

# Increasing Empathy and Innovation in Education

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How humanized AI can transform the experience of education for students, teachers, and schools



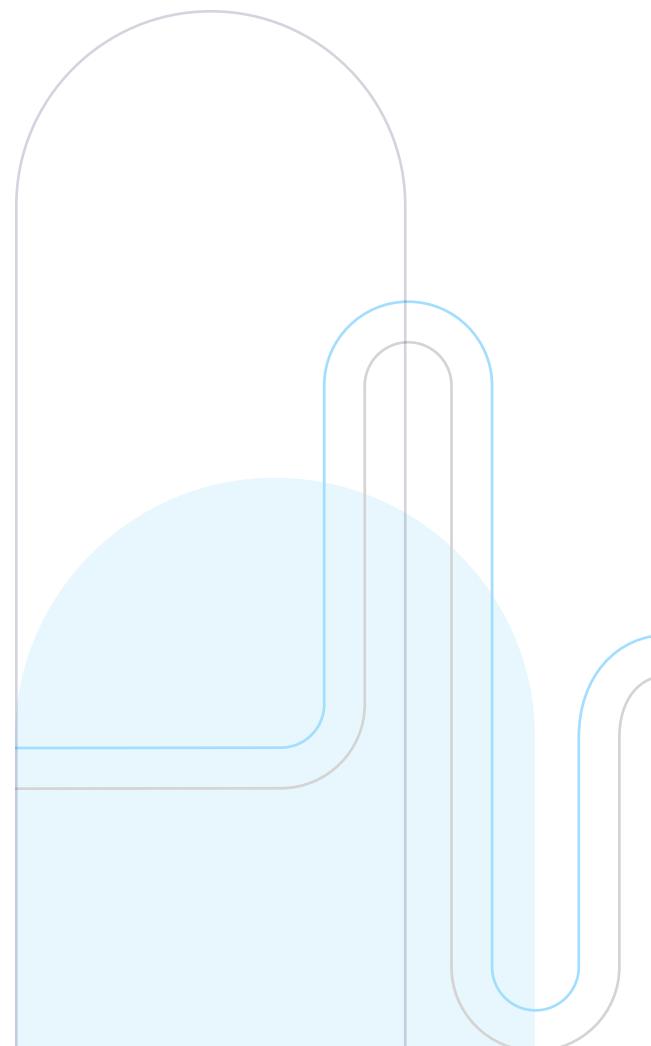
Astonishing Digital People





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# The Education Landscape

Some twenty years ago, spurred on by market competition and the desire to be innovative, institutes of higher learning began offering eLearning experiences, combining video presentations with online access and test-taking. What began as a sort of “necessary experiment” in the early 2000s has now become commonplace and, indeed, the expected norm.

Thanks to rapid technological development and increasing access to the Internet worldwide, there has been unprecedented growth in the quality, quantity, and variety of eLearning offerings, with products suitable for all levels and types of education from kindergarten to graduate school and corporate learning and development.

As businesses, schools, and educational institutions have been forced to operate remotely because of the pandemic, online learning has accelerated even further,

advancing not only the use of digital tools but their acceptance by both teachers and students of all ages and generations.

The expansion of the eLearning market is not due solely to the effects of the pandemic. According to Statista, the global eLearning market was worth US\$165 billion in 2016; that figure is expected to surpass US\$243 billion in 2022. This includes the use of eLearning for corporate training and development programs as well as in traditional education.

# Growing Need, Expanding Market

**Market research** on e-learning in the United States indicates that 63% of high school students in the U.S. use digital learning tools daily. But digital learning is not just for teenagers: nearly half of all elementary school students (ages 6 to 12) and 64% of middle school students (12 to 14 years old) make use of at least one digital learning tool every day.

At the university level, a significant percentage of American graduates (52%) and undergraduates (39%) consider online learning better than classroom learning.

According to **Global Market Insights**, Artificial Intelligence (AI) in Education Market size exceeded USD 1 billion in 2020 and is expected to grow at a CAGR of over 40% between 2021 and 2027. Rising demand for interactive learning solutions to enhance the learning experience is likely to drive the industry growth. It helps in improving students' learning styles and offering personalized tutoring and high-quality education to the students by gauging their pre-existing knowledge and learning.



AI in Education is expected to grow at a CAGR of more than 40% between 2021 and 2027.

# Driving Digital Natives

It may be tempting to believe that the widespread acceptance of digital learning by today's students is solely due to the fact that they are "digital natives", used to interacting via screens. But there is more to the story.

