerful, and easier to use. According to Surowiecki (2005):

“The crowd is almost always collectively wiser than an individual expert, provided four conditions hold: diversity (each person adds private information or bias), independence (people form their opinions), decentralization (people draw on their own specialized knowledge) and aggregation (a mechanism exists to turn private judgments into a collective decision)” (p.5).

Wikipedia, as an online crowdsourced education repository, is an obvious example. Wikipedia is a large-scale, highly diverse and multilingual crowdsourcing platform which “aggregates the crowd’s edits and keep track of all changes” (Boudreau & Lakhani, 2013, pg.44). Peer review of Wikipedia pages contributes to users’ confidence in the quality and reliability of the content. This peer review is an advantage for Wikipedia being perceived as a valuable source of crowdsourced works (Weld, Adar, Chilton, Hoffmann, Horvitz, Koch, Landay & Lin, 2012; Al-Jumeily, Hussain, Alghamdi, Dobbins & Lunn, 2015).

RESEARCH QUESTIONS

The study research questions are following:

RQ1: Are any companies or organizations crowdsourcing educational technology product reviews and efficacy research that is readily available to the public?

RQ2: Are any State DOEs collecting educational technology product reviews and efficacy research and making these resources readily available to their state constituents?

RQ3: Is there a need for a system to be developed from crowdsourced educational technology product reviews and efficacy research to guide purchasing decisions?

Conceptual Framework

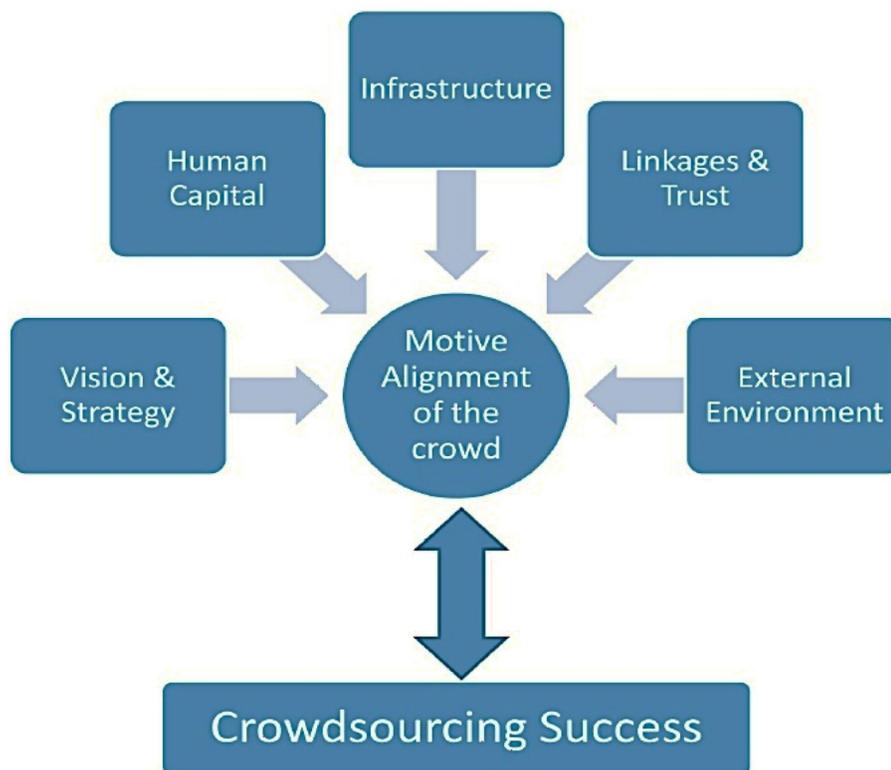


Figure 1: *Crowdsourcing Critical Success Factor Model (Adapted from Sharma A., 2010)*

The above chart was adapted from a crowdsourcing critical success factor model written by Sharma (2010) identifying motive alignment as the central idea and divided the Six Peripheral Factor Models of Crowdsourcing Success. These indicators present crowdsourcing from a new approach and provide an overview of the fundamental considerations to be kept in mind while implementing a crowdsourcing initiative. Crowdsourcing's ability to set ideals, goals, and objectives when collecting information for the *Vision* is a valuable component of business strategy. The coherence of the initiative's vision and strategy not only guarantees crowd participation, but also leads to support of governments, corporate, and other stakeholders. *Human Capital* refers to common characteristics, skills, and abilities of the crowd. It is necessary to develop proper skills, abilities, and expertise to empower meaningful participation of the crowd in the crowdsourcing. Abundant, reliable, and ease of access for its communication refers to *Infrastructure* and ensures that the crowd participates. *Linkages* support in gathering valuable and relevant resources to develop and improve the initiative. Linkages also help in pooling the best practices and innovative business models to make crowdsourcing manageable and efficient. *Trust* is another critical factor of Crowdsourcing Critical Success Model since crowdsourcing initiatives all involve a time or information cost for the crowd. *External Environment* refers to "macroeconomic environment comprising of the governance support, business environment, economic environment, living environment and risk profiles which are important determinants of the success of the crowdsourcing initiative" (p. 14). Finally, *Motive Alignment of the Crowd* is the most important factor of the model. "The motives of the crowd are aligned to long term objectives of the crowdsourcing initiative as it ensures their participation" (p.14).

CURRENT STUDY

To better understand the applicability of crowdsourcing, leaders from educational technology companies, experts from state departments of education, and the United States Department of Education (US DOE) Office of Educational Technology were interviewed to gather information related to product reviews and efficacy research. Selected model systems of aggregated educational technology reviews and research were examined to comprehend the full complexity of all sides. In parallel, two interview protocols were designed, one to evaluate the experience of highly rated educational technology companies/organizations compiling reviews and research, the other to address the experience of officials from different state departments of education and the US DOE Office of Educational Technology regarding crowdsourcing contributions to different fields.

METHODOLOGY & PARTICIPANTS

The first goal of the project was to identify all companies or organizations that were involved in any way with the crowdsourcing of reviews or research related to

educational technology. To this end, a survey (see Appendix A) was developed asking respondents to identify any company or organization they knew of that might be doing work related to this topic. This survey was distributed by the working group to various email lists, sent to personal contacts, and shared via social media. The results identified over 40 companies or organizations active in this space. The working group then ranked and evaluated the 40 companies and organizations. This led to the identification of 14 as the leaders in the field.

The target population for in-depth interviews was from the 14 identified leading educational technology companies aggregating reviews, research, and experts from state departments of education who were identified from State Educational Technology Directors Association (SETDA) list of state DOE contacts. The participants in these interviews were 5 leaders from educational technology companies, chosen on convenience to get an overview of the field and provide a basis for what information needed to be gathered when reviewing all 14 organizations. Additionally, state DOE experts from 46 of the 50 states were interviewed on their efforts and interest around crowdsourcing. See Appendix B for a list of questions used for both groups.

The third phase of the study involved a more thorough examination of each of the 14 leading aggregators of crowdsourced reviews and research of educational technology. These reviews attempted to identify the type of information being crowdsourced, who was providing the reviews or research, how much information had been collected and how much it was being used as well as the business model of the company or organization. Appendix C contains the questions sought to be answered in each review.

PRELIMINARY FINDINGS & INSIGHTS

Educational Technology Companies Leaders Interview Results

In response to the interviews, leaders from the crowdsourcing organizations reported that the majority of their users are K-12 teachers along with some school leaders, public officials, entrepreneurs, and state, regional, and local governments. These organizations' focus mainly on providing guidance on privacy and security of data- contracts and acceptable use for K-12 public officials, offering instructional materials, helping solve practical challenges related to procurement, and giving access to discipline specific technology for faculty. Several of the respondents spoke to the quickly changing needs of the users as a challenge. These changes require frequent and costly changes to the platform for continued relevance.

