

# Promethean Research Brief

**Promethean Education Strategy Group**  
Education Quality & Economic Growth





Brief: Promethean Research

As society is driven by knowledge and decisions made based on data we must seek to ensure solutions meet learning outcomes and fulfill the needs of the student. Promethean is committed to supporting independent research to find out how technologies are best employed to improve education and what the education returns can be. We are committed to helping teachers, pupils and governments get the most from their investments. Working with a wide range of institutions across the globe here we summarise some of our findings and take a look at future research.

The road to education transformation isn't paved with opinions. It isn't paved with advertising hype or marketing propaganda. Such things offer only a tenuous foundation upon which to make predictions about student achievement.

The road to real education transformation is paved with data. Data gleaned from independent research on instructional and assessment strategies that predictably increase teacher effectiveness and learning productivity. Only such data, applied in thoughtful strategic planning, offer a high probability of transforming education systems to meet the needs of today's students.

Through our research initiatives we strive to elucidate the instructional and assessment strategies which have the highest probability of enhancing student learning in a 21st Century learning environment. These elements are key components of the Themes That Matter – the foundation of our education transformation framework. It is our belief that by engaging in independent research focused on improving each thematic area, we will gain a better understanding of how to help partner countries effectively solve the multifaceted issue of improving learning for all students.

The foundational piece of Promethean's research findings is a three-year independent evaluation study conducted by renowned education researcher Dr. Robert Marzano. This landmark study yielded a great deal of data and has spawned the following research questions:

- What is the impact of our solutions and services on student engagement and academic achievement in various global and cultural contexts?
- What is the impact of our Learner Response Systems (LRS) on student engagement and academic achievement?
- What is the impact of our solutions and services on special student populations?
- What is the impact of identified successful pedagogical strategies on student engagement and academic achievement in an interactive learning environment?

What follows is a brief look at the various research initiatives that have been undertaken or planned for implementation around these four research questions.

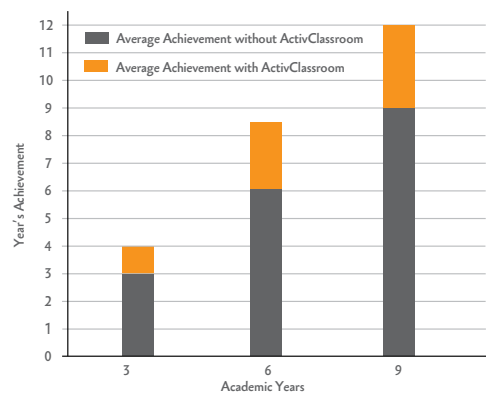


### Marzano Research Laboratory: “Continuation Study of the Effect of Promethean’s ActivClassroom”

Themes: 21st Century Learning; Student Achievement; Teacher Effectiveness

This independent study of nearly 5,000 students showed that academic performance increased by an average 16 percentile points when teachers taught their lessons using the ActivClassroom (Haystead and Marzano, 2010). Dr. Gene V. Glass, Senior researcher for the National Education Policy Center, summarised the study this way: “One way of phrasing their findings is that a class employing the technology would gain 12 months’ achievement in a 9 month school year.” When taken at face value, a reasonable inference is that students learning in an ActivClassroom would gain four years’ achievement in three academic years, six years’ achievement in four academic years, and twelve years’ achievement in nine academic years.

Applying the “ActivClassroom Effect”

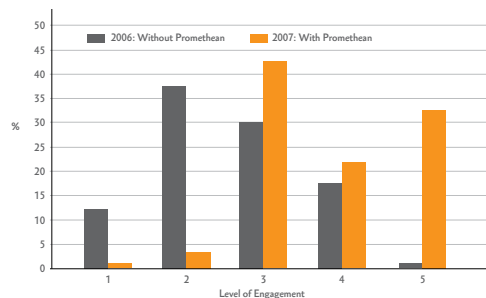


### Toronto Public Schools Evaluation Study

Themes: Collaboration & Personalisation; Education Continuum; Student Achievement

The Toronto District School Board’s Special Education Department conducted a study to evaluate the effect of Promethean’s education solutions and services on students with special learning needs. The study included nearly 300 students in 15 schools ranging from Elementary, Middle and Secondary levels. The attitudinal data clearly showed that the utilisation of Promethean’s solutions had a significantly positive effect in every student learning indicator measured. The findings also illustrate a substantive decrease in the indicators measuring behavioral issues that impede student learning.

