intel®

Intel vPro® Platform
Catalyse Education Transformation with Intelligent Teaching Tools

浙江教育用品发展有限公司
ZHEJIANG EDUCATIONAL EQUIPMENTS DEVELOPMENT CO.,LTD.

"Zhejiang Educational Equipments has been committed to providing various customized educational software and teaching facilities for educational applications. We have noticed that the informationization transformation in education is more of a technology-driven phenomenon; how to better integrate cloud computing, artificial intelligence, and other technologies with education and teaching has always been on our agenda. ESA, the integrated equipment based on Intel® Unite® solution and Intel® vPro® platform, has become a real thrill as an intelligent education program that makes teaching easier, the learning process more efficient and the school management more convenient."

Zhang Lei
Technical Director
Zhejiang Educational Equipments
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Zhejiang Educational Equipments Development Co., Ltd. (hereinafter referred to as Zhejiang Educational Equipments) has launched ESA, the all-in-one smart education equipment based on Intel® vPro® Platform and Intel® Unite® Solution in an attempt to better implement the Education Informatization 2.0 Action Plan issued by the Ministry of Education, address the long existing problems in interactivity between teachers and students, collaborative preparation of classes among teachers as well as remote equipment management. The ESA offers three solutions, i.e., smart wall-mounted all-in-one device, interconnected blackboard and all-in-one whiteboard, which meet the demands in different scenarios such as teaching activities and classroom study. It also helps to create smart classes, facilitate the smart deployment and effective use of IT resources at schools, enhance the capabilities of teachers in IT application, and provide more advanced and smarter resources and models for teaching and learning. In such a way Zhejiang Educational Equipments takes the lead in IT-oriented transformation of schools to accelerate educational modernization and contribute to the development of strong education in China.

Advantages of the all-in-one ESA equipment:

- Intel® Unite® Solution supports the multi-screen information sharing and interactivity on Windows, Android, OSs of Apple and Linux in a way that the all-in-one EAS equipment allows distant teacher-student interactions, synchronous teaching display and sharing.
- Intel® vPro® Platform embodies the powerful feature of remote maintenance. This makes it easy to remotely report and handle the repair and maintenance requests of the all-in-one ESA equipment, ensuring that teachers focus more on teaching and innovation.

"What makes the world well ruled lies in talents, yet talents can only be cultivated with good education which, however, depends on how thoroughly Confucianism is revered. That said, the responsibility to promote good education among the people lies in the government officials while the root of education lies in schools." The fore-said words by Hu Yuan, a famous educator in the Northern Song Dynasty clearly expounded on the relationship between talent, education, and schools. For thousands of years, the leading role that schools play in education has been beyond doubt.

In 2018, the Ministry of Education issued the Education Informatization 2.0 Action Plan, pointing out that schools should strengthen informatization efforts and putting forward a development goal of achieving "three-application coverage, two improvements and one big platform" by 2022. The said "three-application coverage" means that teaching applications should cover all teachers, and learning applications should cover all students who are of appropriate age while digitalization should cover all campuses;

- Intel® Unite® and vPro® Terminal Hardware
- (Lenovo, Dell, HP)
- Multimedia Device
- ESA Client
- ESA Intelligent IoT Management Platform
- Provide 8/5(h/day) remote online support service

Coupled with an Interactive All-in-One Touch Panel Equipment

Figure 1 ESA Equipment Based on Intel® vPro® Platform and Intel® Unite® Solution and A New Type of ESA-Based Multimedia Modality.

the "two improvements "means that the informatization level and the awareness of teachers and students in this regard should be both improved; the "big platform" refers to the big "Internet+ Education" platform.

In order to further speed up the process of Education Informatization 2.0, we need to effectively solve such problems we are facing as the problem in interactivity between teachers and students, in collaborative preparation of classes among teachers and in remote management of equipment. Zhejiang Educational Equipments Development Co., Ltd. (hereinafter referred to as Zhejiang Educational Equipments) has launched ESA, the all-in-one smart education equipment based on Intel® vPro® platform and Intel® Unite® solution to advance the deployment of school resources, enhance the awareness of IT application of the faculty so that students enjoy more intelligent and state-of-the-art teaching resources.