In the open-ended interview questions, leaders from crowdsourcing organizations voiced a number of concerns regarding aggregating of information. Some were concerned with methods they can use to collect quality feedback and comments about educational technology products. The leaders stated that the time spent on motivating publishers, teachers, educators, and public officials to provide comments and feedback is a substantial challenge. It is difficult to provide meaningful incentives for feedback motivating stakeholders to provide reviews and feedback. Some leaders from

crowdsourcing organizations mentioned that verification is an important factor in order to ensure the product users are educators. The verification methods include asking for a school email address, verifying the user by checking their LinkedIn page, and/or asking for the educational institution name. The verification allows users to use the tools at no cost and legally, and to read product reviews from those who have purchased the product. While the reviews underline the product advantages and disadvantages, those reports typically don't extend past the initial implementation of the product to include an analysis of the actual educational effectiveness of the product based on usage.

State Department of Education Educational Technology Experts Interview Result

The interviews with the state DOE educational technology experts addressed information regarding educational technology products reviews and efficacy research (see Appendix B). Forty-six of 50 states participated in the interview. As shown in Figure 2 only six percent of states indicated collecting any product reviews, and only two percent are collecting any research (Figure 3). A majority of state DOE experts reported that states do not help to collect and share a crowdsourced review of educational technology products (60%). The interviews also indicated they do not help to gather and share crowdsourced efficacy research of educational technology products (64%). Although the state DOE experts do not aggregate information about products, they collect some minimal information to help schools with technology purchasing. One of the state DOE experts reported: “At some point, we aggregate information about some technology products from most local educational technology companies and districts, but not at a crowdsourced level.”

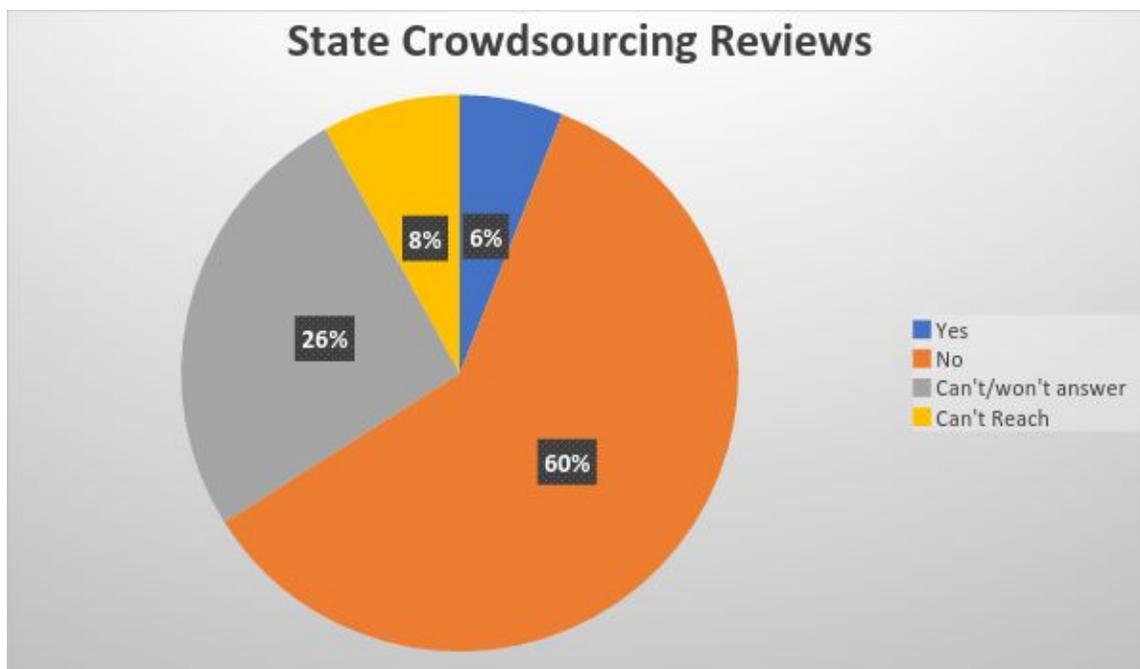


Figure 2: *State Crowdsourcing of Educational Technology Reviews*

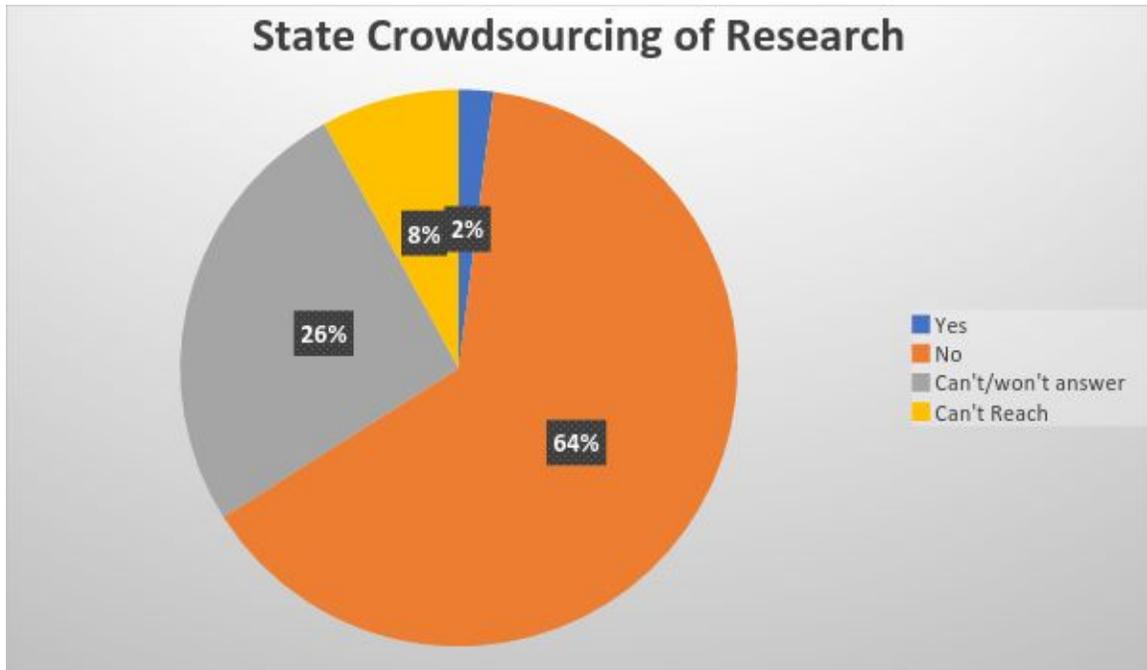


Figure 3. *State Crowdsourcing of Educational Technology Research*

Forty-four percent of the states indicated they do not assist the districts with educational technology product purchasing, because purchasing and procurement are usually controlled locally (Figure 4). Generally, they indicated that the Department of Education provides information to the field about where districts could access specific product information. One state expert stated: “Concern around one product coming up higher on recommendations than another creates ethical issues. Department of Education cannot recommend products without going through a longer review process.” On the other hand, some states help districts to negotiate the price of educational technology products, and sometimes districts get state discounts on their purchase. One of the interviewees said: “Our state helps districts to find the best prices, to have a contract with educational technology companies, sometimes recommend them particular educational technology based on their school requirement.” Many interviewees expressed that the idea of organizing implementation analysis and feedback to support decision-making is one that they hope “somebody” will take on.

