

Discovery Education Platform

Logic Model

Study Type: ESSA Evidence Level IV

Prepared for:
Discovery Education

Prepared by LearnPlatform by Instructure:
Andrew Scanlan, M.A., Researcher
Molly Henschel, Ph.D., Associate Director of Research
Elizabeth Allen, Ph.D., Research Contractor

May 19, 2023



EXECUTIVE SUMMARY

Discovery Education engaged LearnPlatform by Instructure, a third-party edtech research company, to develop a logic model for *Discovery Education Platform*. LearnPlatform by Instructure designed the logic model to satisfy Level IV requirements (*Demonstrates a Rationale*) according to the Every Student Succeeds Act (ESSA).¹

Logic Model

A logic model provides a program roadmap, detailing program inputs, participants reached, program activities, outputs, and outcomes. LearnPlatform by Instructure collaborated with Discovery Education to develop and revise the logic model.

Study Design for *Discovery Education Platform* Evaluation

Informed by the logic model, LearnPlatform by Instructure developed a research plan for a study to meet ESSA Level III requirements. The proposed research questions are as follows:

1. To what extent were students using *Discovery Education Platform* during the 2022–23 school year?
 - a. On average, how many lessons and assignments were completed by students during the 2022–23 school year?
2. To what extent did the average number of lessons and assignments that students completed relate to improved performance on standardized math or English language arts (ELA) tests?

Conclusions

This study satisfies ESSA evidence requirements for Level IV (*Demonstrates a Rationale*). Specifically, this study met the following criteria for Level IV:

- ✓ Detailed logic model informed by previous, high-quality research
- ✓ Study planning and design is currently underway for an ESSA Level III study

¹ Level IV indicates that an intervention should include a “well-specified logic model that is informed by research or an evaluation that suggests how the intervention is likely to improve relevant outcomes; and an effort to study the effects of the intervention, that will happen as part of the intervention or is underway elsewhere...” (p. 9, U.S. Department of Education, 2016).

TABLE OF CONTENTS

Introduction	3
Logic Model	5
Table 1. Logic model core components	5
Figure 1. <i>Discovery Education Platform</i> logic model	6
Study Design for <i>Discovery Education Platform</i> Evaluation	10
Conclusions	10
References	11

Introduction

Discovery Education engaged LearnPlatform by Instructure, a third-party edtech research company, to develop a logic model for *Discovery Education Platform*. LearnPlatform by Instructure designed the logic model to satisfy Level IV requirements (*Demonstrates a Rationale*) according to the Every Student Succeeds Act (ESSA).

The study had the following objectives:

- Define the *Discovery Education Platform* logic model and foundational research base.
- Draft an ESSA Level III study design.

Previous Research. Many educators, schools, and districts are not effectively using technology to enhance student learning in active and creative ways. Educators often spend valuable time searching for appropriate and high-quality instructional resources to support the unique needs of their students. Despite their best efforts, these resources may fail to engage and motivate their students in a way that enhances learning. Many educators are not trained to use them, exacerbating equity gaps between students regarding their access to high-quality digital learning supports (U.S. Department of Education, 2017).

Discovery Education Platform is founded on research that highlights key elements of effective implementation of educational technology in schools: (1) strong school and district leadership; (2) teacher professional development; (3) inclusive learning experiences; (4) engaging and motivating content; and (5) effective assessments.

1) Strong school and district leadership: Effective school and district leaders view technology as a tool that, when used properly, will enrich the learning process. When used strategically, technology is more effective at enhancing student learning than when it is used widely without thoughtful consideration of its role in the learning process (Brown, 2014; Richardson & Sterrett, 2018). Furthermore, technology use in educational settings is often ineffective and lacks systematic organizational strategies (Haynes & Shelton, 2018). When school and district administrators commit to research-based digital learning resources that support teaching and learning, student engagement and achievement increase (Richardson & Sterrett, 2018; U.S. Department of Education, 2017).

2) Teacher professional development: Effective teacher professional development is critical to support the teaching of complex skills students need to succeed in their academic and professional careers. These skills include, but are not limited to, critical thinking, problem-solving, content mastery, communication and collaboration skills, and self-regulation (Darling-Hammond et al., 2017). The core features of designing effective professional development for technology integration are that it should be content-focused, coherent, long-term, contextualized, incorporate active learning, support collaboration, and involve collective participation (Darling-Hammond et al., 2017). When teachers and administrators fully engage in professional learning designed to improve teaching and learning, instructional practice improves.

