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Thank you Chairman Miller and Mr. McKeon. It is an honor to appear before the Committee.

I address you today as a lifelong educator. I began my career as a Technology Specialist in Pennsylvania's public education system, where, in a number of roles, I worked to encourage the use of digital media and educational technologies in the classroom.

In my current position at Discovery Education, I serve as the Vice President of Media and Technology, Outreach, and Professional Development, and am advocating today on behalf of Discovery Education for the creative and effective application of educational technologies and digital content in America's schools.

During my tenure as an educator, I've seen a profound shift in students.

Today's technology savvy students enter the classroom possessing a wide range of skills that are different than those of their parents and teachers. These students are extremely familiar with digital media and technology, multitask with ease, process information in many different ways, and interact with information and content at what people who did not grow up in this environment may see as a dizzying pace.

The data are clear regarding how much media students are exposed to on a daily basis, and how they allocate their personal media budgets across a variety of activities that deliver content to them instantaneously. They do this in the context of balancing their time with other activities that constitute their lives outside classroom walls.

Consuming, processing, and learning from media, in many forms simultaneously, is how today's tech-savvy students function. For more than six hours per day – eight when you count exposure to multiple forms of media at the same time – our students consume media. This constant interaction with media equates to a full-time job of learning through "untraditional" means.

With this data in mind, I ask you to consider the implications and the educational community's response.

Currently, our education system requires students to abandon the way they typically interact with content when they walk into school and learn in an environment much different from the digital world they inhabit outside the classroom. Instead, I believe the educational community should utilize the digital tools at our disposal to present instructional content in a way that piques students' interest and engages them in the meaningful construction of knowledge. In my opinion, this is where the future of learning lies.

Our instructional practices need to be infused with the tools and activities from which our students learn naturally. This can include methods as simple as using a short two-minute video segment to activate prior knowledge at the start of a lesson; providing multiple representations of content via images, video and audio; or giving our students an opportunity to demonstrate their understanding in different media-enhanced ways.

In doing so we can translate our instructional objectives to our students and get them interested in learning the skills, content, and ideas they need to develop.

It is clear how students use digital resources to learn. As we move forward to the classrooms of the future, the education community's challenge is to find points of intersection between what our students do in their free time and our instructional goals. The content and services provided by educational providers, such as Discovery Education, need to continue to evolve to facilitate student engagement and interaction with media.

Likewise, the federal government and state governments need to continue to show leadership in supporting the integration of digital content into America's classrooms. Finally, adequate professional development resources need to be allocated by school districts to help those educators who are not as comfortable with technology to implement digital content into their classroom activities, across all subject matters.

While the use of digital content in the classroom is a success story, the continuing evolution of media's use holds even more promise.

The story of content integration into curriculum began in the 1990s when educational media migrated from films and filmstrips to VHS tape. Videotape and VCRs initially held tremendous promise for the use of content in the classroom.

However, video's advantages over films and filmstrips proved minimal. Yes, teachers could fast-forward or rewind videos to utilize only the content they thought relevant, but that process was relatively laborious and continued to eat into classroom time. Likewise, the transition to video did not change the need for schools to continue to invest in expensive hardcopy libraries and for teachers to continue to compete against one another for the media they wanted for their classrooms.

In January of 2001, a company called United Learning launched a new service called Unitedstreaming. Utilizing America's emerging broadband network, Unitedstreaming (now known as Discovery Education *streaming)* offered American classrooms thousands of videos, delivered via the internet, correlated to state standards, and in 3-5 minute clips that teachers could easily integrate into their classroom lessons. No longer was media stopping and starting classroom instruction. Rather, digital content was being seamlessly integrated into existing curriculum.

In the fall of 2003, Discovery Education, a division of Discovery Communications whose networks include Discovery Channel, Animal Planet, and Science Channel, purchased United Learning. Education has always been at the heart of Discovery's mission. From its inception,

Discovery Education has sought to continue to respond to the changing way America's students learn. We have sought to create engaging, media-rich programs that mirror the way students interact with the world and develop high-quality multimedia resources in easy-to-use formats across all core-curricular subject areas to reach students.

Our flagship service, Discovery Education *streaming,* is available in more than half of all U.S. schools, offers teachers and students a library of up to 9,000 videos and 70,000 video clips, and is aligned to state academic and testing standards. Searchable by keyword, content area and grade level, the rich video content and other digital assets from Discovery Education enhance curriculum and engage today's students in learning.

Perhaps most importantly in this era of increased accountability in education and the compelling argument for the proliferation of educational technologies in the classroom, Discovery Education *streaming* is scientifically proven to improve student achievement. Two random-assignment, control group studies have revealed significant improvement in social studies, science, and math performance for students exposed to digital content from Discovery Education *streaming*.

In the independent evaluation conducted in rural Virginia in 2002, researchers examined third and eighth grade students in two areas of study – science and social studies. Improvement among experimental group students who received instruction aided by Discovery Education's digital content showed a 12.6 percent average increase in achievement over control group students.

In a more recent study conducted in 2004 in the Los Angeles Unified School District, researchers examined mathematics performance among 6th and 8th grade students. Students who received instruction aided by Discovery Education's digital content showed a 3 to 5 percent average increase in achievement in math scores over the control group.