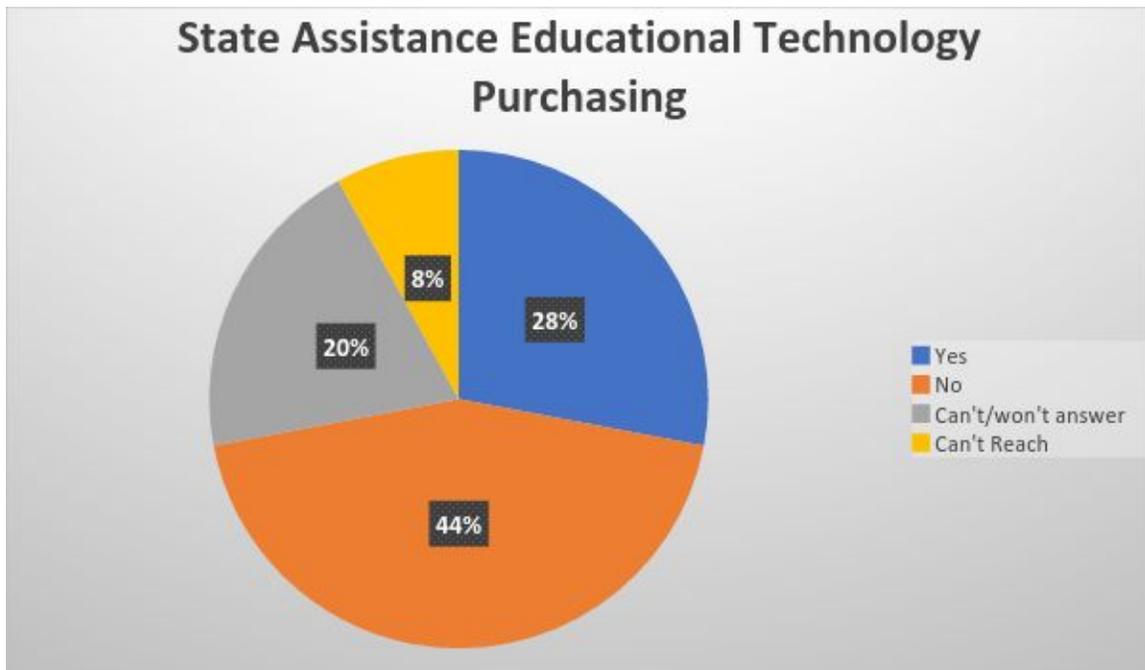


Figure 4: *States Assist with Educational Technology Purchasing*

Although states reported they neither help to collect and share a crowdsourced review of educational technology products (60%) nor efficacy research (64%), some states felt that to collect and share reviews and research is important. A state in the upper Midwest reported that they decided to pursue a grant to build Statewide Longitudinal Data Systems (SLDS) which help the successful design, development, implementation, and expansion of K-12 data systems. Educational technology product reviews will be part of the collected data systems through this grant. This aggregated system is necessary to make better decisions.

“SLDS is a free application that is accessed via a link in the district’s Student Information System. SLDS provides districts, schools, and teachers with access to historical data, including Assessments, Attendance, Enrollment, Courses, and Grades beginning with the 2006-2007 school year.” (Statewide Longitudinal Data Systems, 2015, pg.1).

A Mid-Atlantic state reported they designed a pilot test to collect information from educational technology users. “The purpose of this experimental pilot test was to understand the needs of districts collectively and serve better to districts as a department of education.” One Midwest state said it aggregates information through a survey system.

The SLDS grant project, experimental pilot test, and survey system show some states are interested in sharing information to serve the districts in a better way; however, none of these examples are truly crowdsourced. As Figure 4 shows, 20% of the states showed interest to participate in the crowdsourcing of product reviews and efficacy research of

educational technology products, 40% of the respondents were not interested. The reason for lack of interest is some states do not want to be involved with any purchases as that is the purview of the local schools agencies. One of the respondents reported: "Our state would be interested in having as a seat at the table and being part of the conversation, but would not want to be seen as endorsing anything or as interfering with local control."

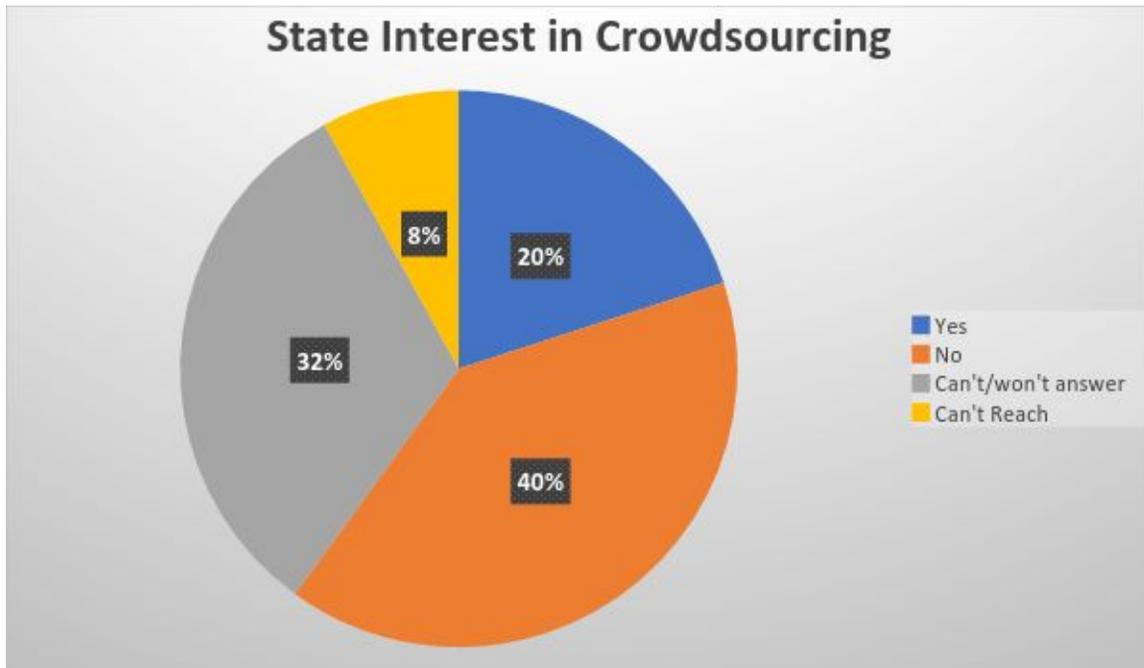


Figure 5: *States Interested in Participating in the Crowdsourcing of Product Reviews and Efficacy Research of Educational Technology Products*

Crowdsourcing Companies and Organizations

The next step in the research project involved a deep dive into each of the identified leaders of crowdsourced reviews or research. One group of these leaders was focused very clearly on building massive libraries of educational technology resources and reviews. App Ed Review, Common Sense, EdShelf, EdSurge Product Index, Educational App Store, Learn Platform, and Teachers with Apps all at least partially fall in this domain. Each of these built a large database of educational technology products and collects ratings on a one to five-star scale. How the reviews are collected varies from organization to organization. Some allow any user to review, and some allow only the creation of their own reviews. The details for each organization can be found in the research briefs in Appendix D.

Another group of organizations focuses solely on research aggregation. The Digital Promise research map, Digital Learning Research Network (dLRN), and SRI ALMAP all fall into this category. These organizations and efforts go well beyond star reviews to

determine the effectiveness of educational technology by taking a deep dive into research. These efforts, however, are intentional and are not crowdsourcing research results. In the case of the Digital Promise research map, it is a collection of over 100,000 articles categorized and cross-referenced to allow users to find the most relevant research on topics such as educational technology. SRI ALMAP and dLRN are focused on creating their own research projects and answering specific questions around educational technology. Both of these are examples of the role of private philanthropy to “prove” efficacy and the dearth of direct investment by either suppliers of educational technology tools or amongst practitioners and educational institutions themselves. All of these organizations openly share either the full research studies or their findings.

Two projects take aim at creating more research around the efficacy of educational technology. One is the Educational Technology Pilot Framework by Digital Promise. This tool lays out 8 steps, each with resources, to complete a pilot test of technology use in a school. The Framework is meant to expedite the process of determining the efficacy of educational technology products, and the eighth and final step is to Summarize and Share the data to support other schools in their decision making. However, there is no formal mechanism for gathering, evaluating, and disseminating reviews. The other project is the Educational Technology Rapid Cycle Evaluation Coach, sponsored by the US DOE Office of Educational Technology in partnership with Mathematica and SRI. The Educational Technology RCE takes users through five steps to evaluate the effectiveness of educational technology in their local environment and provides resources and professional development materials to build local evaluation capacity. Both efforts are attempts to generate data and results about the efficacy of educational technology out faster, instead of the several years often associated with educational research studies.