3) Inclusive learning experiences: Research shows that providing children with engaging opportunities to solve real-world problems that contextualize their learning experiences is an effective instructional approach. For instance, learning has deeper meaning and authenticity when students engage with experiences that connect to the real world (Fougt et al., 2019). In addition, research shows that instructional strategies that make general education curriculum accessible to all students result in more inclusive learning experiences (Capp, 2017; Cervantes et al., 2015). Also, when lessons include multiple means of representation and expression, students are more engaged and deeper understanding and active learning can occur (Ok et al., 2016).

4) Engaging and motivating content: Engagement in real-world learning experiences through the effective use of technology leads to a deeper understanding of content and increases student engagement, motivation, and academic achievement (Bull & Keengwe, 2019). There is a need, however, to ensure that digital curricula are high-quality and aligned with learning standards (Educators for Excellence, 2020). As such, when high-quality, high-interest digital content is integrated into a classroom's daily learning routine, students are more engaged and more motivated to work through challenges, thus deepening learning.

5) Effective assessments: Data-based decision-making is critical to differentiated instruction (Faber et al., 2018). Formative assessment data aids teachers in designing lesson plans, evaluating student learning, and differentiating instruction (Heritage, 2021). When students are given access to detailed and timely feedback on assignments, they can self-monitor their learning, reflect on instruction, and set learning goals (Bailey & Heritage, 2018; Cauley & McMillan, 2010; Hattie & Timperley, 2007; Makkonen & Jaquet, 2020).

Discovery Education Platform provides a research-based digital learning resource that offers students the opportunity to learn using high-quality and engaging digital content. It recognizes that for educational technology to impact student learning positively, school and district administrators must set a vision for technology-enhanced learning, educators must be provided appropriate professional development support, and content must be inclusive, engaging, and focused on academic achievement. It has the potential to positively improve both student learning and educator practice.

Logic Model

A logic model is a program or product roadmap. It identifies how a program aims to impact learners, translating inputs into measurable activities that lead to expected results. A logic model has five core components: inputs, participants, activities, outputs, and outcomes (see Table 1).