Research has shown that digital learning helps to improve students' learning styles. In fact, in 2020, 41% of students indicated that the quality of their online university-level learning experience was better than their classroom instruction (whereas 15% felt it was not as good).

In addition, students find digital learning technologies very helpful for doing their homework and organizing their schedules. Research from **Statista** shows that 81% of university students in the U.S. agree that digital learning technology is helping them improve

their grades and 43% found digital study technologies extremely helpful for doing homework.

And with 5G technology becoming more prevalent worldwide, we will see learners and solution providers truly embracing the concept of learning anywhere, anytime in a range of formats. Artificial intelligence (AI) and the use of natural language processing will help bring the responsiveness and personalization necessary to provide both teachers and students with customized learning solutions.

For those who do have access to the right technology, there is evidence that learning online can be more effective in a number of ways. Some research shows that on average, students retain 25-60% more material when learning online compared to only 8-10% in a classroom.

This is mostly due to the students being able to learn faster online; e-learning requires 40-60% less time to learn than in a traditional classroom setting because students can learn at their own pace, going back and re-reading, skipping, or accelerating through concepts as they choose.

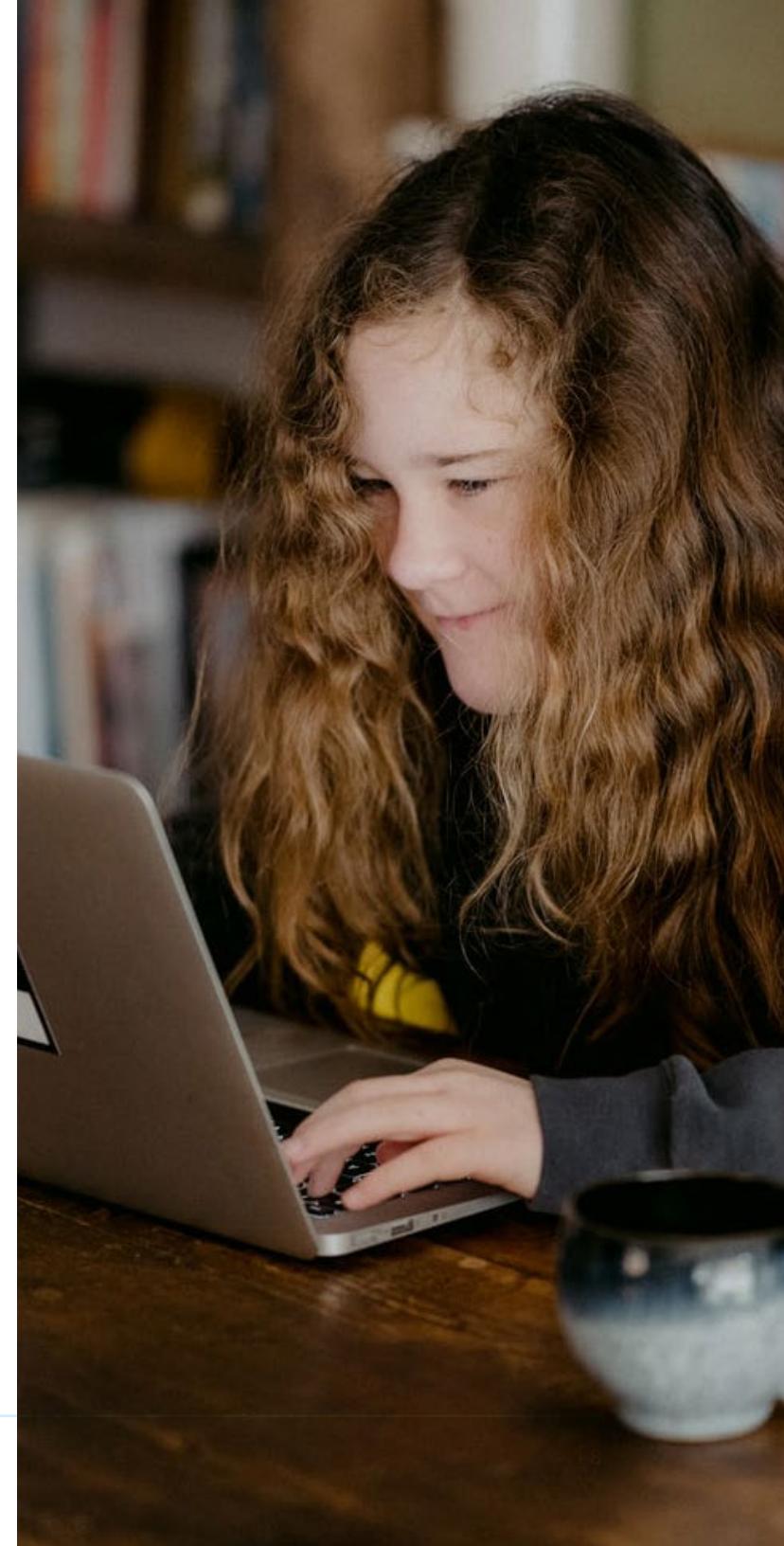