Four of the organizations examined were focused on some aspect of educational technology purchasing, EdSurge Concierge Service, Learn Trials, Noodle Markets, and the Technology of Education Consortium. Currently, Noodle Markets and the Technology for Education Consortium are focused on bringing transparency to the pricing of educational technology in an effort to help schools save money. Learn Trials and the EdSurge Concierge service help a school district analyze their technology needs and then use a database of educational technology products, including reviews, to present school districts with options to best fit their needs. Both Noodle Markets and the Technology for Education Consortium have plans for including reviews of educational technology in the future.

One of the reviewed organizations is unique in their focus. EdReports provides very detailed evaluations, not of educational technology, but instead of curriculum series especially for mathematics and English/Language Arts. These curriculum series may include technology based resources, but that is not the focus of their reviews.

IMPLICATIONS

The Technology for Education Consortium estimates school districts spent \$13.2 billion on educational technology in 2015. For perspective, if this spending were a federal

program, it would be the third largest expenditure behind Pell Grants and Title I. They estimate schools could save \$3 billion simply by receiving consistent pricing on educational technology products. This estimate does not even begin to include the billions of dollars spent on educational technology that is not used or does not produce the intended outcomes. If schools have the tools to find the most appropriate educational technology at the right price it could revolutionize the educational technology market.

Many of the tools schools need to make the decisions are available, but simply are not in one place. Many of the organizations reviewed provide access to massive databases of educational technology products, others are doing detailed research on the efficacy of the educational technology, and others are trying to level the pricing playing field for schools. Unfortunately, no one is doing all of these things, and much of the existing analysis is surface-level.

This research has revealed this to be a difficult problem to solve all at once, as is often the case in educational settings. Here are just a few of the barriers to be overcome:

- Reviews - To get large numbers of reviews, the reviews become simpler, often “one-to-five star” reviews. To get higher quality reviews, the reviews become more like case studies and the numbers submitted vastly decrease. How can larger numbers of reviewers be incentivized to submit large numbers of high quality in-depth reviews? If users are incentivized to submit high quality in-depth reviews, how can this effort be sustained? Many of the current models depend on philanthropic funding which may not be a long-term solution unless someone can demonstrate a scalable model that extracts sufficient return on philanthropy dollars to make the effort worthwhile.
- Fit - A particular educational technology may do an excellent job of filling a need in a large urban school district in the northeast, and be a poor fit for a small rural school district in the southwest. How can schools make decisions on the efficacy of educational technology that includes appropriate demographic measures?
- Metrics - When trying to determine the efficacy of an educational technology, what is the right measure or metric? Are we trying to measure “usability” or “impact on learners”? The field’s inability to center around a set of shared metrics by which to judge and measure efficacy or change/improvement is a critical gap. Getting to that sort of alignment as a sector is by no means simple but it’s hard to imagine a center of gravity emerging in this space without some sort of agreement of what we’re measuring or how we precisely define “good,” “effective,” “impactful,” etc.
- Implementation- As with all things education, there are so many variables to be considered for generalizability. For anything in the classroom, the largest variable is the teacher. How can the reviews and efficacy research control for the wide variety of teachers in the classroom? For the use of technology in the classroom, another variable is professional development, or the lack thereof. The support prior to and during the implementation of the technology are critical to the success of implementation and must be accounted for.
- Research - Up to this point, high quality research studies, such as those by dLRN, cost millions of dollars to complete. While these are thorough, they take a great

deal of time and money to complete and technology has sometimes changed by the time the results are public. In addition, these studies are often published in academic journals that are not readily accessible to those purchasing educational technology products.

- The Little Red Hen – As in the children’s fable, everyone would like to benefit from crowdsourced reviews and efficacy research, but few of them want to write detailed reviews or perform research and meta-analysis. More specifically, everybody wishes somebody would give people incentives to document everything they are learning; gather reports, sort and analyze them; and create decision-support tools. But it doesn’t make any sense for an individual institution to do this. For example, once a district has spent 3 months learning about algebra tools, learned things the hard way, made choices and bought something, there’s “nothing in it” for that district to have their people document everything they’ve learned in order to share it.

REVISITING THE FRAMEWORK

This study has attempted to help define the *Vision and Strategy* needed to support a robust system of crowdsourced product reviews and efficacy research. Looking back at the conceptual framework presented above, it comes as no surprise that the current system(s) are failing to provide educators with the information they seek about educational technology.

- The *Human Capital* is certainly available -- many of the organizations reviewed have tens of thousands of users. But the vast majority of these users are not currently incentivized to provide the type of in-depth feedback or analysis that would benefit many other users – in part because no organization has developed a business model that allows for the payments presumably necessary to encourage a subset of educators into documenting their experiences in a sufficiently robust manner and common format. It is unclear whether any such business model could even be developed by a for-profit company that would presumably need to charge users for access to curated data.
- The *Infrastructure* is currently fragmented -- many organizations have pieces of a complete or ideal system, but no organization has all the elements. In addition, the data from the various platforms is largely disconnected and in different formats. This makes it more difficult for anyone to perform meta-analysis to look for broader trends and to turn large datasets into more actionable intelligence.
- Some of the necessary *Linkages* do appear to exist between users and organizations. Educators of all types are clearly willing to provide some amount of feedback, though academic researchers are only tangentially engaged at present. Users do not appear to *Trust* that their time and effort will result in either substantial compensation, recognition, or other positive outcomes.
- Many *External Environment* factors, such as philanthropic funding, appear interested to support crowdsourcing product reviews and efficacy research efforts.
- Sitting in the middle of the model is the most critical factor, *Motive Alignment of*

the Crowd. The vast majority of educators and administrators are making clear by their actions that they are willing to donate a few minutes of their time to write “one-to-five star” reviews -- but are unwilling to do much more without compensation. Efforts to date to collect more robust feedback and analysis appears to be high quality but understandably narrow in scope. In addition, the more robust feedback and analysis performed to date has often been performed in-house by various organizations. This makes it easier to control and standardize, but contributes to a lack of depth and breadth that would support a broad set of users operating in disparate environments.

PRELIMINARY RECOMMENDATIONS & OPEN QUESTIONS

Large (and growing) numbers of “one-to-five star” ratings are available to educators and administrators through various platforms. These ratings appear to play an important role in helping educators and administrators discover and consider educational technology products. Because these ratings are so brief, however, they appear to be of limited value for at least three reasons. First, because they contain little or no information about the context of each reviewer and the conditions in his/her school. Second, because they contain virtually no information about the fidelity of implementation. Third, because they rarely contain information about outcome measures or other impact.

There is a clear hunger among stakeholders for more detailed information about how products are implemented in various environments. Educators and administrators nationwide report that it would be wonderful if others would take the time to write up detailed reviews and analysis of their education technology implementations in a way that would help others understand whether a particular product is likely to succeed if implemented in their own school.

This type of analysis, however, often takes months to properly gather, and then days or weeks to properly document. Everyone wants these reports, as well as relevant meta-analysis to support more informed decision-making to exist, but the structural and collective action problems discussed above remain as barriers. From a behavioral economics perspective, individual educational institutions have no incentive to invest huge amounts of time and money into developing a system to gather implementation analysis and reviews. Or to develop a common framework and processes to make collected data friendly to the type of academic meta-analysis needed to large amounts of data into actionable intelligence.

A silver lining of this problem is that multiple stakeholders we interviewed made clear that they do not have the time, expertise, or organizational bandwidth to lead the creation of a nationwide program to collect, analyze, and disseminate *detailed implementation analysis* from those serving on the front lines of our nation’s schools, almost every stakeholder we interviewed stated strong support for the creation of such a program. Indeed, we heard repeatedly that many would be eager participate in such a program if it is well-run, academically rigorous, and creates actionable intelligence to

support better education technology decision-making.