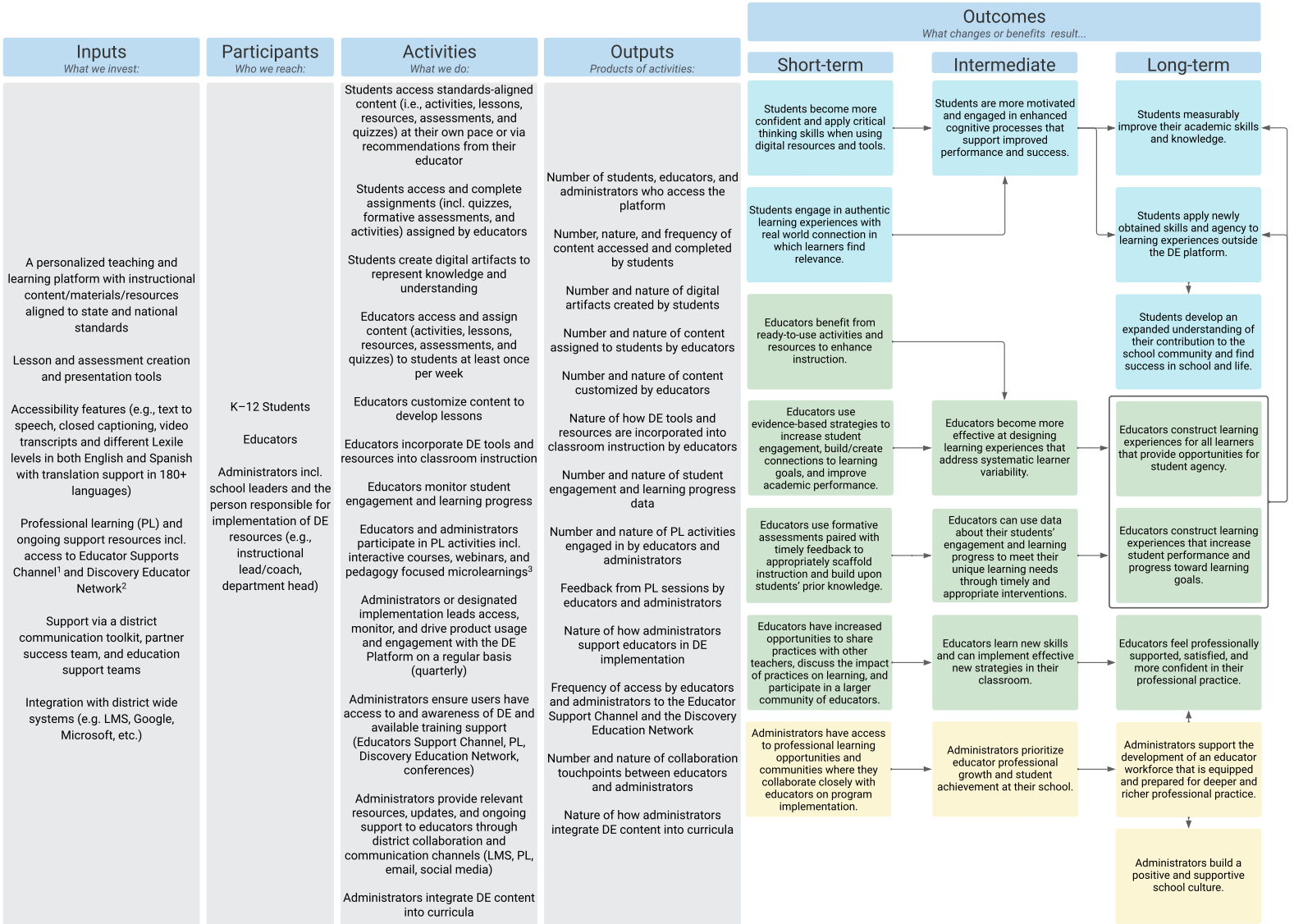
Table 1. Logic model core components

Component	Description	More information
Inputs	What the provider invests	What resources are invested and/or required for the learning solution to function effectively in real schools?
Participants	Who the provider reaches	Who receives the learning solution or intervention? Who are the key users?
Activities	What participants do	What do participants do with the resources identified in Inputs? What are the core/essential components of the learning solution? What is being delivered to help students/teachers achieve the program outcomes identified?
Outputs	Products of activities	What are numeric indicators of activities? (e.g., key performance indicators; allows for examining program implementation)
Outcomes	Short-term, intermediate, long-term	<p>Short-term outcomes are changes in awareness, knowledge, skills, attitudes, and aspirations.</p> <p>Intermediate outcomes are changes in behaviors or actions.</p> <p>Long-term outcomes are ultimate impacts or changes in social, economic, civil or environmental conditions.</p>

LearnPlatform by Instructure reviewed *Discovery Education Platform* resources, artifacts, and program materials to develop a draft logic model. Discovery Education reviewed the draft and provided revisions during virtual meetings. The final logic model depicted below (Figure 1) reflects these conversations and revisions.



Problem Statement: Educators are facing a myriad of challenges including lack of prep time, large class sizes with many students who need individualized support to meet academic standards, increasing instructional demands, and access to a vast supply of digital resources. Discovery Education (DE) Platform provides educators with access to easy to use, vetted instructional supports that engage all students with pre-curated, relevant content and embedded teacher tools that seamlessly integrate into their class time.



¹ The Educator Supports Channel is an online platform that provides school and district leaders with resources on how to share best practices for Discovery Education products/services and empower educators through professional learning.

² The Discovery Educator Network is a global online community that connects educators to teaching resources, learning opportunities, and professional peer networking.

³ Discovery Education microlearnings are small, digestible modules in subjects like literacy or math that teachers and parents can complete on their own time.

Figure 1. Discovery Education Platform Logic Model



Problem Statement

Educators are facing a myriad of challenges including lack of prep time, large class sizes with many students who need individualized support to meet academic standards, increasing instructional demands, and access to a vast supply of digital resources. Teachers want access to easy to use, vetted instructional supports that engage all students with pre-curated, relevant content and embedded teacher tools that seamlessly integrate into their class time.

Discovery Education Platform Logic Model Components. Discovery Education invests several resources into their program, including:

- A personalized teaching and learning platform with instructional content/materials/resources aligned to state and national standards;
- Lesson and assessment creation and presentation tools;
- Accessibility features (e.g., text to speech, closed captioning, video transcripts and different Lexile levels in both English and Spanish with translation support in more than 180 languages);
- Professional learning (PL) and ongoing support resources including access to the Educator Supports Channel² and the Discovery Educator Network (DEN);³
- Support via a district communication toolkit, partner success team, and education support teams; and
- Integration with district wide systems (e.g. LMS, Google, Microsoft, etc.).

Ultimately, *Discovery Education Platform* aims to reach K–12 students, educators, and administrators, including school leaders and the person responsible for implementation of Discovery Education resources (e.g., instructional lead/coach, department head).