While Discovery Education has sought to directly address the changing way students learn, we also have sought to use the power of digital content in response to American students' lagging performances in the sciences. In an ever-changing global economy, it is evident that the current state of U.S. science, technology, engineering and math education must be improved to avoid the potential of negatively affecting our future financial and national security. Swift action must be taken to ensure students do not lose the opportunity to move into the new global economy. And it is clear that technology allows companies like Discovery Education to react rapidly and effectively to new and changing educational needs, by modifying content and creating new services to address such needs – such as our recent creation of Discovery Education Science, to specifically focus on the needs of middle school and elementary school students in science education.

State Support of Using Traditional Textbook Dollars for Digital Content/Indianapolis Curriculum Alignment

State governments, with the support of forward-thinking organizations like SETDA, also are responding to the challenge of addressing the way students learn today by supporting a migration from traditional textbooks towards digital content.

One example of this shifting paradigm occurred recently when California Governor Arnold Schwarzenegger announced a first-in-the-nation digital textbook initiative that puts California on the road to a technologically advanced, higher quality, and lower cost education system.

According to the Governor's plan, California high school students will have access to science and math digital textbooks by the beginning of the next school year. A list of standards-aligned digital textbooks for subjects such as geometry, algebra II, trigonometry, calculus, physics, chemistry, biology/life science, and earth science courses will be released this August.

Phase two of the initiative is currently being developed. This includes making digital textbooks available for all grades, incorporating interactive content, and eventually creating a statewide web site highlighting available books.

In Indiana, that state's Board of Education also has made changes to their textbook adoption process, further embracing digital media. Recently, that state's Board of Education voted to issue a blanket waiver allowing school corporations and state-accredited nonpublic schools to use a broad range of multimedia, computer and Internet resources to supplement or replace traditional textbooks. Although the state textbook adoption process is still in place, school corporations and state-accredited nonpublic schools have the freedom to choose materials and resources they feel are best suited to the instructional needs of their students.

In addition, legislation is now in place in Florida allowing school districts to purchase digital content, and similar legislation is currently under consideration in Texas.

One of the most innovative approaches school systems are taking in their efforts to embrace the future of learning is currently being undertaken by Indianapolis Public Schools. Districts struggle with how to provide consistent instruction to students across a district. Usually, curriculum documents and textbooks are printed and shipped to schools. The documents, while helpful to the teachers in laying out a roadmap for what is taught during the school year, are static, and to update these documents is a major district endeavor in terms of both manpower and cost. In addition, each teacher must often juggle several of these documents and a textbook in order to plan instruction, so ease of use on the part of educators is critical. If the documents are difficult to use, chances are the digital content purchased by the district along with traditional texts will remain unused as well.

Discovery Education is responding to this challenge by assisting Indianapolis Public Schools in creating easy to use curriculum documents for history teachers correlated to the digital services used in the district. This content includes videos, articles, writing prompts, lesson plans, quizzes, images, and audio files. Upon completion of the project, the pacing guides will represent comprehensive, dynamic documents that will provide every teacher in the district access to the most effective content that both specifically addresses the district's learning standards and engages their students in learning. For students, access to engaging content is no longer dependent on the ability of the teacher to locate the content. This complete access with appropriate curricular alignment addresses the important issue of educational equity. This is just one example of how technology can be used to increase the effectiveness of our children's education.

Empowering Teachers with Professional Development

While the promise of digital content to positively impact the future of learning is great, any plan to integrate digital content and educational technologies into classroom curriculum is doomed to failure without ongoing, job-embedded professional development, supported fully by school districts.

Educators' content knowledge is deepened across the curriculum by providing research-based instructional strategies that assist students in meeting rigorous academic standards and prepare them to use technology to demonstrate their new learning. Successful professional development programs are backed with buy-in from district decision-makers and model best practices: namely, strategies for providing students with consistent feedback, utilizing cooperative learning structures, embedding digital content into instruction, and promoting the creation of content for the Web in an effort to better engage 21st century students.

Similarly, building internal capacity in districts and participating schools is of utmost importance in providing school systems professional development. District leaders, facilitators and teachers must receive continuous support through subsequent professional development that includes lesson and unit development, modeling, and non-punitive coaching.

Discovery Education's recent partnership with a large district located in the southeast region of the United States to provide professional development demonstrates the impact this kind of investment in teachers can make and how it can be done effectively. Over the course of five months, Discovery Education trained approximately 135 school–based facilitators and more than 800 teachers. The partnership included 82 Title I schools. In our initial meetings with the district we conducted a needs-analysis and determined three areas of focus for a successful implementation. We believe it is this concerted focus on targeted, measureable outcomes that garnered a 1,500 percent increase in use by both teachers and students of our digital library resource.

So why a 1,500 percent increase in use? We worked with their teachers to facilitate the consistent use of multimedia to engage and promote learning. Such professional development has empowered teachers to embed video into their instructional presentations, to build background knowledge, engage students in dynamic learning activities, and provide their students alternatives to book reports and traditional essays -- allowing them to demonstrate what they have learned through the creation of blogs, wikis, or movies using editable content from their online resources. This is one example of the impact professional development can make in ensuring our children can take full advantage of the opportunities technology in the classroom can provide.

The Future of Learning

The way students learn will continue to evolve in the future, and providers of educational materials, state governments, and school districts will continue to be challenged to meet their needs.

In my view, these continuing trends represent the future of digital learning.

With data supporting the benefits of integrating digital media into classroom instruction, now is the time for every level of government and school districts nationwide to accelerate their support for the use of effective digital content in schools. It is only with this continued support that today's students will reach their full academic potential.

Thank you for your time and attention to this issue.