A key component of creating such a system will almost certainly need to include substantial financial incentives for the front-line educators and administrators who have the information that so many others seek. The job titles of these people may vary from institution to institution but we collectively know who these people are. They are the ones quietly volunteering to do the extra work necessary to research and explore the marketplace to figure out which products are likely to best support their students. These people invest substantial hours doing brute force research and analysis by talking to their peers across the country, attending product demonstrations, attending conferences, piloting products, reading trade journals, overseeing implementations, taking feedback from their peers, and sometimes even looking at outcome measures. These people generally turn themselves into experts the hard way and we hypothesize that in many cases, providing them with stipends or fellowships could provide sufficient incentive for them to document their processes and findings. In some cases, however, we hypothesize that non-monetary support, such as the provision of a support person to assist with documentation and writing, could be of even greater value.

We also hypothesize that these people need a well-designed and easy to use system to help them document their product exploration journeys and to report on their institutions' demographics, as well as to report on factors that may impact their institutions' fidelity of implementation.

Related, it appears that we need new scholarship to explore what are the factors that may account for the variability of success of a product from one institution to another. We hypothesize that traditionally tracked variables such as the percentage of Title 1 students and the percentage of ELL students are important but likely represent only a small fraction of the explanation of why a product succeeds in one school but not in another. "Somebody" needs to explore the roles of other factors that may prove quite difficult to define and track, such as:

- The involvement level of educators who are expected to use the product – whether the product was something they wanted and collectively decided to advocate for, or it was selected by an administrator and its usage was mandated by fiat.
- Whether there was a robust pilot of the product.
- Whether clear expectations were set.
- The quantity of initial training provided upon implementation.
- How much technical and program support was provided.
- The experience level and track record of the person overseeing the entire implementation.
- Whether the institution has a recent track record of successfully implementing products of similar complexity.

There are likely many other potential variables that need to be considered, and exploring those variables before documenting them is likely to be an important component of developing a system that can provide truly actionable intelligence to educators and administrators who want to know whether a product that worked someplace else is

likely to be a good fit in their own institution.

It is unclear at this point how to put all of the work being completed in the area under a single umbrella or into a common framework. What would the cost be? Who would fund such an effort? Could it be self-sustaining when completed? What would the roles be for the existing players? Could the creation of a new layer of more detailed implementation analysis be made available to all existing players in exchange for them agreeing to participate in a common framework and/or to share their own data? These questions all need further exploration.

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Appendix A- Survey Questions to find Crowdsourcing Examples

Please list any statewide, multi-institution, or industry association efforts to share EdTech product reviews or efficacy research that you know of.

Please list any academic scholarship that summarizes and/or analyzes EdTech product reviews or efficacy research that you know of.

Please list any public websites that may collect and display consumer and/or third party product comparisons, in the style of Yelp or Consumer Reports that you know of.

Please list any venture capital, private equity, or other private company efforts to aggregate EdTech product reviews and/or efficacy research that you know of.

Please list any aggregations of efficacy research evaluations (such as the ones often required for grants, i.e. i3, RTT, NSF, etc.) that you know of.

Please list any organizations that either ASPIRE to participate in an EdTech research / product review crowdsourcing effort, are PLANNING such an effort, or may be interested in FUNDING such an effort that you know of.

Any final thoughts, ideas, comments, or questions go here. Thanks!

Appendix B – Interview Questions for Sample Leaders in the Field

1. Why did you develop your system?

a. Whose idea was it to create the system?

2. Whose input was taken to develop the system?

a. Did you look at other systems as a model in creating yours?

What were they?

3. What information does your system aggregate? Reviews? Research? Both?

4. Who makes decisions about what is included and excluded?

5. Who inputs the information? What is their incentive?

6. Who are the main users of the system? What problem does it solve for them?

7. What decisions are made with the information?

8. Are there changes you would make to the system now that you have been using it?
9. How long did it take to set up from idea to action?
10. How much does it cost to run the system each year in terms of dollars and people?
11. Who funds the system?
12. How do you know if the system is working?
13. Do you know of any other systems?

Interview Questions for States Department of Education

1. Is your state helping to collect and share crowdsourced reviews of educational technology products?
2. Is your state helping to collect and share crowdsourced efficacy research of educational technology products?
3. Does your state help districts with educational technology purchasing in any way?
4. Would your state be interested in participating in the crowdsourcing of product reviews and efficacy research of educational technology products?
5. Do you know of anyone in public or private sector collecting and sharing crowdsourced reviews and/or efficacy research of educational technology products?

Appendix C Review of Leading Companies

Product Name

Review format (Stars → Research):

- Describe the reviews collected
- The user experience for viewing the results

Review Criteria:

- How is the review being done?
- What factors are considered?
- What information is collected (demographics)?
- Any research backing?

Reviewers:

- Who is completing the reviews?
- What information is collected about them?
- What information are they submitting?

- What are the incentives for completing reviews?

Database:

- How much information has been collected?
- How robust are the reviews?
- How much is the database used?
- How do items get added?

Business Model:

- What services do they provide?
- Who is the target audience?
- What do they charge?

Organization:

- What is the actual structure- For profit, non-profit?
- Funding sources
- How long in business

Observations:

- My notes

What's Next:

- What are their goals?
- How does product review fit in their organization and future plans?

Appendix D-



App Ed Review

Review format (Stars → Research): Reviews contain an original description of the app, instructional ideas for using the app, and scores across three dimensions (instruction, design, and engagement). An overall score of 1-10 is displayed which is the average over the three dimension scores which are also displayed. The three dimension scores are an average of the stars given on each subscale multiplied by two as the subscales are 1-5. Apps are searchable according to content area, grade level, price, and resource type.

Review Criteria: Apps apply to be reviewed and included in the library. Only mobile apps are reviewed. Student learning apps are evaluated with a 24 point rubric with eight dimensions in instruction, nine dimensions in design, and seven dimensions in engagement. Teacher resource apps are evaluated with a 20-point rubric with three subscales, efficiency, functionality, and design. Apps are rated on a scale of 1-5 stars in

each of the sub scales. The rubric design process and application has been published in peer reviewed journals. No usage data is collected.

Reviewers: The reviews are completed by the AppEd Review team only. Brief bios of the AppEd staff are available on the website. No data is collected or shared on usage of the apps and/or implementation results. Apps pay an application fee to be reviewed and included in the library.

Database: Around 1,000 apps have been reviewed. Most reviews are written by the co-Founder Dr. Todd Cherner who also edits all the reviews written by team members. The reviews are open to any to use. Apps are added to the library by app developers applying to have their app reviewed.

Business Model: When an app developer applies to have their app reviewed, they must pay a \$20 non-refundable payment. AppEd Review also provided professional development on the use of mobile devices and apps. Pricing for the professional development is not publicly available.

Organization: AppEd Review prior to 2014 was sustained through small grants. After 2015, they relaunched with the help of the Conway Innovation Center business incubator.

Observations: Nothing is dated on the site past 2016. Three to five apps are added per week.

What's Next: Besides the reviews and professional development AppEd Review has blogs and a round up to help teachers and others stay current. App Review is their primary focus with a goal of making it sustainable and sharing the results through the website and professional development. App Ed Review is also publishing scholarship around their efforts.



Common Sense Education

Review format (Stars → Research): Reviews are found for over 2,500 products (apps and applications). Reviews include a review by Common Sense as well as Teacher Reviews. The overall rating is given on a scale of one to five stars. The review also shows the Common Sense Review score on three subscales, engagement, pedagogy, and support, also on a one to five star scale. The Common Sense Rating includes narrative on 'How can teachers use it?', 'What's it like?', and 'Is it good for learning?'. A one sentence Pro, Con, and Bottom line review are given for each product. Teacher reviews aggregated into an overall score. Individual teacher reviews can be viewed giving star ratings on the three subscales as well as narrative for 'how I use it' and 'my take'.

Review Criteria: The Common Sense Reviews are completed by an individual and then reviewed by the Common Sense editorial staff. The Common Sense review is completed using a research-backed 15 point rubric. Only the scores on the three dimensions (engagement, pedagogy, and support) and the overall score are reported. The 15 point rubric is not publically available. No information is collected about the context or demographics where the tool is used.