Using these product resources, the aforementioned participants can engage with *Discovery Education Platform* in the following activities:

- Students access standards-aligned content (i.e., activities, lessons, resources, assessments, and quizzes) at their own pace or via recommendations from their educator;
- Students access and complete assignments (incl. quizzes, formative assessments, and activities) assigned by educators;
- Students create digital artifacts to represent knowledge and understanding;
- Educators access and assign content (activities, lessons, resources, assessments, and quizzes) to students at least once per week;
- Educators customize content to develop lessons;
- Educators incorporate Discovery Education tools and resources into classroom instruction;

² The Educator Supports Channel is an online platform that provides school and district leaders with resources on how to share best practices for Discovery Education products/services and empower educators through professional learning.

³ The Discovery Educator Network (DEN) is a global online community that connects educators to teaching resources, learning opportunities, and professional peer networking.

- Educators monitor student engagement and learning progress;
- Educators and administrators participate in PL activities incl. interactive courses, webinars, and pedagogy focused microlearnings;⁴
- Administrators or designated implementation leads access, monitor, and drive product usage and engagement with *Discovery Education Platform* on a regular basis (quarterly);
- Administrators ensure users have access to and awareness of Discovery Education and available training support (Educators Support Channel, PL, Discovery Education Network, conferences);
- Administrators provide relevant resources, updates, and ongoing support to educators through district collaboration and communication channels (LMS, PL, email, social media); and
- Administrators integrate Discovery Education content into curricula.

Discovery Education can examine the extent to which core activities were delivered and participants were reached by examining the following quantifiable outputs:

- Number of students, educators, and administrators who access the platform
- Number, nature, and frequency of content accessed and completed by students
- Number and nature of digital artifacts created by students
- Number and nature of content assigned to students by educators
- Number and nature of content customized by educators
- Nature of how Discovery Education tools and resources are incorporated into classroom instruction by educators
- Number and nature of student engagement and learning progress data
- Number and nature of PL activities engaged in by educators and administrators
- Feedback from PL sessions by educators and administrators
- Nature of how administrators support educators in Discovery Education implementation
- Frequency of access by educators and administrators to the Educator Support Channel and the Discovery Educator Network (DEN)
- Number and nature of collaboration touchpoints between educators and administrators
- Nature of how administrators integrate Discovery Education content into curricula

If implementation is successful, based on a review of product outputs, Discovery Education can expect the following outcomes.

Students

In the short term, students will become more confident and apply critical thinking skills when using digital resources and tools. They will engage in authentic learning experiences with real world connections in which learners find relevance. In the intermediate term, this will lead to students being more motivated and engaged in enhanced cognitive processes that support improved performance and success. Long term, these benefits will lead to students measurably improving their academic skills and knowledge and applying newly obtained skills and agency to

⁴ Discovery Education microlearnings are small, digestible modules in subjects like literacy or math that teachers and parents can complete on their own time.

learning experiences outside *Discovery Education Platform*. They will develop an expanded understanding of their contribution to the school community and find success in school and life.

Educators

In the short term, educators will benefit from ready-to-use activities and resources to enhance instruction. They will use evidence-based strategies to increase student engagement, build/create connections to learning goals, and improve academic performance. They will also use formative assessments paired with timely feedback to appropriately scaffold instruction and build upon students' prior knowledge. In addition, they will have increased opportunities to share practices with other teachers, discuss the impact of practices on learning, and participate in a larger community of educators. In the intermediate term, these benefits will lead to educators becoming more effective at designing learning experiences that address systematic learner variability. They will be able to use data about their students' engagement and learning progress to meet their unique learning needs through timely and appropriate interventions. They will also learn new skills and be able to implement effective new strategies in their classroom. Long term, educators will construct learning experiences for all learners that provide opportunities for student agency and that increase student performance and progress toward learning goals. They will also feel professionally supported, satisfied, and more confident in their professional practice. Finally, these benefits will contribute to students increasing their academic achievement and applying their learning outside the classroom.

Administrators

In the short term, administrators will have access to professional learning opportunities and communities where they will collaborate closely with educators on program implementation. In the intermediate term, administrators will prioritize educator professional growth and student achievement at their school. Long term, administrators will support the development of an educator workforce that is equipped and prepared for deeper and richer professional practice, while building a positive and supportive school culture. These benefits will also contribute to educators feeling more professionally supported and confident in their practice.

