

# **Interact or React – The Choice is Yours**

Increasing Collaboration and Productivity with an Interactive System in the Classroom and Boardroom

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# Where Did All This Interaction Come From?



If you grew up in a classroom that relied on a teacher lecturing at you and occasionally writing additional information on a chalkboard, or you've worked in an environment where meetings are run much the same, you may be in for a shock.

The up and coming generation, sometimes called Generation Y, the Millennial Generation (or Millennials), Generation Next, Net Generation or Echo Boomers, generally encompasses people born anywhere from the mid-1970s to the early 2000s. For purposes of this white paper, we will refer to them all as Millennials. And while what they are called sometimes differs, this group is generally noted for their increased use and familiarity with communications, media and digital technologies.<sup>1</sup>

It stands to reason, therefore, that teaching and working with Millennials creates a new challenge. According to Don Tapscott in his book "Grown Up Digital," he describes them as "a remarkably bright community which has developed revolutionary new ways of thinking, interacting, working and socializing."<sup>2</sup>

Let's face it, a talking head in a classroom with a chalkboard or in the board room with a dry erase board just isn't going to cut it anymore for Millennials.

This white paper is to inform you about the barriers to student and worker productivity due to a lack of interactive systems, talk about how an interactive system can improve overall productivity and collaboration in both settings, and ultimately showcase benefits to students, teachers and employees as well.

# Connecting to Accomplish: Student, Teacher and Employee Engagement



The Centre for Learning & Performance Technologies came up with the Top 100 Tools for Learning 2010 List recently. The top five on the list include Twitter (microblogging tool), YouTube (video sharing website), Google Docs (office collaboration suite), Delicious (social bookmarking site) and Slideshare (presentation hosting).<sup>3</sup> Trends to note from this list include how Millennials are using personal tools at home, work and school, and social tools that are emerging as a force to be reckoned with because they support the co-creation of content, as well as the connection, communication and collaboration of individuals, and the sharing of resources, ideas and experiences. Learning professionals are recognizing the huge value of encouraging participation and interaction of learners in training, rather than focusing on the delivery of passive (albeit highly content-rich) information – both in terms of learning outcomes as well as in terms of the cost and effort involved in creating programs.

Learning and working are no longer considered spectator sports, where participants sit back and listen to teachers or executives. Students, employees and teachers all need to engage and talk with each other about the given task at hand, which includes writing about it, relating it to past experiences, and applying whatever is being discussed to daily lives. They need to take the material that is being worked on and make it part of themselves.<sup>4</sup> In order to make this happen, all parties need to be engaged in the topic at hand.



A popular YouTube video called “A Vision of Students Today” delivers a stinging review of higher education. Students hold up signs that deliver messages such as:<sup>5</sup>

- My class size is 115
- 18 percent of my teachers know my name
- I complete 49 percent of the readings assigned to me
- I buy \$100 textbooks I will never open
- I will read eight books this year, 2,300 web pages and 1,281 Facebook profiles

This video points out a rather profound problem. Students are being educated in the 21st Century with educational tools that have been used for the past 100 years. A new system needs to emerge that encourages students to collaborate with each other.<sup>6</sup>

Teachers in classrooms not only need to incorporate technology into the classroom, but the truth is, students need to be involved in the lesson and actively participate in activities that include technology.<sup>7</sup>

# Knocking Down Barriers

Many people have studied the various types of learners and the different barriers to learning, all of which can be easily applied to a corporate environment.

The first barrier to learning is absence of mass. For example, if you're trying to understand how a car functions, having a written description and listening to someone talk about it is a poor substitute for the car itself.<sup>8</sup>

A second barrier is a skipped gradient. In other words, you may need to know one thing about a certain topic in order to build upon that knowledge to learn the next thing about it. For example, students who never complete a basic math class are going to have a hard time skipping straight to advanced calculus. For employees, not having contextual information about a certain topic makes it difficult to make effective decisions and work effectively together. For example, understanding why an acquisition was made for an organization will help everyone buy-in to the idea and help merge the unified organization's operations.<sup>9</sup>

The third barrier to learning is not understanding what is being discussed. Have you ever been reading a book, gotten to the end of a page, and been unable to remember what you had read? You get a blank feeling and it may prohibit you from performing a learned skill – a phenomenon that can happen in both education and corporate settings.<sup>10</sup>

In addition to barriers to learning, you also need to take into account that there are fundamentally three different types of learners: visual, auditory and kinesthetic.<sup>11</sup> Visual learners like order and enjoy reading or looking at books and pictures. Auditory learners may talk a lot and remember things that are spoken. The kinesthetic learner likes to move around and touch things and enjoys taking things apart and putting them back together, so activities are a good way to engage this type of learner. As you can imagine, engaging all types of learners can be a challenge, but one that is more easily met with interactive systems.



