

How can A.I. technology data help educators to identify students'™ academic strengths and weaknesses to achieve learning goals?

Description



There is a big buzz about A.I. being incorporated into all areas of our lives after ChatGPT's™ successful debut last year. Ever-evolving AI technology is a threat to some, with realistic concerns over A.I. replacing our jobs to extreme fear of A.I. destroying humanity. Throughout history, inventions always come with some price and fear until it proves themselves and fulfills their purpose. As philosophical as it sounds, being proactive with the technology already evolving so rapidly is inevitable, especially for educators responsible for preparing students for the real world. Adopting A.I. into our education is not something new. A.I. has already been built-in into many learning management systems (LMS) using machine learning algorithms to provide analytical data on students'™ activities (Ed Tech, 2023).

There are many ways A.I. can incorporate into LMS:

- Learning analytics platforms that use data from various sources, like student grades, attendance records, and online activity, to identify patterns and trends that can help educators assess and identify areas where students need additional support.

- Adaptive learning platforms use A.I. algorithms to analyze student performance and adapt the learning experience to suggest content and pacing to match individual learners'™ needs.

- Intelligent tutoring systems use A.I. to provide personalized instruction and student feedback based on their progress.

• Natural language processing tools can analyze student responses to open-ended questions and provide responses personalized to their specific needs.

• Predictive analytics tools use data to identify students at risk of falling behind or dropping out, allowing educators to intervene and provide targeted support (Microsoft Education Team, 2022).

Widely used platforms like Google Class, Khan Academy, and others are joining the movement of AI-powered tutors, using data analytics to identify students' strengths and weaknesses and giving real-time feedback to suggest individualized resources and learning lessons. Studies have shown that AI-powered LMS improves student engagement and academic performance (Ribeiro et al., 2021). It also significantly cuts the workload for educators, giving them more free time to work with comprehensive student data to focus more on achieving students' learning goals.

Question: How can A.I. technology data help educators to identify students' academic strengths and weaknesses to achieve learning goals?

Solution:

Century Tech offers an A.I. platform that blends student data with cognitive neuroscience to generate personalized lesson plans. By closely monitoring each student's progress, the A.I. system identifies areas of weakness in their learning and provides tailored study recommendations and feedback. This customized approach reduces teachers' workload by assisting educators with lesson planning and grading. Furthermore, Century Tech guides educators in adopting new tools that automate routine tasks, thus making teaching more efficient. A platform like Century Tech makes it easier for educators to monitor and analyze students' data and make the most out of individualized learning plans.

What distinguishes them in the A.I. education market is that they developed an assessment tool that integrates the initial assessment with the ongoing learning progress and combines adaptive assessments with competitive functional skills content with proven learner outcomes. Also, the Smart IA tool they designed maximizes the accuracy of the results with minimal testing time. It allows for efficient adaptive initial assessments and suggests necessary learning contents through micro-lessons called "Nuggets."

