FOUR BEST PRACTICES FOR SUCCESSFUL INSTRUCTIONAL TECHNOLOGY DEPLOYMENTS

Global Report and Recommendations

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Executive summary

A global research study was initiated in June 2012 to examine the value of implementing collaboration solutions in learning environments through a combination of instructional technology tools and best practices. The study reveals some compelling findings:

Levels of collaboration maturity

There are distinct levels of development that organizations exhibit as they become more competent collaborators. These levels form a collaboration maturity continuum based on their investments in technology tools and best practices. The value achieved from the implementation of instructional technology increases with the level of collaboration maturity.

The value of collaboration maturity

Organizations with higher maturity levels achieve greater than expected levels of value from their instructional technology investments. According to participants, value of investment is realized through improved student outcomes, teacher pedagogy, and the ability to adapt to new practices and models.

Achieving collaboration maturity

The maximum value from the implementation of instructional technology is achieved through a balanced combination of technology tools and best practices. A well-developed implementation strategy that includes a focus on people, process, and technology is essential to success.

Collaboration best practices

Organizations that participated in the study self-reported on thirty-two best practices. The study measured both participant performance and value of investment. The common areas of capability that participants rated as needing improvement include:

- Investment in strategy should precede technology. Acting with intent matters a great deal in achieving value.
- An inclusive view of the users of collaboration tools and a deep understanding of their collaboration requirements drives adoption and value.
- Providing appropriate spaces for collaboration and enabling technology in informal settings is important to innovation and creativity.
- Rich technology integration coupled with best practices is important to achieving advanced collaboration maturity and maximizing the value of their investment.

> Organizations with higher collaboration maturity levels achieve greater than expected levels of value from their investments in instructional technology.

Assessing your level of collaboration maturity

Organizations can participate in the research and receive a personalized self-assessment, including improvement recommendations at **smarttech.com/appraisal**.

Introduction

Leaders of all types of organizations around the world, from schools to multi-national corporations, are increasingly focused on effective collaboration as an opportunity to drive organizational transformation. In fact, IBM's latest global CEO study* ranked collaboration as the number one trait that CEOs seek in new employees as part of their efforts to embrace a more connected culture. Creating collaborative learning environments is an essential part of preparing students for future success.

Within this context, SMART Technologies commissioned a global research study of collaborative learning solution implementations in education environments. The study focused on understanding the types of investments being made in collaboration solutions – in the form of instructional technology tools and collaboration practices – and the value received from those investments.

Five levels of collaboration maturity

In education environments, the research uncovered a five-stage maturity continuum related to the effective implementation of instructional technology and associated best practices based on participant responses.
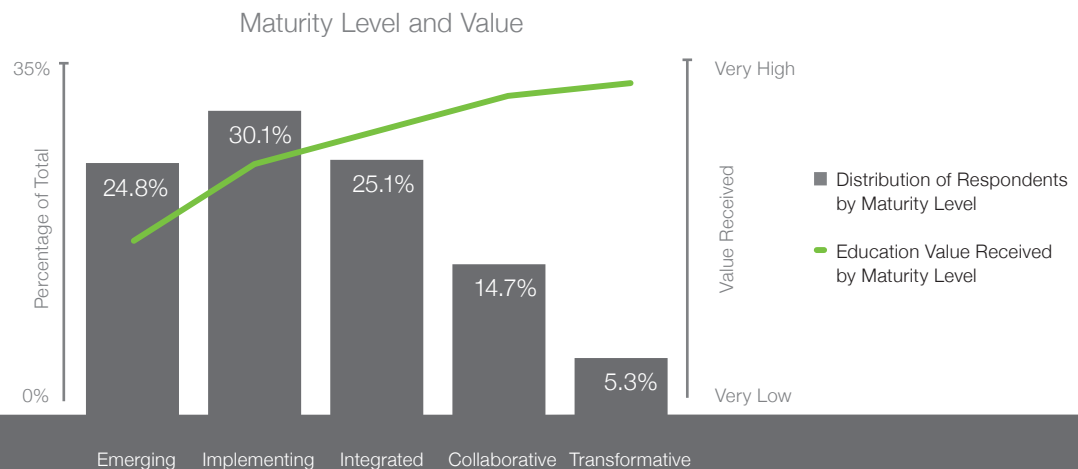
Emerging: Instructional technology, process and strategy are insufficiently developed to have a positive impact on student and teacher outcomes.