– World Economic Forum

# Face-to-Face Innovation

One of the most critical elements in any education experience is the type and quality of interaction with the teacher. It seems such an obvious concept that we often take it for granted. But in an increasingly online learning situation, how can we ensure that each student has the right amount and kind of communication and interaction?

Teachers have been trained to deliver learning in a classroom situation, one person providing face-to-face interaction with many at a time, with individual interactions taking place either in the context of the classroom or perhaps outside of class time.

But in an online environment, it is exceedingly difficult for teachers to receive the visual clues which might signal difficulty in understanding a concept, or a need for individual attention. This is where both teachers and schools need innovative solutions that not only allow students to benefit from individualized instruction but also fully utilize visual communications to complete and enhance the educational experience. Chatbots and avatars are commonly used to simulate interactions, but because they lack the perception and empathy, these tools cannot provide the attention and personalization that will help students grow.



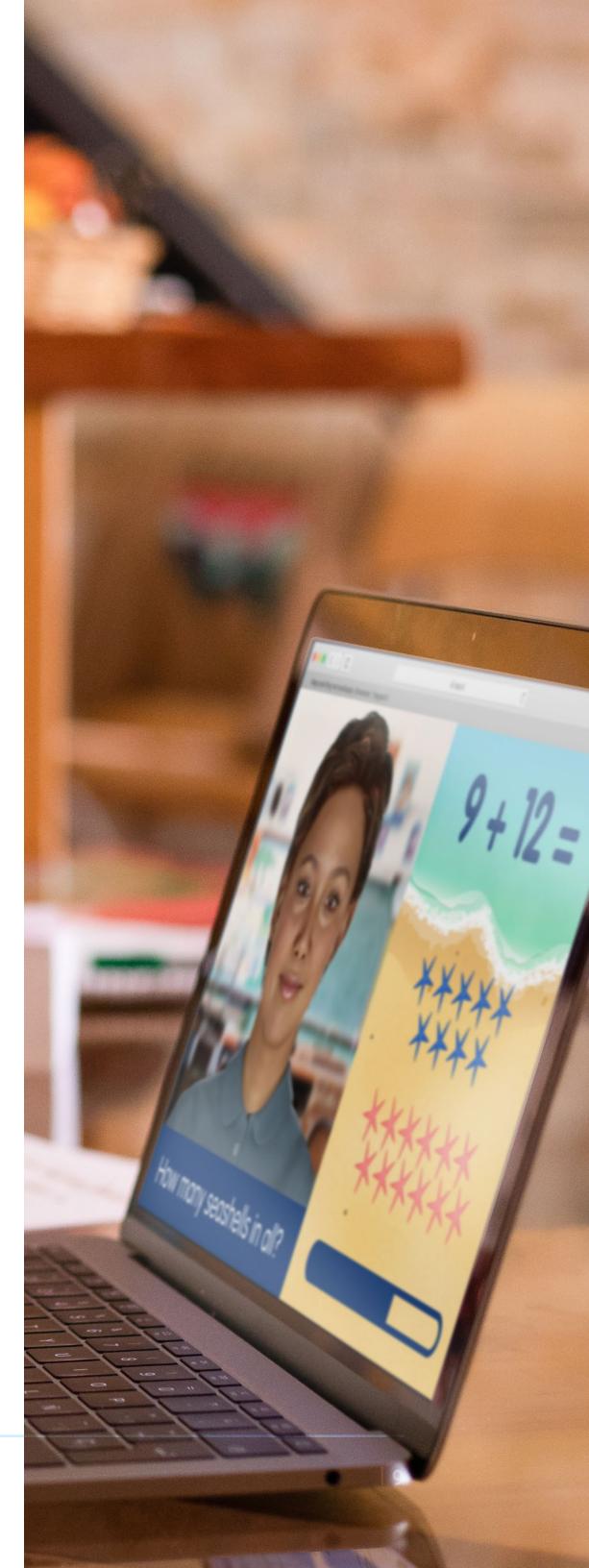
# Digital People Can Transform the Experience

This is where Soul Machines can help. Since 2016, Soul Machines has been humanizing AI with visual communication that is based on the use of Digital People™ who have the capacity to process complex information, take input, and respond accordingly.