# Employee Engagement in the Meeting Room

While engaging Millennial students – and even teachers – is a challenge, think about what’s happening in corporations. For people who sit through dozens of meetings each week – some of which feel pretty useless – calculations are ongoing in terms of how much money is being wasted as dozens of well-paid professionals zone out around a deathly boring conference table.<sup>12</sup> Ask a dozen people how to conduct a more effective meeting and you’re likely to get a dozen different answers, but most people will agree that you need a clear goal, open dialog, and a strong leader.<sup>13</sup> One sound piece of advice is to include visual aids – offering a way for everyone to interact, by projecting information and ideas that can be amended by the group on the fly – to increase enthusiasm and give people a sense of ownership, especially Millennials who are used to social networking where everyone is free to offer an opinion, speak and be heard.

You’ve probably attended a meeting or two that lasted four or five hours. You sat in a chair and listened to speakers whip through 400-500 slides. How much did you retain? Plus, did you have a smart phone that may have distracted you for a few minutes? Again, bearing in mind that people now have a desire to interact rather than just absorb information, maybe it’s time to start investing in more creative ways to create conversations and experiences that resemble the future of meetings.<sup>14</sup>

Millennials want to collaborate, and some believe that the way to succeed is to allow them to do that. Gone are the old HR tactics of recruit, train, educate and retain. The new generation is more likely to respond to an approach more closely resembling initiate, engage, collaborate and evolve.<sup>15</sup> In addition, the new generation of workers is shocked to learn that most offices function in ways more primitive than when the Millennial was in high school, and that companies view the internet as a one-way presentation of ideas, rather than a Web 2.0 collaboration of ideas.

A really good place to start changing things is how meetings are conducted. Now is an excellent time to look at interactive systems that allow multiple users to write notes, annotate them in real time, and share them with others in a work team.



# Addressing the Needs of Disabilities

In addition to addressing the needs of Millennial students and employees, technology today is allowing those who are hearing or sight impaired – and those with Attention Deficit Hyperactivity Disorder (ADHD) – to more easily join the mainstream.

In the past, an interpreter was necessary for deaf children or workers to function in the classroom and the meeting room, and a hearing aid was the only technology for those who were hard of hearing.<sup>16</sup> With interactive technology that is projected onto a flat surface, reaching individuals who are hearing impaired can be extremely helpful, since individuals can absorb both the spoken and the projected words or ideas simultaneously.

Interactive technology that encourages collaboration can help with the multisensory needs of a variety of students and employees. For example, a third-grade student with short-term memory issues found color-coding words and emphasizing phonetic values useful when recalling and repeating material.<sup>17</sup> Another great benefit to interactive systems for people with hearing loss is visual communications, which refers to the practice of providing visual (textual) representations of the audio information that is currently lost on people with hearing loss.<sup>18</sup>

It is also suggested that students with ADHD are better able to control impulsive and disruptive outbursts when an interactive system is introduced as a behavioral control mechanism.<sup>19</sup> In addition, students with ADHD – just like other students – learn via the three ways previously mentioned in this white paper: auditory, visual and tactile. For auditory learners, interactive technology would allow them to pretend they're on a radio show so they can better learn to work with others. For the visual learner, allowing them to write or draw on a projected surface adds a fun element to their learning experience. For tactile learners, the hands-on experience of an interactive system is far more likely to engage them.<sup>20</sup>

When images are shown onto a projectable surface, visually-impaired individuals benefit from the size of images and text on the projected surface.<sup>21</sup>



## Interactive Systems that Allow Users to Collaborate

There are interactive systems today that can create a huge boost to both educational and corporate settings. Some technologies rely on a white board, but newer technology is emerging that allows an interactive system to project onto any projection-ready surface without relying on a smart board. The trick is figuring out what you need to look for in this type of technology.

One progressive school district, the Northside Independent School District, San Antonio, Tex., decided several years ago to investigate how to make a better classroom experience. Teachers recommended projectors that allowed internet access, and to show videos, simulations and other presentations in their classrooms. The District wanted the new equipment to be user-friendly so that students would be able to show off their multimedia presentations to the entire class. The District also looked at energy efficiency, reliability, affordability and installation time frames.