The all-in-One ESA equipment is a combination of Intel's hardware, solution and the ESA APP developed by Zhejiang Educational Equipments to support scenarios of both classrooms and offices. The ESA equipment, featuring three solutions, namely, the Intelligent wall-mounted all-in-one machine, the Interlinked blackboard and the integrated whiteboard, aims to facilitate schools to build smart classes, and to enhance communication and interaction between faculties and students.
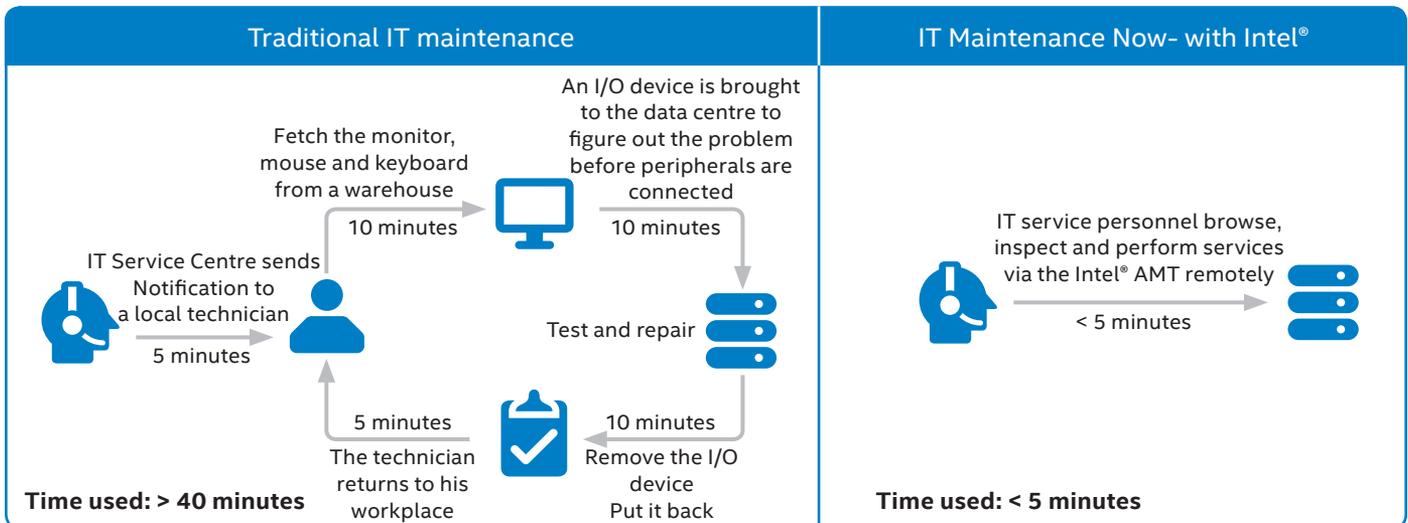
It also serves as a convenient office for faculties with which collaboration and discussion among teachers can be achieved easily. At the same time, with a unified ESA application interface and a built-in management platform, schools are well equipped to manage all teaching equipment in a unified manner for remote maintenance.

Free teachers from the podium when smart classrooms make multi-screen remote interaction possible

With the Intel® Unite® solution, The ESA Equipment enables people to share their screens and files in real time as a seamless audio-visual communication is established. It helps build better engagement of and interactions between teachers and students during the teaching process, thus a great chance to promote remote teaching practice.

Only a 6-digit PIN code is required before a secure, seamless connection between teachers and students is made.

Multi-screen interaction helps free teachers from the podium: Intel® Unite® solution supports all types of multi-screen information-sharing interactions, with wonderful compatibility among Windows, Android, iOS and Linux systems. Users can enjoy real-time, two-way multi-screen interactions.