Thanks to a patented Human OS Platform with Autonomous Animation, the Digital Person is able to contextualize interactions, interpreting such difficult elements as tone of voice, cadence and even facial expressions.

Soul Machines' researchers have successfully created a Digital Brain that replicates the way humans handle everyday interactions by combining models of physiology, cognition, and emotion. Its proprietary technology allows its Digital People to be fully autonomous and authentic in their responses.

Soul Machines' Digital People are emotionally intelligent, infinitely scalable, and adaptable to learners' needs, which enables them to engage directly with students and help ensure their success from enrollment to academic coursework and through career development.



# It's Not What You Say, It's How You Say It

Unique in the conversational AI industry, Soul Machines' Digital People can see, understand, and relate to customers autonomously in real-time and in as many as 12 languages. This enables Soul Machines' Digital People to be engaging, thoughtful, and relatable, demonstrating the best of empathic human behavior.

In fact, the Digital Brain with its Autonomous Animation allows Digital People to respond to difficult situations with greater ease than their human counterparts. In certain cases, where an individual might have to reveal awkward information, Digital People actually present an advantage over humans.



Multiple studies have shown that artificial humans can improve people's willingness to disclose sensitive information<sup>1</sup>, increase feelings of comfort in situations where someone might have to admit to something negative<sup>2</sup>, and they also reduce customers' fears of human judgment<sup>3</sup>.

Because Digital People are designed using natural language, they are perceived by the user as being dynamic and engaging. By transforming impersonal online interactions into meaningful visual connections at scale and across any platform, this human-machine collaboration enables students to feel supported and this can greatly enhance the experience of education – at any age.

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1 Gratch, Lucas, King, & Morency, 2014, Lucas et al., 2017

2 Pickard, Roster, & Chen, 2016

3 Pickard, Roster, & Chen, 2016; Lucas et al., 2017

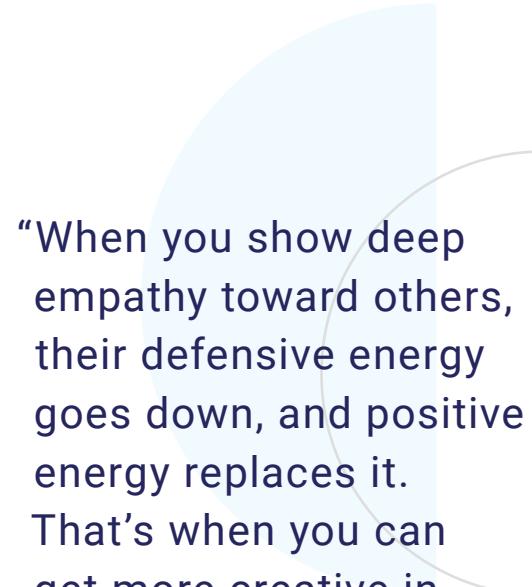


# Empathy in the Classroom

Science tells us that we are born curiosity-rich and attention-poor. Incorporating Digital People into the classroom experience can stimulate curiosity and retain attention by creating real-time, individualized interactions that are filled with emotional responses.

There are a number of ways in which Digital People can serve to expand and/or enhance the classroom experience. For example, in K-12 education, young children relate easily to on-screen counterparts and actively seek out interaction with the Digital People out of curiosity and a desire for fun. This can be a great tool to incorporate gamification educational techniques and enhance math learning skills, logic, and decision-making.

A leading company in the energy sector has collaborated with Soul Machines to develop and bring “Will” to the classroom. Will is a convincing and engaging Digital Teacher who interacts with kids to teach and quiz them playfully about sensible energy use from solar and wind.



“When you show deep empathy toward others, their defensive energy goes down, and positive energy replaces it. That’s when you can get more creative in solving problems.”

– Stephen Covey



"We needed to find a novel, engaging medium to get the attention of the next generation around energy. So, we thought of applying cutting-edge technology to try to have that conversation," said Nikhil Ravishankar, Chief Digital Officer at Vector. "What was fascinating to me was the reaction of the children to Will. The way they look at the world is so creative and different, and Will really captured their attention."