Implementing: Instructional technology is implemented with limited reach and minimal function. Technology elements do not effectively work together to maximize student and teacher outcomes.

Integrated: Instructional technology is broadly implemented and pedagogical processes have evolved to support the effective use of technology in the classroom and to begin collaborative learning.

Collaborative: Collaborative learning is enhanced by the power of technology, processes and people. Students can collaborate in their own settings and environments to leverage and build on their learning.

Transformative: Collaborative learning and advanced instructional models are fully supported by technology, people and processes.

Maturity Level and Value

Legend:
- Distribution of Respondents by Maturity Level
- Education Value Received by Maturity Level

Bar values: Emerging 24.8%, Implementing 30.1%, Integrated 25.1%, Collaborative 14.7%, Transformative 5.3%
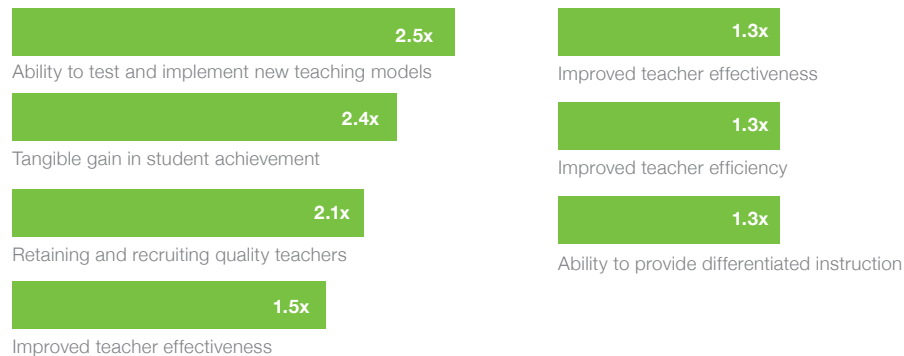
The value of collaboration maturity

The research indicates that many organizations have achieved remarkable results from effective implementation of tools and practices that are aligned to the needs of their teachers and students. The data shows that organizations with higher levels of collaboration maturity get better results, both in value and in specific outcomes.

The top outcomes, defined as those that improve the most across the maturity continuum, are listed below.

TOP EDUCATION OUTCOMES

2.5x	**1.3x**
Ability to test and implement new teaching models	Improved teacher effectiveness
2.4x	**1.3x**
Tangible gain in student achievement	Improved teacher efficiency
2.1x	**1.3x**
Retaining and recruiting quality teachers	Ability to provide differentiated instruction
1.5x	
Improved teacher effectiveness	

When instructional technologies and best practices are aligned to the needs of teachers and students, dramatic transformations can occur:
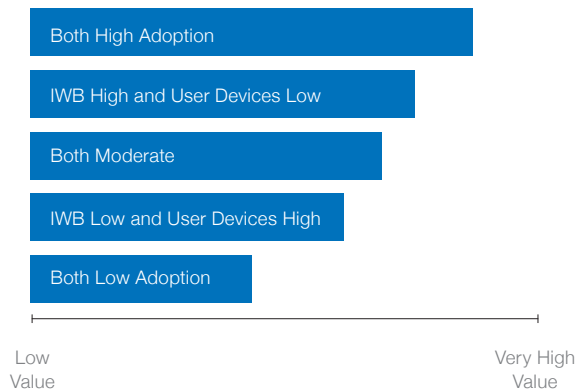
- Instructional technology has the potential to significantly enhance the breadth and depth of curriculum. These tools combined with the appropriate teacher facilitated pedagogical practices can give students access to a world beyond the classroom, where time and space become relative. Teachers can match lessons to students' needs and interests to create personalized learning pathways and engage students in new ways.
- Instructional technology enables flexible learning and alternative modes of instruction. Participants who had more effective technology implementations also reported more successful implementations of new teaching models.
- Effective implementation of instructional technology can provide powerful feedback loops. Students can get immediate feedback as they work collaboratively with other students in whole-class settings, small groups, and even as remote learners.
- Combining complementary technologies enables teachers to smoothly transition between whole-class, small-group and 1:1 learning, keeping students engaged during every step. Participants indicated that higher adoption of complementary technologies results in greater value of investment. Outcomes include increased teacher efficiency and improved student experience.