Reviewers: The individual completing the Common Sense Review is an independent contractor with Common Sense. Reviewer's names and very brief bio are publically available. Any teacher with a free account can contribute a review. Some teacher reviews are completed by Common Sense Certified teachers (Completed, with evidence, digital citizenship training and instruction in their own classroom). Reviews by both the Common Sense Reviewer and teachers require star ratings as well as some narrative description.

Database: Over 2,500 products are in the review library. Each review is a full page of information with star ratings and narrative. Common sense as over 300,000 registered educators and 62 million users. Anyone can request a product for review or a refresh of review already in the database.

Business Model: All reviews and ratings are free to use. The target audience is for the ratings and reviews to be used by K-12 teachers. They have two other audiences, parents and advocates, but they are not the target for the reviews and ratings. They charge for services and products related to digital citizenship, lesson plans, activities, professional development, etc.

Organization: They are a non-profit organization. Roughly 1/3 of the budget is from grants, 1/3 from fees for services, and 1/3 from contributions and gifts. Common Sense started in 2003.

Observations: Very user friendly.

What's Next: Their mission is to help children thrive in the age of media and technology. They try to accomplish this goal by providing resources for parents, educators, and advocates for children. They also have ratings for TV's, movies, and games for families. Education is only one of their three focus areas. Within education, the reviews and ratings are one of three focus areas along with digital citizenship and edtech teaching strategies.



Digital Promise

Review format (Stars → Research): Digital promise has three projects related to the collection and sharing of research; the research map, the research-based products campaign, and the ed tech pilot framework. They do not collect and share ed tech product reviews rather they more broadly aim to increase research use in the design,

development, and implementation of educational programs and products. The research map provides access to research articles in education from 2005-2014. These can be accessed in dynamic visual representations. The research-based products campaign report summarizes ways in which developers of educational technology are using research in their product design and development. The ed tech pilot framework provides an eight step model to support districts in evaluating the efficacy of ed tech.

Review Criteria: The closest there is to reviews is one paragraph narrative of the way research is used by the 53 companies who submitted to the research-based products campaign. There is also a full analysis report on the 53 companies.

Reviewers: The research map is a comprehensive collection of educational research organized in 12 fields with sub categories and connections across all of them. The 53 companies who submitted their use of research in design and development voluntarily answered a call by Digital Promise and Digital Promise collaborated with researchers from Teachers College to evaluate their research use in three categories (learning science, user research, and evaluation research). The ed tech pilot framework was developed from their marketplace research. It contains a selection of tools to enable schools to tailor research on the efficacy of ed tech to their needs.

Database: The research map is a database of over 100,000 educational research articles. The connections between articles and areas are meant to lead to quickly selecting the most relevant articles. Slightly less than half of the topics and subtopics have articles related to educational technology. The research based products campaign contains 53 examples. The ed tech pilot framework has been used with 14 schools with more currently using the tool.

Business Model: Digital Promise works at the intersections of researchers, entrepreneurs and practitioners. Digital promise provides many services, three of which have been highlighted, to help close the digital divide. Per their 2015 Annual Report, their total revenue was \$18.1M with 34% from grants; 5% earned; 3% partnerships; 3% in-kind contribution of professional services and 55% in-kind contribution of devices and data plans

Organization: They are a non-profit organization. Most of the funding comes from in-kind contributions and grants. They started as a project of the Carnegie Corporation and other partners in 1999. Digital Promise was launched as a stand-alone corporation with a board of directors by President Obama in 2011.

Observations: Digital Promise has many projects making it somewhat difficult to pull out the aspects most closely related to our working group.

What's Next: Their goal is to close the digital learning gap. The collection and application of educational research, some of which is around educational technology, is one way they are attempting to close the gap. The ed tech pilot framework is a new project ready for continued growth.



Digital Learning Research Network

Review format (Stars → Research): The Digital Learning Research Network (dLRN) is focused on moving research out of the lab into practice. They currently have eight ongoing research projects. Each of these is described with updates of the work on the website. They also have annual dLRN conferences to share the research.

Review Criteria: The focus of dLRN is to address basic research and promote practical results. They aim to identify research opportunities, especially around promising technological and pedagogical practices and to form research teams around these opportunities.

Reviewers: dLRN is based out of the University of Texas-Arlington. They have eight primary partners; Stanford, Carnegie Mellon University, University of Michigan, Teachers College, Columbia University, Smithsonian, SRI International, University System of Georgia, California Community Colleges, and University of Arkansas System. Each of these partners is involved in at least one of the current projects.

Database: dLRN has eight current projects. Each of these projects are highlighted on the website with a description and update of their work. Projects are added through a call for proposals process. The last CFP closed on July, 11, 2016.

Business Model: The goal is to provide colleges/universities with researched informed approaches by identifying what works and what doesn't work in regards to digital learning. Information is available free online.

Organization: dLRN is funded by a \$1.6M grant from the Bill and Melinda Gates Foundation. They began their work in 2015.

Observations: The full research articles are not available (yet?) on the website.

What's Next: The goals of the grant are to help remove barriers to digital learning and articulate the conditions needed for successful learning for all students so that they may more fully participate in the global economy.



EdReports

Review format (Stars → Research): Does not review educational technology. It reviews instructional materials (textbooks, curricular materials). Reviews so far completed for year-long, scoped and sequenced Math and English/Language Arts programs only. The

reviews are easy to find and very in-depth. Includes comparison charts for all materials in like grade bands and subject areas, i.e. K-8 Math or High School English/Language Arts. Each review has three gateways. For mathematics, a product must meet or partially meet expectations for the first gateway (Focus and Coherence) to move onto review in the second (Rigor and the Mathematical Practices), and pass both the first and the second to move onto review in the third (Usability). For ELA, a product must meet or partially meet expectations for the first gateway (Text Quality and Complexity, and Alignment to Standards with Tasks and Questions Grounded in Evidence) to move onto review in the second (Building Knowledge with Texts, Vocabulary, and Tasks), and pass both the first and the second to move onto review in the third (Usability).

Review Criteria: Reviews are completed by teams of 4-5 reviewers for each product. A research backed review tool is used by the team. Teams meet weekly during the evaluation process—typically three to six months—to reach consensus on each area of the review tool. Each gateway has multiple criterion and each criterion has multiple indicators. The review tools and related evidence guides are on the website. Demographics and contextual information about users of materials is not collected.

Reviewers: The reviewers are selected from a highly competitive process. They are paid for their time. Each reviewer is trained for 25 hours face-to-face and receives ongoing support throughout the process. The consensus final report is very long and detailed.

Database: The database is currently limited to approximately 40 math resources (about 15 more under review) and 15 English/Language arts resources (about 10 more under review). One dimension of the reviews is alignment to the common core, therefore usage is likely targeted to those states using common core standards. Publishers can submit their materials for review.

Business Model: EdReports provides the reviews free of charge and readily available on their website. The target audience is schools and districts in states with College and Career Ready standards (i.e. the common core) looking to adopt and implement year-long scoped and sequenced curricular materials.

Organization: It is an independent non-profit organization supported by funders. They launched in 2015.

Observations: One of the few review services to be very strict in the reviews, many resources are rated as Does Not Meet Expectations.

What's Next: Their goal is to provide open evidence based reviews to support adoption of the best available materials. Review of edtech products is not in their immediate plans (though they review digital only materials).

EdShelf

Review format (Stars → Research): The review of each product contains a video and or picture of the product and a description of the functionality. The video and description are provided by the resource developer. Star ratings (1-5 scale) are given on three aspects; learning curve, pedagogical effectiveness, and student engagement. An aggregated star rating is not given. Numbers are also provided for the number of users of the product and the number of times it has been added to a collection (shelf). The number of reviews completed are very limited, the most popular products have 10-15 reviews, most have five or fewer. Edshelf has detailed search options to find a tool. Search options include setting filters by; price, platform, subject, age, and category. You can also browse the extensive category listings.

Review Criteria: The description of the product and the video all come from the developer. The reviews are completed by edshelf users. Reviews consist of one short narrative answering ‘How do you use this tool?’ along with star ratings on the learning curve, pedagogical effectiveness, and student engagement. No contextual or demographic data is collected along with the reviews. The review form is not backed by research.