Student Level of Engagement Rating (with 5 being best)



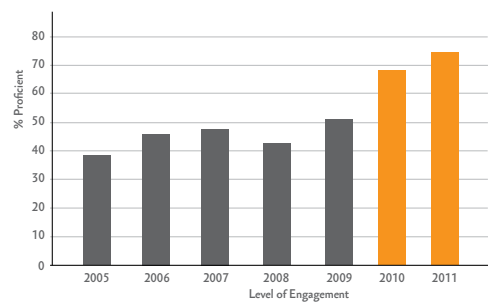


### Lemon Grove Public Schools Longitudinal Study

Themes: Collaboration and Personalisation; Education Continuum; Teacher Effectiveness  
Student Achievement

In his research study Dr. Marzano identified six instructional strategies that were used by teachers with the highest recorded gains in student achievement in the study ( $\geq 40$  Percentile Points). Building upon this research in 2009, Promethean’s education strategists integrated these instructional strategies into a professional development focused research initiative in Golden Avenue Elementary school– a low performing, highly diverse school with 80% of the students identified as “Impoverished” and 50% identified as English Language Learners (ELL). The graph at right highlights achievement gains in the 2010 and 2011 state math exam. Golden Avenue teachers attributed these gains to Promethean’s solutions and the professional development on the instructional strategies identified by Dr. Marzano.

Students Scoring Proficient/Advanced in CA State Math Examination



### Europe: iTEC (Innovative Technologies for Engaging Classroom)

Themes: 21st Century Learning; Personalisation and Collaboration; Teacher Effectiveness;  
Student Achievement;

iTEC (Innovative Technologies for an Engaging Classroom) is a four year, large-scale project starting in September 2010. The key aim is to develop engaging scenarios for learning in the future classroom that can be validated in a large-scale pilot and be subsequently taken to scale. Promethean is one of the 27 project partners which include 15 Ministries of Education. Funding from the European Commission for the project is 9.45 million Euros; iTEC is poised to be a flagship project for the design of the future classroom. The iTEC approach will make the technical components, (people, tools, services and content) more easy to select and combine tailored to the future classroom. The project outcomes will provide a model for the deployment of technology in support of innovative teaching and learning to guide policy making for all European schools. The potential impact and strategic nature of the project is underlined by the piloting of technology supported scenarios in >1,000 classrooms in 12 countries, making it by some margin the largest pan-European validation of ICT in schools yet undertaken. The evaluation will include data collection via technological tools to document the process, and case studies of classroom practice. The final report will provide a synthesis of the evaluation findings and will include an assessment of the underlying change processes as well as concise conclusions and recommendations regarding the effectiveness of the learning activities for future classrooms. It will enable widespread and timely dissemination to European and international audiences. Promethean believes that by investing time and resources in this ground breaking project we can help to support learning across Europe and give students the best opportunity to succeed.

## UK: University of York Self-Paced LRS Impact Study

Themes: 21<sup>st</sup> Century Learning; Personalisation and Collaboration; Data-Driven Decision Making  
Curriculum & Assessment Assets; Student Achievement

In a recent study from the renowned Institute of Effective Education at The University of York the impact of Promethean's ActivExpression devices on pupil's achievement was examined.

The study used a technique called Questions for Learning. Questions for Learning is a technology-enhanced formative assessment technique in which pupils use Promethean's ActivExpression devices to work through questions at their own pace in a classroom setting. The use of the device allows for immediate feedback that can be used by instructors to improve their teaching and by students to improve their learning.

The study took place over 13 weeks from January to May 2012 in eight primary local authorities in the North of England and North Wales. One year 5 class from each of the 42 primary schools involved participated in the randomised study.

The results of the study found that pupils who used Technology-Enhanced Self-Paced Learning (TESPL) showed significant gains in grammar compared with pupils in the control group. This improvement was greater in schools that used devices at least three days each week, as prescribed, and for low- and average-achieving students. If these results held over a school year, low- and average-achieving pupils would make between three and four months of additional progress.

Teacher and pupil surveys conveyed highly positive responses to the use of TESPL. "It's a great way of teaching grammar – fun and child friendly", commented one teacher. "It allows me to see the areas of grammar children are finding tricky so I can revisit them." One pupil remarked, "I think every child in the UK should have a handset", and another said, "I think they are a big help with all the questions because they teach you just a little more than what you know".