> Participants at the highest levels of maturity reported tangible gains in student achievement 2.4 times more frequently than those at lower maturity levels.

Technology mix and resulting value

Flexible or blended learning environments are facilitated by the effective implementation of personal devices and interactive whiteboards, such as laptops and iPad. The study results showed a combination of personal devices and interactive whiteboards drives more value than either in isolation.

Interactive Whiteboards and Personal Devices

Both High Adoption

IWB High and User Devices Low

Both Moderate

IWB Low and User Devices High

Both Low Adoption

Low
Value

Very High
Value

The chart on the left displays the average value achieved based on the adoption of various combinations of interactive whiteboards (IWBs) and user devices (PCs, tablets, etc.)

"Combining personal devices and interactive whiteboards into learning environments drives more value than either in isolation."

Achieving collaboration maturity

The study indicates that leading schools succeed in deriving value from their implementation of instructional technology by having a clear strategy that accounts for investments in knowledge, people, technology and process. This holistic, integrated approach has been successful for leading organizations in education. It is clear that investment in technology tools alone is not sufficient to achieve the value associated with high levels of collaboration maturity.

At low levels of maturity, the data suggests organizations should focus more on building the technology infrastructure and physical spaces necessary to drive adoption. At high levels of maturity, the focus should be on refining collaboration practices. For education organizations at moderate levels of maturity, balanced efforts to develop collaboration practices (people and process) and technology are key.

Ideal mix of technology and collaboration practices is determined by maturity level:

Low level	Moderate level	High level
focus on tecnology	balanced mix of technology and practices	focus on practices

Recommendations on next steps

The following recommendations are based on a study of practice data clusters from the survey. They are useful as a means to compare the performance characteristics of organizations as they mature and to provide some insight into how others have progressed through the maturity levels.

Getting started

Organizations just beginning the instructional technology journey should focus on establishing a clear technology plan and a strategy to support student and teacher collaboration. They should engage in technology deployment and practice development in the following areas:

- Deploy interactive hardware. Make sure the selected devices will integrate with the next layers of technology that will be implemented (personal devices and response systems). Make sure that the selected technology architecture is easy to use and learn, and has a proven impact on student and teacher experiences.
- Implement collaborative learning software that enables interactivity and encourages students to participate and collaborate. Ease of use and the ability to integrate across delivery platforms should be essential in the decision-making process.
- Establish a learning culture that encourages interaction, trust and openness, a desire to work with other people and engages students with each other to build a better understanding of concepts and real-world problems.
- Build a learning community with an infrastructure that allows teachers, students, and parents to connect and collaborate virtually.
- Content is the key. Using content from several sources can help drive delivery of high quality lessons that are aligned to curricular objectives. Content repositories are valuable resources to increase teacher efficiency and enable teachers to share lessons.
- Teacher and administrator professional development is essential to ensure good adoption and to drive strong outcomes. Teachers need to be comfortable with new technologies and empowered with practices to best leverage these investments. Principals need to know how to support their teachers and create change within the organization.

Moving from low maturity to moderate maturity

At a low level of maturity there is probably a sound technology base established and the implementation of best practices has begun. The next phase of technology and practices involves:

- Continuing to focus on the learning culture, learning through collaboration, building a knowledge sharing community and expanding that to learning networks and student engagement.
- At this stage, begin to lay the ground work for advanced learning models and flexible learning environments. This involves making technology selections that meet the needs of diverse instructional models.
- Implement an interactive response system to support instruction. Student-centered learning requires a data collection system that enables teachers to adjust instruction based on instant feedback throughout the lesson. Real-time student data helps teachers pace lessons and differentiate instruction aligned to student needs and interests.