# Projecting What You'll Need

Within the District mentioned here, a projector was chosen for its outstanding audio and performance standards. It also has energy-efficiency features that automatically shut if off when not in use. In addition, the projector includes a closed-captioning decoder that helps meet ADA requirements for hearing-impaired students.

Another area that you should consider with an interactive system is the amount of equipment you'll need. Interactive technology that is imbedded into the actual mount will mean less equipment to install, which means faster implementation time. A system that can be used on any projection-ready surface will help eliminate the need for additional equipment such as a screen or white board.

Another key consideration is to make sure that your system can be used with existing projectors. This means you can use the technology in conjunction with what you already have, versus purchasing everything new.

When purchasing any type of interactive system, you should take into account how easily the system can be upgraded or integrated with other existing equipment. The easier the system is to adapt to other technology and prepare for the future, the more likely you will be to use it for an extended period of time.

Schools and businesses often rely on a variety of systems to get work done, including both PC- or Mac-based technology, so make sure your interactive system can be used with both. You should also ensure that the system you purchase is easy to upgrade. Of course, in order to increase collaboration and sharing within your classroom, you should make sure that you have real-time access to the web so you can easily obtain information at a moment's notice. In addition, the system you choose should provide access to an extensive resource library, such as aids for people with special needs like hearing or sight loss, or children with ADHD.



# Results that Count in the Classroom

By not engaging students in the classroom, the consequences can be somewhat dire, including a higher dropout rate at both the high school and college level. In turn, this may mean a less educated workforce and less forward progress for everyone. Millennials are changing the way we study, work and collaborate with each other. It only stands to reason that more collaboration will bring about better results for everyone in the future.

An example of how Millennials function – and function effectively – is the Barack Obama presidential campaign. In 2007, 23-year-old Chris Hughes was asked to work on the Obama campaign. Hughes knew that Obama would have to do things differently to defeat a heavily favored Hillary Clinton. And Hughes knew that what it would take was a people-powered campaign that could only be accomplished by using the internet. Online efforts organized around [my.barackobama.com](http://my.barackobama.com) changed the way politics is played on the ground and online. Instead of trying to control all the messaging from campaign headquarters, people were invited to participate and rally online around a common cause. It changed the way politics operates, perhaps forever.<sup>22</sup>

Within a classroom environment, interactive systems bring a variety of positive outcomes, including:

- Learning sciences research tells us that students learn much better by doing rather than by listening. Interactive systems give students the chance to do both.<sup>23</sup>
- Active learning activities emphasize student problem solving, discussion, presentation and other “authentic” learning-by-doing activities.<sup>24</sup>
- Interactive systems engage students by capturing their attention, and, in the long run, improve their ability to understand and retain information.<sup>25</sup>
- A recent survey of educators revealed that projectors significantly increased student attention and improved the quality of teacher presentations, as well as made it easier to edit and change those presentations for classroom viewing.<sup>26</sup>



- Projectors allow students to connect to real world experiences and view places they may have never seen such as the top of Mount Everest, the rainforest in the Amazon, or your backyard, and provide answers to scientific questions about types of soil, plants, animals, insects, etc.<sup>27</sup>
- Research has shown that teachers who integrate technology into the everyday routines of the classroom are the teachers who motivate their students to learn.<sup>28</sup>
- Some higher education institutions encourage use of technology both inside and outside the classroom to help engage students.<sup>29</sup>
- Interactive technology helps “deliver material in a way that students are more used to seeing at home,” or environments outside school, where students have grown up in a multimedia age that commonly includes technology, digital enhancement and video interaction. Interactive systems allow educators not only to relay information, but engage children in the manipulation of ideas and also engage children with multiple learning styles by using visual, tactile and auditory learning in each lesson.<sup>30</sup>
- Interactive systems allow discussion between teacher and student, and instead of a traditional teacher-centered classroom, there can be a dialogue that maximizes student comprehension. This technology eliminates the traditional model of teacher as expert and the student who merely memorizes and regurgitates information.<sup>31</sup>
- This technology tool is one of the most reliable ways for schools to change the way students interact and learn with the least amount of capital investment.<sup>32</sup>
- Students with ADHD are better able to control impulsive and disruptive outbursts when an interactive system is introduced as a behavioral control mechanism.<sup>33</sup>
- Visually impaired students benefit from interactive systems and when a teacher plays videos on an interactive system, students who would not normally be able to see the images “are finally able to see and interact with a computer image, which is very valuable.”<sup>34</sup>



# Results that Count in the Classroom

Benefits to having interactive systems in the corporate setting are also evident and include:

- Interactive systems help teams of people share ideas, accelerate collaboration and productivity.<sup>35</sup>
- Interactive systems allow presenters to deliver better presentations by enabling them to annotate their presentations.<sup>36</sup>
- Interactive systems allow anyone to interact with and annotate what is being presented.<sup>37</sup>
- With information from your own system and the internet available at your fingertips, interactive systems give you the ability to never be stranded without a crucial fact or figure in the middle of a meeting.<sup>38</sup>
- Interactivity allows you to write, save, move, sort and group your notes from meetings.<sup>39</sup>
- Investing in more effective meetings by purchasing interactive systems can have big payoffs for your company in terms of increased productivity and more efficient group collaborations.<sup>40</sup>
- Virtual conferences become more efficient when attendees are given a visual reference when spreadsheets, graphs, and other meeting material are displayed on remote users' computer screens from an interactive system.<sup>41</sup>

# The Time to Interact and Collaborate is Now

Everyone can generally acknowledge that the world is getting more competitive with each passing day. And whether we're prepared for it, Millennials are going to be running things in the near future. In order to engage and gain maximum productivity with them, we're going to have to meet them in a place that they are familiar with – interactive systems that allow real time collaboration.

Giving both students and workers the opportunity to collaborate not only will more effectively engage them, but will also lead to better learning, productivity and ultimately, will give corporations competitive advantages.

Take a look at an interactive system such as the Chief Interactive Short Throw Mount with eBeam Technology. This system eliminates the need for a specialized white board because you can use any projection-ready surface in classrooms or meeting rooms. Plus, you can engage and motivate students and employees, as well as enhance the entire experience and overall retention of information for everyone involved.

For more information, go to [www.chiefmfg.com](http://www.chiefmfg.com).

# End Notes

- 1 Motivation and Learning in the 21st Century (video), February 7, 2011, [http://en.wikipedia.org/wiki/Generation\\_Y](http://en.wikipedia.org/wiki/Generation_Y).
- 2 "Grown Up Digital," Tapscott, D., 2009.
- 3 "The Final Top 100 Tools for Learning 2010 List," Centre for Learning & Performance Technologies, <http://www.c4lpt.co.uk/recommended/top100-2010.html>.
- 4 "The Integrated Technology Classroom: Building Self-Reliant Learners," Reidl, J., <http://www.suite101.com/content/teaching-to-the-learning-styles-a46133>.
- 5 "A Vision of Students Today" video, Kansas State University, 2007, Wesch, M., cultural anthropologist and 200 student collaborators, <http://www.youtube.com/watch?v=dGCJ46vyR9o>
- 6 "Grown Up Digital," Tapscott, D., 2009.
- 7 "Breaking the Technology Barrier: Using Technology in Education," Wellert, P., January 2, 2011, <http://www.solutionsradio.info/2011/01/breaking-the-technology-barrier-using-technology-in-education/>:
- 8 "A Breakthrough in Learning," <http://www.appliedscholastics.org/study-tech/a-breakthrough-in-learning.html>.
- 9 "A Breakthrough in Learning," <http://www.appliedscholastics.org/study-tech/a-breakthrough-in-learning.html>.
- 10 "A Breakthrough in Learning," <http://www.appliedscholastics.org/study-tech/a-breakthrough-in-learning.html>.
- 11 "How to Make Learning Happen More Effectively," Suite 101, Wagaman, J., February 28, 2008, Teaching to Different Learning Styles: How to Make Learning Happen More Effectively <http://www.suite101.com/content/teaching-to-the-learning-styles-a46133#ixzz1CeE6UVFm>.

- 12 "How to Run an Effective Meeting," Farivar, C., BNet, April 9, 2007, <http://www.bnet.com/article/how-to-run-an-effective-meeting/61211>.
- 13 "How to Run an Effective Meeting," Farivar, C., BNet, April 9, 2007, <http://www.bnet.com/article/how-to-run-an-effective-meeting/61211>.
- 14 "Five Wishes for the Meetings Industry in 2011," interactive meetingtechnology.com, January 3, 2011, <http://interactive.meetingtechnology.com/2011/01/03/five-wishes-for-the-meetings-industry-in-2011/>.
- 15 "Grown Up Digital," Tapscott, D., 2009.
- 16 "Students Who are Hearing Impaired Can Benefit from New Technologies," Suite 101 website, March 18, 2007. <http://www.suite101.com/content/technology-for-hearing-impaired-a16539>.
- 17 "The Aural Enabler: Creating a Way for Special Needs Kids to Participate in the Classroom Lesson," Salintri, G., Smith, K. & Clovis, C., 2002.
- 18 "Technology and people with hearing loss," <http://www.hearinglossweb.com/tech/tech.htm>.
- 19 "Helping All Children Learn: Action Research Project," Jamerson, J., 2002.
- 20 "Teaching Children with ADHD. How does your kid like to learn?" [http://helpguide.org/mental/adhd\\_add\\_teaching\\_strategies.htm](http://helpguide.org/mental/adhd_add_teaching_strategies.htm).
- 21 "Showing, Telling, Sharing: Florida School for the Deaf and