Reviewers: Can be anyone. Users of the site are much more likely to add a product to their shelf than to actually complete a review. The star ratings for individual users are not shown, only aggregated star ratings. So when reading a narrative from an individual you cannot determine the accompanying rating from them. There is no incentive to complete a review.

Database: The database is very large, over 6,000 products are included. The reviews are very short and limited in numbers. Anyone can suggest an item to be added to the database.

Business Model: The target audience is to help parents and teachers to help them find the appropriate educational technology. All of the reviews and ratings are entirely free. The vendors pay for advertising in a weekly newsletter.

Organization: Edshelf began in 2012 and was closing in 2015. It was saved by a kickstarter campaign and is now a one person operation.

Observations: Very large library, but reviews are very short and not plentiful.

What’s Next: The reviews and curating of personal collections (shelves) are the purpose of edshelf. Emphasis is shifting to personal collections (shelves) and away from reviews and ratings. The goal is to continue to add users and content to maintain operations.



EdSurge

Review format (Stars → Research): Two Services; EdSurge Product Index, Concierge Service. Product Index provides a large database of edtech products with a description of the services offered by each product. A limited number of products have ratings and reviews. The ratings are one to five stars. Reviews are short narratives on four areas; usage, strengths, suggestions for improvement, and verdict. Even fewer products have Case Studies: short narratives with three questions: What problem were you solving, how did you use the product, what worked and what didn't. The products can be found through multiple search methods. Concierge service works in the opposite direction: School leaders go through a rubric to identify instructional needs and technology constraints. Concierge delivers a list of products to meet the need.

Review Criteria: Product Index: The ratings and reviews are largely completed at EdSurge Summit events. There is no contextual or demographic data connected to the reviews. The reviews are not based on a research-backed rubric. In the very limited number of case studies, there is a narrative sharing experience with the product, as well as limited demographic data on the author. Concierge Service: Has research backed template from SRI to help school leaders characterize needs. Internal search tools use those details to identify relevant short lists of technologies to meet the need.

Reviewers: Product Index: Reviews are completed by EdSurge Summit attendees. Often the raters do not have experience with the product, but have been introduced to the product at a session. They submit an overall star rating and narrative in four areas (usage, strengths, suggestions for improvement, and verdict). The raters are incentivized by conference prizes to complete the reviews. Any teacher or administrator can write a Case Study, so long as they are a confirmed educator. Concierge Service: The assessment of need is completed by the school district. It is unclear if the matched products come from the Product Index or another source. School districts are incentivized by the ability to find a better matching product to their need and the possibility of negotiating a better rate for purchase with the vendor.

Database: Product Index: Over 2,300 edtech products are described. At most 25% have been reviewed. Fewer than 100 case studies have been submitted. If a product does have reviews, only the star ratings are aggregated. To view the narratives, individual reviews must be selected. Companies can request to be included in the Index by submitting forms but the information is reviewed before posted. Concierge Service: School leaders are presented with a series of technologies to meet their identified need which may or may not be from the Product Index.

Business Model: The Edtech Product Index and Concierge service are both available for no cost for schools. One version of the Product Index is targeted to K-12 teachers and administrators; another version of the Index is aimed at Higher Ed instructional designers. The Concierge Service is targeted for schools and school level purchases. Companies can pay a fee to provide a customized response to a Concierge request. Their

responses are included with others collected by EdSurge and are clearly marked as such.

Organization: EdSurge is a for-profit venture with a number of investors. It was founded in 2011.

Observations: The Product Index is an easy place to find descriptions, but reviews and ratings are scarce.

What's Next: The goal of EdSurge is to help educators find the most appropriate technology and solutions for their school and students. A large part of their business and structure is that of a media company, writing and curating articles about edtech for educators, administrators and entrepreneurs to read. They also run a Jobs board and support conferences. The Product Index and Concierge Service are a small portion of the overall services provided.



EducationalAppStore.com

Review format (Stars → Research): Most apps have a star rating (1-5), some screen shots of the app, a narrative teacher review, and a description from the developer. Apps then have a box near the end of the review with the subjects and ages aligned with that app. Listed in the box are also the learning outcomes associated with this app (from their list of ten outcomes), features of the app related to pricing and advertising and link to curriculum alignment (behind a paywall). Apps can be searched by topic, platform, age, rating, and keywords.

Review Criteria: According to the site, they have developed, alongside a professor at Open University, “an independent and rigorous certification process by which to assess educational apps and map them against the curriculum.” They have rubrics to score the apps in four areas: content, national curriculum, integration, and navigation. No rubrics or description of the process is given. No usage data nor contextual demographic data is collected. Some research backing for the rubrics is implied but not shared.

Reviewers: Reviews are completed by a practicing teacher. No information is given on those teachers completing the reviews. They are writing a narrative review and a star rating on a scale of 1-5. Not all apps in the library are reviewed. It is unclear what the incentive is for completing a review. Apps are mapped against the English National Curriculum as they are based out of the UK.

Database: Thousands of reviews have been completed. The reviews tend to be a three to four page narrative. Over 8,000 teachers and 5,000 parents are registered in the system. Developers may submit their apps to be reviewed.

Business Model: Reviews are aimed at teachers and parents of students in the primary grades, although some reviews for older student are present. Besides the reviews, they provide collections of apps, links to the curriculum, lesson plans, and weekly newsletters.

Users are charged 5 pounds per month for the full list of features. The reviews, without links to the curriculum, can be accessed for free.

Organization: It appears they are a for-profit company. The funding is obtained through the fee charged monthly to users. It is unclear when they began.

Observations: It is aligned with the English curriculum.

What's Next: Their goal is to help students through the primary grades through the use of apps. Product reviews are the heart of the organization.



Learn Platform

Review format (Stars → Research): A step above star ratings. Each product is rated on a traditional grading scale (A-F). Grading scale includes +/- with sub-levels so there are a total of 50 levels of scoring. Reviews are aggregated across each of the nine factors as well as a cumulative grade for the product. The grade presented can change based on the search parameters, such as a particular network of schools or those that have used the product in the last six months. A percentile score is also displayed with the grade. Products initially appear in alphabetical order, the overall grade is displayed with the product. There is an advanced search tool; however, five different combinations of topic and grade level and the searched returned “no products available” each time.

Review Criteria: Each product is graded on nine factors: alignment with learning objectives, ease of use, impact on student learning, impact on teaching effectiveness, professional development, quality of the content, quality of the features, recommend to colleague, and technical merit. The nine dimensions were created through a research process and the rubric is available. The review form includes question on how long and how often the tool has been used, what groups of students use the tool, and what the purpose is in the classroom. These multi-choice factors are selected from a predetermined dropdown menu. Reviewers can provide narrative in each section as well.

Reviewers: Anyone with a free Learn Platform account can submit a review. Only reviews from verified educators who have chosen to share with the full community are aggregated into the grades. Reviewers can collect points for their reviews which can be accumulated and redeemed for low dollar gift cards or professional development credit. Review form collects some basic usage information (how often is the product used, how long have you used it, for what purpose, for what student groups) as well as F-A+ ratings on the nine dimensions listed above. Reviews are tied to your account and your institution allowing de-identified demographics to be collected with the review.

Database: Contains over 3,500 digital learning tools. The number of publically viewable reviews (most appear to be between 50-100) for each product is exaggerated. The total number of reviews shown is actually a sum of the number of reviews in each of the nine

grading dimensions. Over 100,000 users in the system or access the Learn platform. Users can recommend additional digital learning tools to add to the library.

Business Model: The Learn Product Library and access to individual reviews is free with an account. Access to Usage data and Pricing data are to institutions with free or paid accounts. Services to organizations (K-12 schools, higher education units, consortiums) are contracted. These services include more detailed reporting on products, including IMPACT analysis, and help in establishing product engagement and performance. Example UNC System.