Digital People can track a gaze, detect a focus, classify facial and vocal expressions. Given the context of the ongoing conversation, they interpret these signs as excitement, enthusiasm, or on the contrary anxiety or

discouragement. They can then adapt to the student's level of skills and interest, and respond with emotionally appropriate facial expressions, a tone of voice, the direction of their gaze.

Like a human educator, Digital People can detect if a student is struggling to comprehend a concept and adapt the conversation accordingly, offering for example to re-explain a topic using a different illustration. Such personalized connections boost students' confidence, enabling the students to participate and ask questions without fear of judgment by teachers or peers.

# Beyond Reading, Writing, ‘Rithmetic

But the classroom is only one small part of the experience of education, particularly as students reach the university level. When students drop out of university, it is rarely because of the level of difficulty experienced in the classroom. Rather, the reasons for leaving school most often center around difficulty with the emotional, mental and social aspects of university life. Educators are increasingly realizing that they need to address these issues in order to ensure the retention of students and, ultimately, their success.

How can Digital People help address the issues students face that are not, strictly speaking, related to the classroom?

To enhance the students' overall experience, Digital People can be used to provide such assistance as:

- Campus orientation and security
- School communications
- Course recommendations and registration
- One-to-one counseling, whether on academic affairs or mental well-being
- One-on-one coaching and mentoring
- Assistance with school administrative processes, such as registering for classes or filing for financial aid
- Advising on international exchange programs
- Linguistic programs

Take the case of **Maryville University**, which recently launched their Digital People, Mya and Emma, as part of their in-house life-coaching program.

Representing Maryville's diverse student body, Mya and Emma guide both prospective and newly enrolled students through their first few months at the university and beyond. They help students figure out how to fill their FAFSA application paperwork, share information about school spirit and culture, and even advise on academic and career planning.

Instead of impersonal training or sifting through pages and pages of information, Mya and Emma provide a highly personal way of connecting with students and setting them up for success. Not only does it show Maryville's commitment to the student experience, but it also sets the tone for the rest of their stay, introduces them to the culture, and creates a highly engaged community.

For an institution, the benefit of providing a scalable and empathic digital support system will improve its students' success rates and retention ratios, and also raises awareness of their brand.



# Diversity, Equity, Inclusion

One of the most critical topics facing educators at all levels is the issue of diversity, equity and inclusion. Soul Machines' Digital People are an excellent tool to assist schools and educators in ensuring an open, unbiased educational experience that benefits from the many and varied lived experiences of its students.

Each Digital Person can be tailored to reflect the diversity of the student body. Digital People can prove very attractive and engaging for new students (and their parents), knowledgeable and reliable. They are designed to eliminate bias, ensuring that all students, regardless of their status, are provided with equal resources and spared from misinformation.

Every one of Soul Machines' Digital People is unique. Soul Machines works intensively with customers to develop the look and language that embodies a

learning institution's mission, brand, voice and ideals, including the following features:

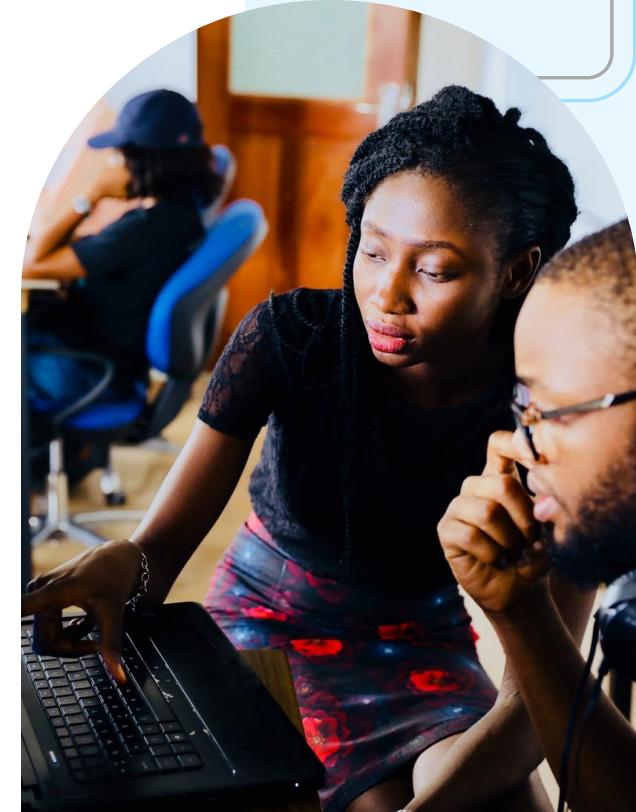
- Privacy
- Security
- Ethical AI
- Multimodal experience
- Hold internal emotional state
- Express digital person's emotions
- Observe users' expressions of emotions
- Empathetically react to users' emotions
- Manifest personality