OUR PROCESS



Initial assessment

Quickly determine ability levels



Diagnostic assessment

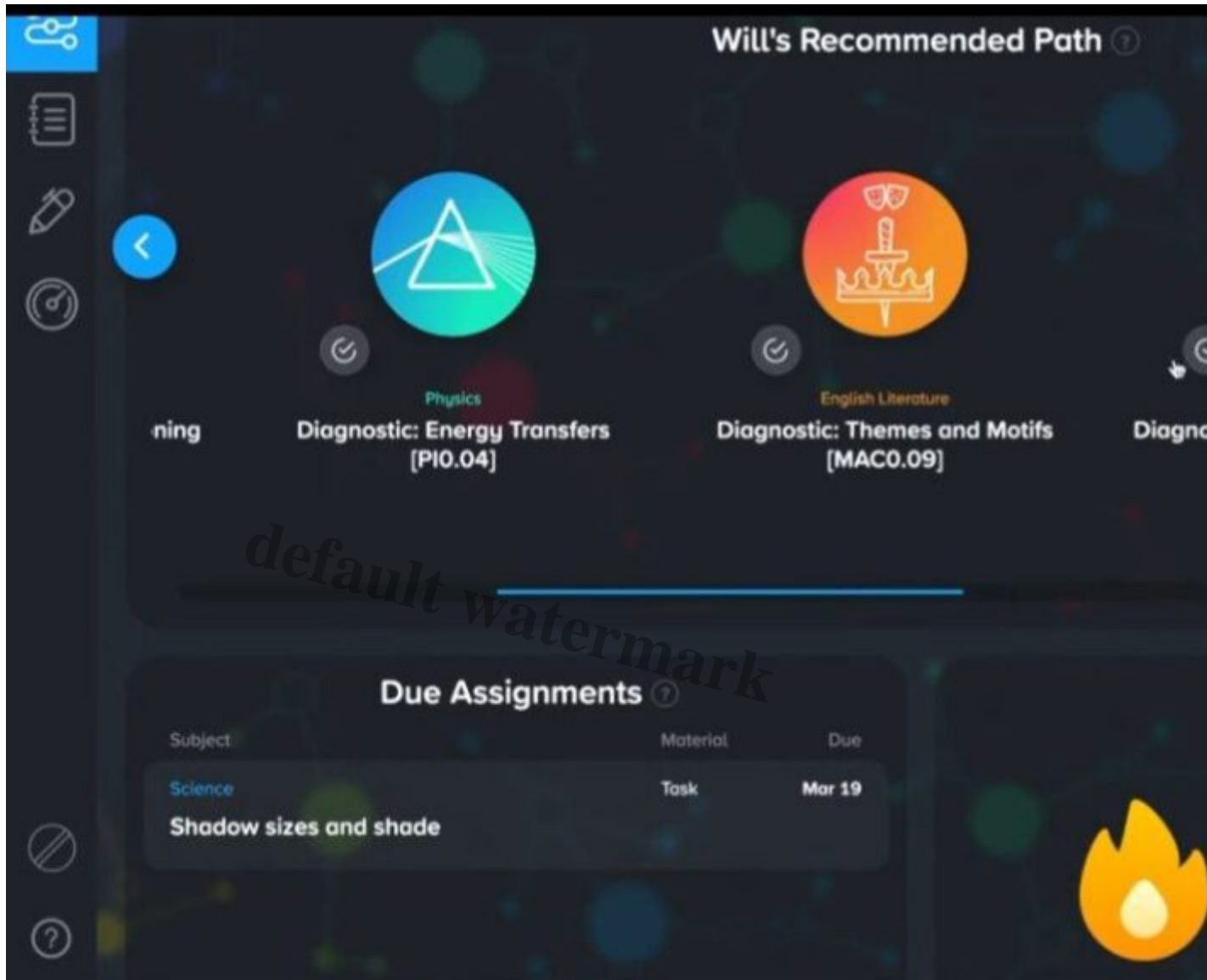
Identifies learning gaps and misconceptions