Figure 2 Comparison of time used for IT maintenance previously and now with Intel® AMT

By making good use of our ESA equipment based on the Intel® Unite® solution, teachers and students can achieve real-time interactivity with their laptops, tablets, cell phones or the like, breaking through the limitations of physical classrooms, so that teachers can demonstrate mobile teaching and that students can share group discussion process or the results on a large screen in real time. In so doing, teachers interact with more students and adjust the teaching schedule in a timely manner, according to feedbacks from students, to achieve personalized teaching, and make teaching more equitable and comprehensive.

Access multiple participants at the same time for seamless remote sharing: Intel® Unite® solution can support up to four participants to project different contents on a large screen at the same time, while others can view the presentation on the screen on their own device and interpret or edit accordingly. They can even exchange files to enhance engagement and understanding.

The seamless sharing of remote resources can effectively address the dilemma of uneven education and unbalanced distribution of teaching resources among different regions, allowing students in remote areas to have access to higher quality education.

Multiple built-in plug-ins facilitate teachers to establish collaborative sessions: Intel® Unite® solution supports various mainstream third-party voice or video calling systems. It works perfectly with existing solutions and can easily add existing tools and features, such as Skype for Business, Zoom, internal conference control system or whiteboards via its built-in plug-ins. By leveraging the Unite® solution and other third-party office software, Zhejiang Educational Equipments' ESA equipment enables immediate remote teaching seminars, collaborative session preparation, and so on.

Improve productivity and reduce IT operating costs by remote management of IT equipment

The ESA equipment, based on Intel® vPro® platform, combined with Intel® Active Management Technology (Intel® AMT), demonstrates powerful remote management and maintenance capacity that relieves schools of the burden in IT maintenance. Now the management in schools can be done by professionals remotely and teachers have more time for teaching and education innovation.

Improve productivity and reduce IT operating costs by remote management of IT equipment

No matter what the status of the operating system is, the hardware-based Intel® AMT network communication channel will not be impacted. In cases of computer shutdown or operation

failure, Intel® AMT is still capable of performing remote discovery and recovery, such as remote booting and upgrading of the system. Even when the computer is turned off, the technology can still alert administrator so that inspection and services can be carried out in a timely manner, reducing maintenance time and on-site support cost. With the Intel® vPro® Platform, Zhejiang Educational Equipments collects relevant data to generate multiple management reports accessible to users, and to provide guidance for future work.

The service provider can offer 8/5(h/day) remote online services. The service provider will perform remote diagnosis and perform services on computers in a timely manner once service requests from teachers are received.

Before the Intel® vPro® platform was used, Zhejiang Educational Equipments often sent operation and maintenance personnel on site to investigate and solve problems to ensure better service to customers. More often than not, to address the problems or machine failures in remote mountainous areas or in county schools, operation and maintenance personnel normally spent more than ten hours on the road; the whole process was indeed time-consuming and labour-intensive. Even if long journey was avoided, the traditional maintenance practice required at least dozens of minutes or even several hours to send the failure notification to relevant personnel who then went to the data centre to find out the cause and solve the problem. With Intel® vPro® platform, IT personnel can directly check and repair remotely through a browser and by making good use of the Intel AMT technology. The time required can be as short as less than 5 minutes, thus greatly reducing the IT maintenance cost.

Conclusion

The in-depth integration of Intel® vPro® Platform and Intel® Unite® Solution with the innovative applications of Zhejiang Educational Equipments has removed the barriers between IT application and the education industry. The combination gives greater play to the advantages of IT in smart teaching and learning, advances the sharing and joint development of educational resources, improves teaching efficiency by enhancing interactivity between teachers and students and hence transforms the traditional education model. In the future, Intel will continue to cooperate with Zhejiang Educational Equipments in further integration of IT into the teaching and learning process, and in capacity building of teachers and students on all fronts for IT applications. All these will conduce to new models for talent cultivation under the "Internet+" background as well as for internet-based educational services.