# Conclusion

Personalized online learning is the future of the education industry. Using Digital People helps to bridge the gap between the traditional classroom and online learning, providing visual communications based on emotion-driven, individualized interactions. By helping to address issues such as motivation, dropout rates, and distractions, AI can be utilized to personalize the experience of education for students as well as teachers and help schools build lifelong relationships with their students and alumni.

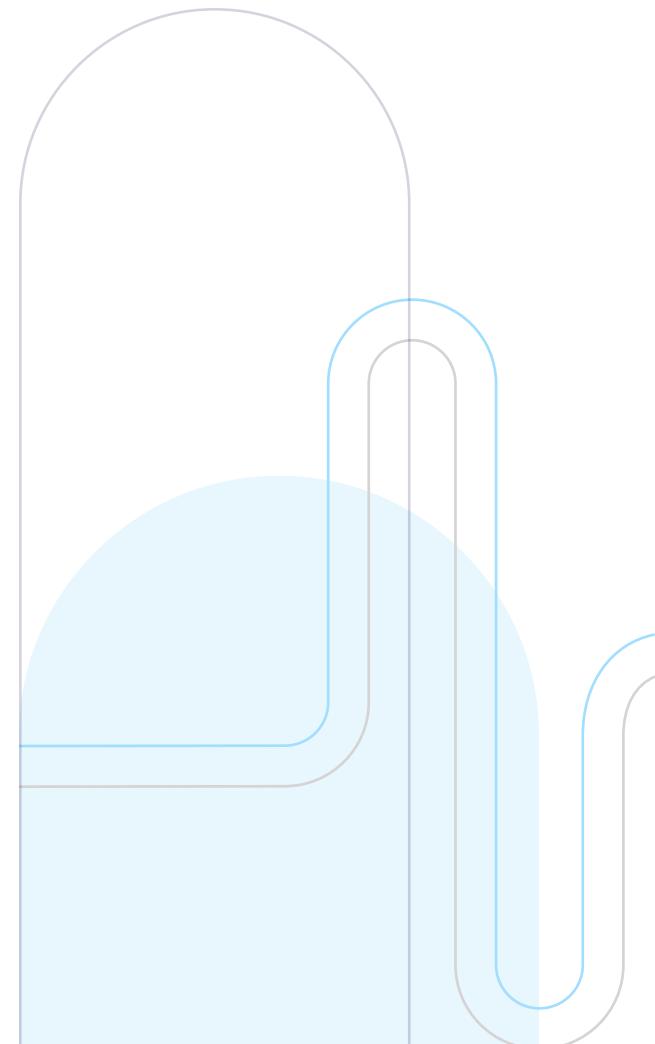
Digital People allow schools to connect with students where they are, both academically and socially; create highly personalized experiences; fully support diversity, equity, and inclusion; engage and stimulate students; and increase students' success rate.

With the development of Digital People who fully embody the school's mission and values, education institutions can expand services and attract more students while also reducing costs and improving efficiency. A short-term investment for long-term growth.



# About Soul Machines™

Soul Machines is a global pioneer in humanizing AI, dedicated to delivering the full capabilities and goodness of human and machine collaboration in a responsive, relatable and unprecedented way. Composed of some of the world's best AI researchers, neuroscientists, psychologists and innovative thinkers the company's unparalleled autonomous animation – featuring its patented Digital Brain – brings technology to life by creating dynamically interactive and emotionally responsive Digital People with personality and character that allow machines to talk to us face-to-face. Soul Machines has deployed the world's first Digital People with some of the biggest corporate brands in the world in Financial Services, Technology, Automotive, Healthcare, Entertainment, and Education industries. Soul Machines currently has over 200 employees with offices in San Francisco, Los Angeles, New York City, London, Tokyo, Melbourne and Auckland. For more about Soul Machines, visit [soulmachines.com](http://soulmachines.com).



Interested in how we can help you revolutionize  
your customer relationships? Request a Demo ▶

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