Study Design for *Discovery Education Platform* Evaluation

To continue building evidence of effectiveness and to examine the proposed relationships in the logic model, Discovery Education has plans to conduct an evaluation to determine the extent to which its program produces the desired outcomes. Specifically, Discovery Education has plans to begin an ESSA Level III study to answer the following research questions:

1. To what extent were students using *Discovery Education Platform* during the 2022–23 school year?
 - a. On average, how many lessons and assignments were completed by students during the 2022–23 school year?
2. To what extent did the average number of lessons and assignments that students completed relate to improved performance on standardized math or English language arts (ELA) tests?

Conclusions

This study satisfies ESSA evidence requirements for Level IV (*Demonstrates a Rationale*). Specifically, this study met the following criteria for Level IV:

- ✓ Detailed logic model informed by previous, high-quality research
- ✓ Study planning and design is currently underway for an ESSA Level III study

References

- Bailey, A. L., & Heritage, M. (2018). *Self-regulation in learning: The role of language & formative assessment*. Harvard Education Press.
- Brown, L. (2014). Best practices of leadership in educational technology. *Journal of Educational Technology, 11*(1), 1–6. <https://files.eric.ed.gov/fulltext/EJ1098558.pdf>
- Bull, P. H. (Ed.), & Keengwe, J. (Ed.). (2019). *Handbook of research on innovative digital practices to engage learners*. IGI Global.
- Capp, M. J. (2017). The effectiveness of universal design for learning: A meta-analysis of literature between 2013 and 2016. *International Journal of Inclusive Education, 21*(8), 791–807. <https://doi.org/10.1080/13603116.2017.1325074>
- Cauley, K. M., & McMillan, J. H. (2010). Formative assessment techniques to support student motivation and achievement. *The Clearing House: A Journal of Educational Strategies, Issues, and Ideas, 83*(1), 1–6. <https://doi.org/10.1080/00098650903267784>
- Cervantes, B., Hemmer, L., & Kouzekanani, K. (2015). The impact of project-based learning on minority student achievement: Implications for school redesign. *Education Leadership Review of Doctoral Research, 2*(2), 50–66. <https://files.eric.ed.gov/fulltext/EJ1105713.pdf>
- Darling-Hammond, L., Hyster, M. E., Gardner, M., & Espinoza, D. (2017). *Effective teacher professional development*. Learning Policy Institute. https://learningpolicyinstitute.org/sites/default/files/product-files/Effective_Teacher_Professional_Development_REPORT.pdf
- Educators for Excellence. (2020). *Voices from the classroom: A survey of America's educators*. https://e4e.org/sites/default/files/voices_from_the_classroom_2020.pdf
- Faber, J. M., Glas, C. A., & Visscher, A. J. (2018). Differentiated instruction in a data-based decision-making context. *School Effectiveness and School Improvement, 29*(1), 43–63. <https://doi.org/10.1080/09243453.2017.1366342>
- Fougt, S. S., Misfeldt, M., & Shaffer, D. W. (2019). Realistic authenticity. *Journal of Interactive Learning Research, 30*(4), 477–504. <https://www.learntechlib.org/primary/p/184664/>
- Hattie, J., & Timperley, H. (2007). The power of feedback. *Review of Educational Research, 77*(1), 81–112. <https://doi.org/10.3102/003465430298487>
- Haynes, C. A., & Shelton, K. (2018). Beyond the classroom: A framework for growing school capacity in a digital age. *Journal of Research on Technology in Education, 50*(4), 271–281. <http://dx.doi.org/10.1080/15391523.2018.1451791>
- Heritage, M. (2021). *Formative assessment: Making it happen in the classroom*. Corwin Press.

- Makkonen, R., & Jaquet, K. (2020). *The association between teachers' use of formative assessment practices and students' use of self-regulated learning strategies (REL 2021-041)*. U.S. Department of Education, Institute of Education Sciences, National Center for Education Evaluation and Regional Assistance, Regional Educational Laboratory West. <https://files.eric.ed.gov/fulltext/ED609117.pdf>
- Ok, M. W., Rao, K., Bryant, B. R., & McDougall, D. (2016). Universal design for learning in pre-K to grade 12 classrooms: A systematic review of research. *A Special Education Journal*, 25(2) 116–138. <https://doi.org/10.1080/09362835.2016.1196450>
- Richardson, J. W., & Sterrett, W. L. (2018). District technology leadership then and now: A comparative study of district technology leadership from 2001 to 2014. *Educational Administration Quarterly*, 54(4), 589–616. <https://doi.org/10.1177/0013161X18769046>
- U.S. Department of Education. (2017). *Reimagining the role of technology in education: 2017 national education technology plan update*. <https://tech.ed.gov/files/2017/01/NETP17.pdf>