Organization: Their focus is on providing data on digital education tools to users. The primary objective centers on saving organizations (K-12 schools, higher education units, consortiums) money by reducing time spent on research and lower cost of the product. They are a for-profit B-corporation. Changed from Learn Trials to Learn Platform in 2015

Observations: There doesn't seem to be much differentiation in the reviews; almost all are between B- and A-, however, the percentile ranking allows for greater differentiation.

What's Next: Continue to expand Product Library and collect reviews. Partner with organizations to provide analysis of current technology use as well as recommendations for future technology acquisitions.



Noodle Markets

Review format (Stars → Research): Noodle Markets intends to start adding reviews by being an aggregator of trusted 3rd party reviews. Partner K-12 review sites will provide educators with access to a variety of product review data. Educators that use Noodle Markets will have the ability to leave rubric-based reviews or star ratings (a range from 0 to 5 stars, with the ability to leave half-star ratings as well). All ratings and reviews for products and services are available for educators to see on the product search results page, as well as on the product profile page.

Review Criteria: The initial reviews will come from third party review sites. Noodle Markets K-12 schools/district personnel will have the option to add additional reviews. An educator comes to Noodle Markets, finds the product or service they have used, and then they can leave a rating and/or a review. The user is leaving a review based on the rubric provided which asks specific questions about student outcomes, ease of implementation and total cost of ownership (as applicable). Only confirmed users with .edu domains or other verified email addresses will be able to access the marketplace and leave reviews. The rubric was developed by educators, but does not have direct research backing.

Reviewers: K-12 schools/district personnel can add product reviews. The reviewer's name, title, institution and contact information are displayed unless the user has elected to leave an anonymous review. They are submitting information about their experience with a particular product or service. There is not a direct incentive for completing

reviews; the ratings and reviews left by one user will help inform the purchasing decisions of the next customer.

Database: Reviews from third party sources will displaying ratings and reviews data for several thousand products and services, across multiple procurement categories. The reviews are rubric based with the ability to leave text-based comments. The ratings and reviews are stored in the database and are associated with the corresponding product/service.

Business Model: Noodle Markets innovates buying processes to help districts save time and money on purchases, large and small. The goal is to bring transparency, speed, and control to K-12 purchasing. The platform allows K-12 purchasers to find products and services; issue competitive quotes and competitive solicitations to vendors and provides a vendor portal for easy vendor registration and response. Districts, charter networks, and at some point independent private schools, are the primary audience for Noodle Markets. Noodle Markets is completely free for vendors. Vendors maintain product and service profiles, are notified of quotes or solicitations that match their qualifications, and respond to those leads through our platform. The platform operates on a freemium model for educators. Purchasing or buying personnel (at schools, districts, networks and associations) get access to a dashboard of purchasing analytics, a rideable contracts database, RFP tools, ability to load district-approved vendor lists, and more. Increased use of the system triggers costs to the districts.

Organization: Noodle Markets, Inc. is a for-profit independent subsidiary of The Noodle Companies. They are funded by venture capitalists and private investors. They launched in 2015. The platform was open for vendor product registration in December 2015. Procurement tools launched March 2016. Purchasing analytics launched in March 2017.

Observations: Focus is on purchasing transparency. Reviews are seeded from third parties and are part of an increased emphasis on social features.

What's Next: New features in the pipeline include enhanced social features, historical pricing (by district) tied to top product categories, and user notification automations. They are planning to display ratings and reviews in an upcoming feature release. They will acquire rating/review data from a 3rd party that specializes in ratings and reviews for K-12 products and services.

SRI ALMAP Evaluation

Review format (Stars → Research): This is a collection of research studies across 14 universities on the implementation of adaptive learning courseware. The studies were all quasi-scientific with an experimental setting and a control setting. The goal was to assess student progress in gateway general education courses and developmental courses. The results can be viewed in a 40+ page report on the SRI website.

Review Criteria: The research was conducted at each of the 14 sites. The aggregated report was completed by SRI. In total, data was collected from over 19,500 students and 280 instructors in 23 courses. Description of the 14 universities, 2-year or 4-year, online, research, land grant are included with the data. Research design at each setting is described.

Reviewers: The initial research studies were completed at each of the 14 institutions. SRI then compiled the data into a single report with recommendations. Data on student grades, retention, learning outcomes, use of the adaptive learning courseware, instructional strategies, and cost were all collected. Participation by each of the 14 universities was incentivized by a grant from the Bill and Melinda Gates Foundation.

Database: The data is only on the 14 institutions who participated. The research and analysis is very robust. Recommendations for future uses are suggested. The study is not complete.

Business Model: This was a one-time project funded by the Bill and Melinda Gates Foundation.

Organization: See above.

Observations: Very thorough report on a very narrow slice of ed tech.

What's Next: Project is completed.



Teachers With Apps

Review format (Stars → Research): Reviews are narrative descriptions of the apps. Each description contains a description of the app and how it can be used in the classroom or at home as well as a list of the features. There are no ratings of the apps. Apps on the site are recommended, apps that aren't recommended are not posted. Finding app reviews is a little unclear. They can be found in an alphabetical list or embedded in links in articles and curations on their site. There is no ability to search for apps by content, grade, etc. although a search function is planned.

Review Criteria: The review criteria are not listed. They do have a research based rubric, however, it is not shared publicly. Each app that is on the site is recommended. No statistics are given on the number of apps that apply but are not certified. Every app is field tested with students and teachers as part of the review process. No information about the context or demographics of the field test is shared publicly. The research background and rubric for the evaluation is not made public.

Reviewers: The reviews are written by selected teachers, therapists and educators. A short bio of the reviewer is shared with the review. They are submitting a description of the app and a feature list. It is unclear if they are incentivized to submit the reviews, but they are likely paid.

Database: Over 1000 apps are listed as Teachers With Apps Certified. The narrative for each app is quite descriptive and gives suggestions for use of the app. The site attracts over 100,000 visits per month. New apps can be submitted for review by teachers or developers.

Business Model: Besides certifying some apps, Apps with Teachers offers paid consulting, paid accelerated reviews, and paid sponsored posts to their blogs and social media. Their target audience appears to be K-12 teachers, particularly elementary and special education.

Organization: While not explicitly stated, they appear to be for-profit as advertisements and services are for sale. Funding comes from developers submitting apps, advertisers on the site, and schools using the consulting services. Teachers With Apps was founded in 2010.

Observations: Seems very focused on special education and young students.

What's Next: Certifying apps and providing consultation around the use of apps are the services provided. They plan on switching to a corporate sponsor model and discontinue charging developers to review and app. Their goal is to bring quality ed tech content to the masses.



Technology for Education Consortium

Review format (Stars → Research): Not currently collecting reviews instead focused on developing funding transparency. Future plans include aggregating reviews from Lea(R)n, Common Sense, EdSurge and others. Do collect prices paid for ed tech and share that information with members. Publish internally survey responses and working group experiences around specific technologies.

Review Criteria: Review criteria will be determined by an external source where reviews are collected. Pricing data is reported by member school districts. Working groups of member districts using the same technology are convened to share experiences. Survey replies and webinar questions to the working groups are not research based. Demographic data of the districts is known and limited data, such as enrollment size and geographic region are included in the report.

Reviewers: Working groups are composed of member school districts. They are submitting their experiences with a specific product. There are no specific incentives,

besides the collective good, for sharing this information or participating in the working groups.

Database: The database consists of pricing information at this point. About 50 products have pricing comparison, and additional products are added through a service provided by Lea(R)n. Reviews will be from external sources. Two working group reports have been completed with a goal of created 5-10 per year. There are about 50 member districts of the Consortium contributing data with another 100 affiliate members who do not contribute data. Publically published pricing data is also added to the database.

Business Model: The goal is to make the procurement of educational technology transparent by providing price comparisons from district purchases. The target audience is K-12 school districts. Membership is by invitation only and is free of charge.

Organization: They are a non-profit organization. They began 2016 with seed money from the Bill and Melinda Gates Foundation.

Observations: You must provide evidence of your purchasing role when requesting membership.

What's Next: To help school districts manage the costs of purchasing ed tech through the sharing of pricing data. Independently collecting reviews on the efficacy of technology is not a priority and will likely be outsourced.