



# From Pilots to Products: Notes from a Gathering of Researchers and Developers at the 2018 DRK-12 PI Meeting

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These notes capture the ideas and experiences shared by DRK-12 awardees who attended a forum to explore different routes toward product sustainability.

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## Type of product

DRK-12 projects are producing a whole range of products, including activities, instructional units, and full-course curricula; assessments; professional development models, services, and materials; and computer hardware and software across STEM and computer science domains for use by educators (including in-school, out-of-school, and preservice) and/or students (including preK-12 and those underrepresented in STEM). While in-school teachers and students are most frequently the audiences for DRK-12 products, other audiences that could be tapped might be publishers, curriculum developers, faculty, parents, museum educators, school librarians, university extension educators, self-learners, citizen scientists, and people associated with workforce retraining programs, summer camp programs, and student competitions.

Examples of products include professional development sessions and resources to help teachers integrate computational thinking into the elementary grades or an engineering course that promotes critical thinking, design skills, and math and science proficiency.

## Use and adoption of product

Although individual teachers may make the decision to use a product, payment decisions are often made by administrators or, in some cases, curriculum/math specialists, teaching coaches, or professional learning community leads. Administrators, rather than educators, at out-of-school settings (e.g., museums, libraries, afterschool programs, or nature centers) are also most often making the decisions about whether to adopt and pay for products and services. In some cases, products (such as authoring systems) are being developed by researchers for use by other researchers and/or developers.

To support dissemination and sustainability of DRK-12 products, many of them would benefit from additional development to make them more market- or user-ready:

- » Developing a full-year curriculum from instructional units
- » Migrating the web site to a production hosting environment
- » Continuing to improve software to eliminate bugs, optimize performance, and reduce maintenance and manual-testing tasks moving forward

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- » Putting materials into a stable online format
- » Creating professional development supports (e.g., short videos to add to the written materials) to enable teachers to adopt products without as much or any face-to-face professional development
- » Training teacher leaders to provide professional development

*“At the moment, the products will languish on a webpage as downloadable PDFs. We need a model that goes beyond our current one of using the curricula as a support to intensive professional development.”*

## Resources needed to support dissemination and sustainability of products

Often, projects need financial, technical, and/or operational resources—beyond what they have available through current project funding—to support the dissemination and sustainability of research results, products, and services. The resource needs vary depending on the product and the dissemination and sustainability goals. A few examples are:

- » Resources for website development, maintenance, and server fees
- » Experts needed to maintain and advance products (e.g., to change JAVA files to HTML, align curricula with new standards, or market products to new audiences)
- » Staff needed to support students and teachers using the product, to provide professional development, to interact with vendors, and to further develop funding sources
- » Financial, operational, and/or technical support for the users (e.g., partner schools)

## Sources of support

While awardees have strategies for securing funding—for instance, user fees (e.g., subscriptions, download fees and fee-for-service), donations, continued grant funding, corporate funding, institutional endowment, and publishers and product vendors), there are no clear and easy paths toward sustained support.

*“We work with <our university> to leverage their legal, technology transfer, IT services, media ... and wish to use*

*our fundraising development officers <at our university>, but have found that not to be effective so far.”*

*“Teachers (or their schools) are willing to pay a nominal fee for training, but we are not sure yet how much we could charge without them fleeing to free alternatives. We have generally found antipathy towards licensing the learning environment itself because most other products in this space are free. We have a track record of small grants from companies and foundations, typically in support of either teacher training or disseminating <our product> to a new geographic area, new partner, or new learning context...”*

## Indicators of successful product dissemination and sustainability

Awardees recognized a variety of ways to conceptualize and measure successful dissemination and sustainability of their products, including increased number of users (e.g., teachers who use the product or change their teaching practices in the classroom), downloads, or purchases through vendors; sustaining levels of revenue; improved adoption to the point that the product is fully functional without their help; increased learning outcomes of students using the curriculum; and teacher feedback such that they find the materials flexible enough to implement in a variety of contexts).

*“One evidence of success would be a large amount of plagiarism!”*

For more information, visit [cadrek12.org](http://cadrek12.org).

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