- Blind," Cooper, S. and Clark, S., 2003.
- 22 "Grown Up Digital," Tapscott, D. , 2009.
- 23 "Breaking the Technology Barrier: Using Technology in Education," January 2, 2011, <http://www.solutionsradio.info/2011/01/breaking-the-technology-barrier-using-technology-in-education/>.
- 24 "Breaking the Technology Barrier: Using Technology in Education," January 2, 2011, <http://www.solutionsradio.info/2011/01/breaking-the-technology-barrier-using-technology-in-education/>.
- 25 "Expanding school district gets a boost in interactive technology," Guajardo, A., eSchool News, April 7, 2010.
- 26 "Expanding school district gets a boost in interactive technology," Guajardo, A., eSchool News, April 7, 2010.
- 27 "Expanding school district gets a boost in interactive technology," Guajardo, A., eSchool News, April 7, 2010.
- 28 "Motivating Students to Learn," [http://www.gwinnett.k12.ga.us/HopkinsES/Alfonso\\_Web/ESOL%20Modification%20Research/computers\\_bridge\\_for\\_ELLs.pdf](http://www.gwinnett.k12.ga.us/HopkinsES/Alfonso_Web/ESOL%20Modification%20Research/computers_bridge_for_ELLs.pdf).
- 29 "Strategies for Engaging Students," Farmer-Dougan, V., and McKinney, K., Illinois State University, <http://www.cat.ilstu.edu/resources/teachTopics/tips/actEngage.php>.
- 30 "Reasons Schools Use Smart Boards," Kaufmann, K., eHow.com, [http://www.ehow.com/about\\_5078772\\_reasons-schools-use-smart-boards.html](http://www.ehow.com/about_5078772_reasons-schools-use-smart-boards.html).
- 31 "Reasons Schools Use Smart Boards," Kaufmann, K., eHow.com, [http://www.ehow.com/about\\_5078772\\_reasons-schools-use-smart-boards.html](http://www.ehow.com/about_5078772_reasons-schools-use-smart-boards.html).
- 32 "Reasons Schools Use Smart Boards," Kaufmann, K., eHow.com, [http://www.ehow.com/about\\_5078772\\_reasons-schools-use-smart-boards.html](http://www.ehow.com/about_5078772_reasons-schools-use-smart-boards.html).

- 33 "Helping All Children Learn: Action Research Project," Jamerson, J., 2002.
- 34 "Showing, Telling, Sharing: Florida School for the Deaf and Blind," Cooper, S. and Clark, S., 2003.
- 35 "Interactive meetings: Accelerating collaboration and productivity," Niekamp,R., Corporate Meetings and Events, December 23, 2010, <http://www.corporatemeetingsandevents.ca/Interactivemeetings.aspx>.
- 36 "Interactive meetings: Accelerating collaboration and productivity," Niekamp,R., Corporate Meetings and Events, December 23, 2010, <http://www.corporatemeetingsandevents.ca/Interactivemeetings.aspx>.
- 37 "Interactive meetings: Accelerating collaboration and productivity," Niekamp,R., Corporate Meetings and Events, December 23, 2010, <http://www.corporatemeetingsandevents.ca/Interactivemeetings.aspx>.
- 38 "Meeting Room Makeover," [effectivemeetings.com](http://www.effectivemeetings.com), <http://www.effectivemeetings.com/technology/mrtools/makeover.asp>.
- 39 "Meeting Room Makeover," [effectivemeetings.com](http://www.effectivemeetings.com), <http://www.effectivemeetings.com/technology/mrtools/makeover.asp>.
- 40 "Meeting Room Makeover," [effectivemeetings.com](http://www.effectivemeetings.com), <http://www.effectivemeetings.com/technology/mrtools/makeover.asp>.
- 41 An overview of interactive whiteboards used for data conferencing and collaborative meetings," Osborn, A., October 5, 2005, <http://www.web-conferencing-zone.com/interactive-whiteboards.htm>.