Recommended path

Unique learning plan with content to improve skills and understanding

Learners are continually assessed and given feedback

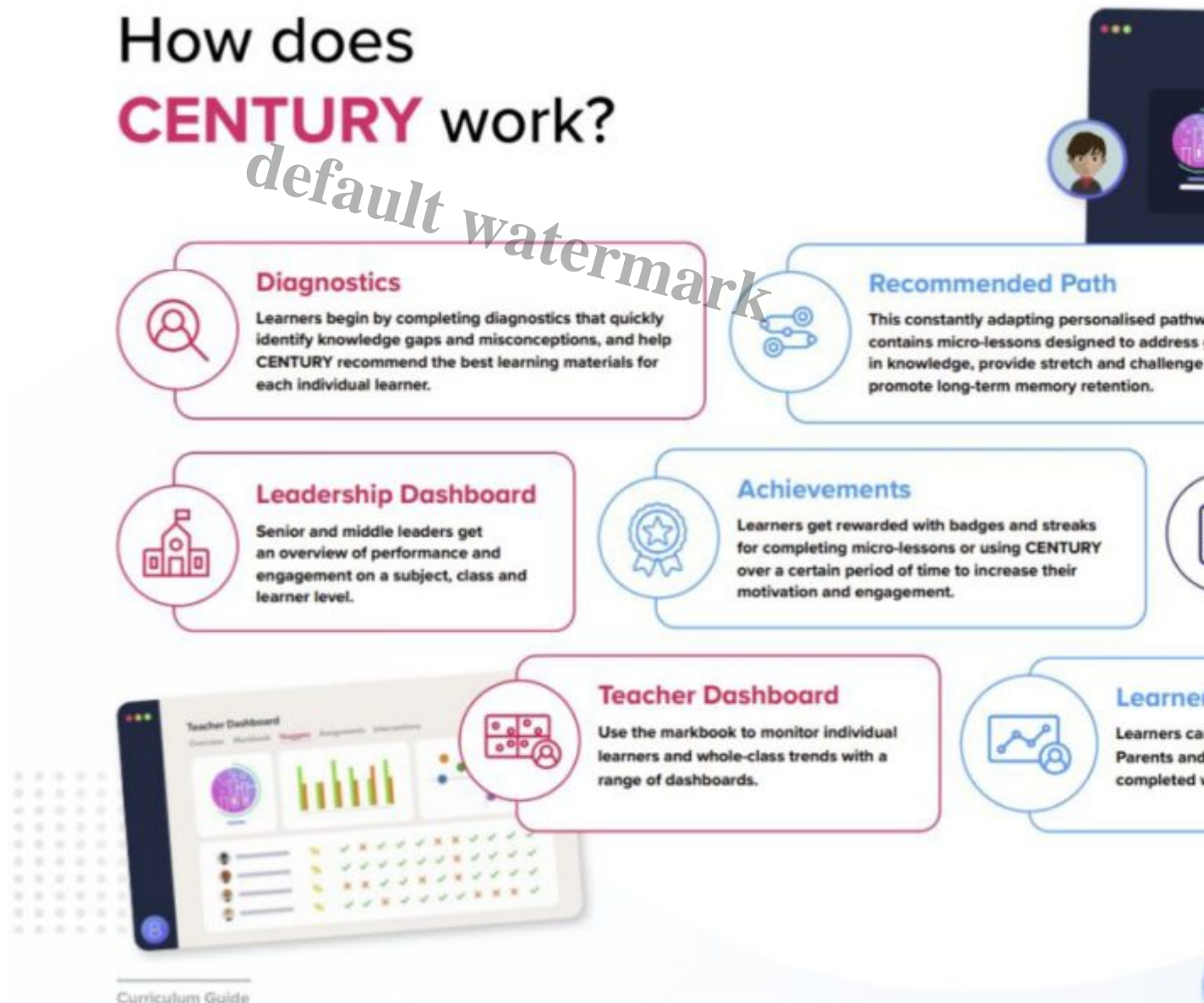


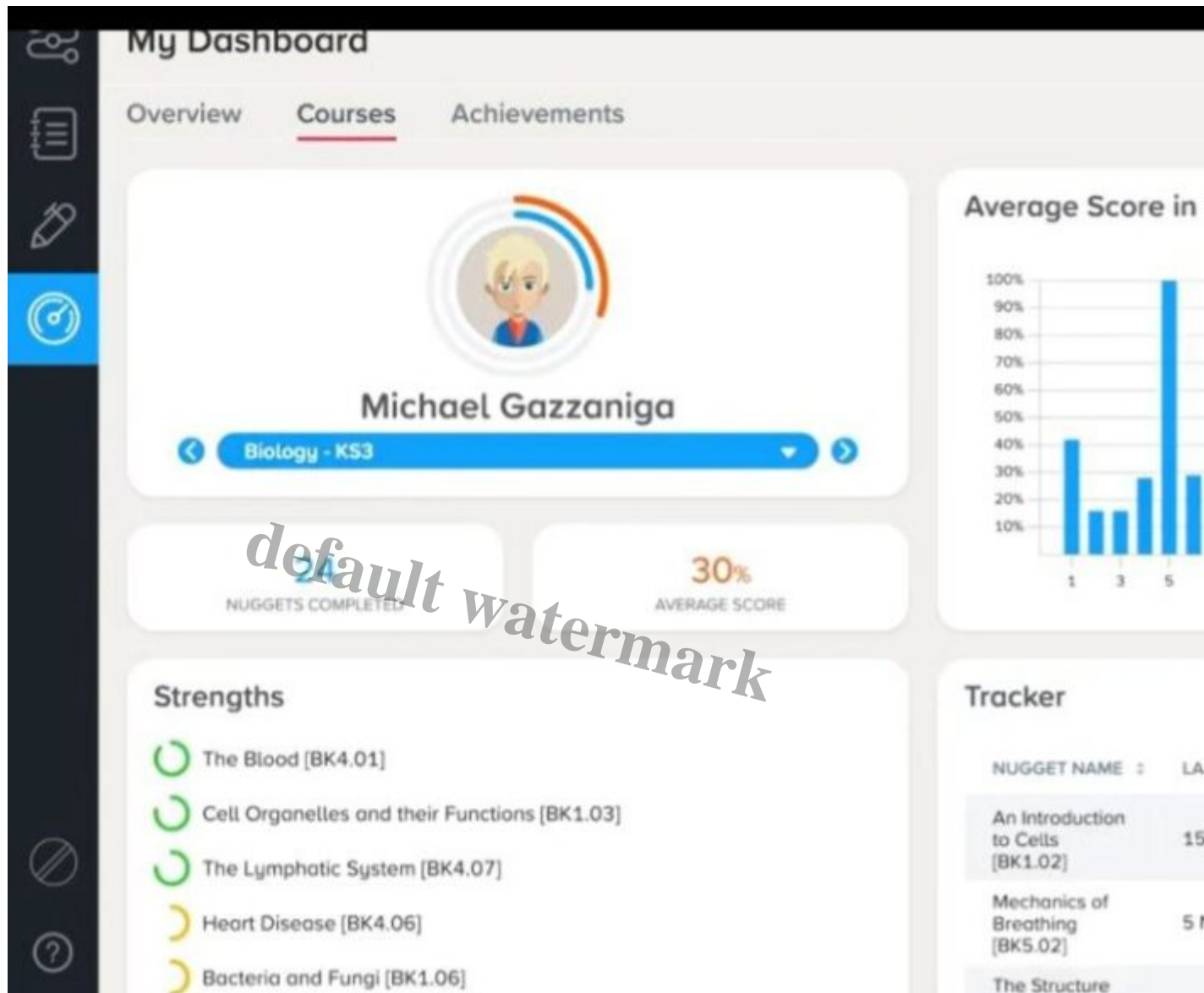
Century Tech received several awards and recognition for its innovative AI-powered teaching and learning platform. It was named a Gold Winner at the 2021 Learning Technologies Awards for Best Use of Learning Data Analytics to Impact Learner and Business Performance™. It was also awarded the prestigious CogX award for Best A.I. Product in Education in recognition of the platform's strong growth over the past year. However, there needs to be more published research on Century Tech and its impact on improving student achievement. According to their website, a small-scale study conducted by Northampton University, U.K., using Century Tech with a group of 50 secondary school students resulted in an average increase of 29% in math scores over 12 weeks. A teacher in the U.S. reported that her students who used Century Tech scored higher on state tests than those who did not use the platform. Similar results from another school in the U.K. reported an improvement in the GCSE results of students who used the platform. Based on Century Tech's case studies, overall grades of users increased by 23% in math and 26% in science. Definitely, there needs to be more research done to determine its overall effectiveness and long-term impact.