Moving from moderate to high maturity

At this point in the maturity model there is a solid understanding of instructional technology. There is a great deal of technology in place and it's beginning to be used in an integrated manner. The practices have developed to the point where a number of approaches can be executed and solid feedback can be obtained. The next step is to escalate the approach.

- Continue to focus on the learning culture, community and student engagement. Add to that a strong focus on continuing to support teachers to use the integrated technology solution to enable collaboration.
- Implement practices that support productivity and continue to drive student outcomes in the areas of critical thinking, problem solving and social learning. These 21st century skills support collaboration. Effective collaboration and the ability to produce work that is built collaboratively is a critical requirement to prepare students for a globalized workforce.

Moving from high maturity to full transformation

Schools at this level are not alone, however they certainly are leaders. These organizations should share successes and collaborate, and should focus on the following:

- Prepare students for a future as collaborators. Improve the capabilities that will make them successful in tomorrows collaborative work environments. Teach them to effectively leverage each other's capabilities and to accomplish a common goal.
- At this stage balanced performance is necessary so focus should not be limited to any specific best practice. Strive to execute all of them with excellence and model innovative practices that have been shown to be important and then share them.

Success requires a comprehensive approach

Achieving high value takes commitment from installation to inspiration to practice excellence. It means selecting products that integrate easily with each other and with existing technology. It also requires practices that help teachers adapt to new pedagogical tools and models, including integrated learning spaces and flexible learning environments.

Collaboration best practices

Over 300 education professionals from around the world evaluated the impact of 32 best practices on their ability to reach collaboration maturity. End users and decision-makers representing a variety of different sized organizations at varied levels of instruction participated in the study.

Participants identified the following four instructional technology best practices as having consistently high value and impact on their overall performance:

1. Investment in strategy should precede technology.

Acting with intent matters in terms of achieving value and high levels of collaboration maturity. The study showed a strong relationship between achieving value and the implementation of various strategy and planning activities. Participants indicated that their implementation practices frequently did not include all of the necessary technological and process considerations.

2. An inclusive view of instructional technology end users and a deep understanding of their requirements should drive adoption and value.

Within the context of the study, this relates to the areas of needs analysis and requirements planning. Both were indicated as areas for improvement. Approximately 30% of the education participants in the study indicated that they did not effectively align needs to implementation priorities.

3. Providing appropriate technology and meeting spaces to support informal collaboration is important to innovation and creativity.

Providing technology enabled collaborative spaces in flexible environments (classrooms, hallways and staff rooms) has a direct relationship to measureable outcomes. Traditionally, collaboration occurred in highly structured classroom models. Participants identified a global shift towards implementing transformative spaces where teachers and students can collaborate without constraints.

4. Rich technology integration coupled with best practices is important to achieve advanced levels of collaboration maturity and associated outcomes.

Participants indicated that providing a technology rich user-centered solution had a strong impact on perceived value of investment. Technology should be easy to set up, easy to install and easy to use with other technologies. A powerful, integrated solution helps information move easily across platforms. Participants indicated improvement could be made here and noted a strong relationship between these practices and achieving high value.

Conclusions

Collaboration skills are critical at every stage of the journey from the classroom to the workplace. Businesses need employees with highly developed collaboration skills to leverage the connective and interdependent nature of today's business environment. Educators need to prepare their students for this environment while leveraging the many benefits associated with collaborative learning.

Education organizations have achieved varying levels of maturity in implementing collaboration solutions and there is an opportunity for significant improvement in many areas. This research study highlighted those areas and identified what organizations can learn from each other. The most significant areas for improvement include strategy development, planning, broad user requirements, informal collaboration support and richly integrated solutions.

Although the study indicated several improvement areas that could be appropriate for any organization, meaningful improvement is only achieved within the context of each specific situation. It is not possible to make broad generalizations about the specific actions required to attain higher levels of collaboration maturity.

To take a self-assessment and receive a personalized report and action plan that will compare your organization to the research database, please visit **smarttech.com/appraisal.**