The results of the evaluation also suggest TESPL makes an important contribution to resolving the problem teacher's face in identifying how the learning of each student is progressing in the lesson. An evolving graph showing how each child is answering each question and depicting the rate at which they are responding immediately appears on the teacher's computer, allowing them to assess which students require support and which aspects of the curriculum require revisiting or re-teaching.

To download the full report visit [http://www.york.ac.uk/iee/research/t\\_questions\\_for\\_learning\\_grammar.htm](http://www.york.ac.uk/iee/research/t_questions_for_learning_grammar.htm)





# Ongoing Global Research

## **Finland: University of Helsinki Impact Study**

Themes: 21st Century Learning; Personalisation and Collaboration

Researchers at the University of Helsinki in Finland are beginning a multi-year study to measure the impact of Promethean's ActivClassroom on student development of 21st Century Skills. The skills identified include technology fluency, collaboration, communication, critical thinking and creativity. This research project will commence during the 2012-2013 academic year.

## **Middle East: EDUEVAL LRS Impact Study**

Themes: 21st Century Learning; Personalisation and Collaboration; Data Driven Decision Making

Private research firm EDUEVAL is working with Promethean to conduct an evaluation study to ascertain the extent of the impact of ActivExpression when implemented in Science Classrooms in the Middle East. Countries identified in the first phase of the study are: the United Arab Emirates, Bahrain, Oman, Qatar, Kuwait and Kingdom of Saudi Arabia in the GCC; Jordan and Lebanon in the Levant; and Egypt in North Africa. This research will begin in 2012.

## **Australia: University of Queensland Impact Study**

Themes: 21st Century Learning; Education Continuum; Teacher Effectiveness; Student Achievement

Researchers at the University of Queensland in Australia are beginning a longitudinal study on the impact of Promethean's ActivClassroom at John Fawkner College, an alternative school for at-risk learners in Melbourne. A Phase-1 qualitative analysis is currently being conducted which will be followed by a quantitative analysis on the impact of the ActivClassroom on student engagement and academic achievement in this unique learning environment.

## **United States: ActivExpression Impact Study**

Themes: 21st Century Learning; Teacher Effectiveness; Data Driven Decision Making

Marzano Research Laboratory will conduct an evaluation study to determine best practices for teachers using Promethean ActivExpression. As phase I of the third year study employed experimental design, phase two will also employ a randomised controlled study design in order to identify successful pedagogical strategies and their relationship to student learning outcomes.

## **United States: Triton Academy for Students with Autism**

Themes: 21st Century Learning; Personalisation and Collaboration; Education Continuum; Teacher Effectiveness

Expanding on our commitment to serving students with special learning needs, Promethean has partnered with Triton Academy in Ventura, California, to evaluate the impact of the ActivClassroom on students with Autism Spectrum Disorder. Every student attending Triton Academy suffers from some form of Autism Spectrum Disorder. Early results from this longitudinal study show a positive impact on student engagement, behaviour and learning goal achievement.

If you are an education stakeholder and are interested in learning more about Promethean's research initiatives or our educational transformation framework, please visit [www.PrometheanWorld.com/Education](http://www.PrometheanWorld.com/Education) or email us at [Education.Strategy@PrometheanWorld.com](mailto:Education.Strategy@PrometheanWorld.com)

“Promethean believes that education is the fuel that drives economic growth and social progress. Effective teaching is the key to successful, collaborative and personalised learning—which in turn creates better prepared students, more prosperous nations, more secure societies, and more engaged global citizens.”



Promethean’s Education Strategy Group explores and facilitates technology’s role in realising the promise of more effective educational systems locally and around the world. Through combining leading-edge research, pedagogical expertise, policy and practical insights, our approach demonstrates the impact of the long- and short-term return on investment in education technology—a theme central to the realities of 21st Century Learning.

The group focuses its efforts around six Educational Themes that are key to achieving global education success:

### The Themes That Matter

**Teacher Effectiveness**— examines how technology can help teachers in every aspect of their work.

**Curriculum Development**— surveys the way the face of learning is changing, especially in critical areas such as science, technology and mathematics.

**Curriculum & Assessment Assets**— considers how technology can enable shifting curricula to be linked with learning assessment;

**Data Driven Decision Making**— pursues insights into how educators can use data to improve individual and system-wide performance.

**Student Achievement**— studies how technology best facilitates personalisation and collaboration in teacher/student and student/student interactions.

**Education Continuum**— explores how technology supports learning system success throughout schooling and into the workplace.