To get started with Century Tech, students and teachers first create an account on the platform. Once logged in, students have a dashboard that displays their progress and performance on different tasks

and assessments. From here, they can access personalized learning paths tailored to their needs. As highlighted earlier, one of the key features of Century Tech is its adaptive assessments, which assess a student's current level of knowledge and identify areas where they need additional support. These assessments are adaptive, meaning they adjust to the student's performance in real-time, providing a more accurate and personalized measure of their knowledge and understanding. Based on the results of these assessments, Century Tech generates a personalized learning path for each student. This path includes a series of tasks and activities that are designed to help the student master specific skills and knowledge areas. Again, the platform provides real-time feedback and support throughout the learning process, helping students to stay on track and achieve their goals.

How does CENTURY work?





The science behind it is that Century Tech uses a variety of algorithms to identify a student's weaknesses. Here are some of the key A.I. algorithms used by the platform according to their website:

Mastery-based learning: Century Tech uses a mastery-based approach, which means that students must demonstrate a certain level of understanding before moving on to new material. The platform identifies areas where students may be struggling and provide targeted support.

Data analytics: Century Tech collects data on student performance and uses data analytics to identify patterns and trends, allowing the platform to provide personalized feedback and support based on each student's needs.

Adaptive difficulty: The platform adjusts the difficulty level of content based on the student's performance, ensuring that they are appropriately challenged and not overwhelmed or bored.

Learning analytics: Century Tech uses learning analytics to track student progress and identify areas where they may need additional support. This includes tracking how much time students spend on each task, which tasks they struggle with the most, and which skills they have yet to master.

Natural Language Processing (NLP): The platform uses NLP to analyze student responses and provide personalized feedback. It allows the platform to identify common misconceptions and provide

targeted support to help students overcome them (Retrieved from Century Tech website).

There are pros and cons to using the Century Tech platform. Some of the benefits are (Bing, 2023):

Personalized learning: Century Tech uses A.I. algorithms to create personalized learning paths for each student based on their abilities and learning styles.

Continuous assessment: The platform constantly assesses students' progress and provides feedback to help them improve their understanding and performance.

Adaptive difficulty: Century Tech's A.I. algorithms adjust the difficulty level of the content based on the student's performance, ensuring that they are appropriately challenged.

Comprehensive data analytics: The platform provides teachers with detailed data analytics, giving them insight into individual student progress and areas for improvement.

Possible downsides are:

Limited subjects: Century Tech's content is currently focused on math and science subjects, limiting its utility for other areas of study. It is also tailored for U.K.'s curriculum and needs to adjust some lessons to fit curriculums in the U.S.

Limited student/teacher control: The A.I. algorithms used by the platform may not always align with a student's learning goal or teacher's preferred teaching methods, limiting the teacher's ability to customize the learning experience.

Potential for data misuse: Data misuse is always risky with any technology that collects and analyzes personal data. Century Tech must ensure that it is using student data ethically and transparently.

Cost: The platform's cost may be a barrier for some schools and institutions that cannot afford to pay for the service.

Conclusion

Regarding A.I. in education, I suggest that instead of being overwhelmed by technology, see it as a tool. It is not replacing the teacher but empowering the teacher to do more. There is a legitimate concern due to the adaptability and evolving nature of A.I. An updated report by UNESCO stressed the need for ethical guidelines and regulations around using A.I. in education (UNESCO, 2019). However, we must recognize its benefits and improvements for students and educators. *ISTE standards for Educators 2.7 Analyst states that educators understand and use data to drive their instruction and support students in achieving their learning goals. Educators should also;* 2.7. a Provide alternative ways for students to demonstrate competency and reflect on their learning using technology. 2.7.b Use technology to design and implement a variety of formative and summative assessments that accommodate learner needs, provide timely feedback to students, and inform instruction. 2.7.c Use assessment data to guide progress and communicate with students, parents, and education stakeholders to build student self-direction. As with any technology, if used with caution and a critical mindset, platforms like Century Tech can be a great tool to identify and improve students' academic weaknesses and empower educators to become analysts to use assessment data to enhance student learning.

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1. Blog

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