



Okinawa, Japan

N High School

Bringing studies to life
through virtual reality



WORLD'S
BEST SCHOOL
Innovation

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WORLD'S
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PRIZES

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Introduction

N High School is a coeducational, private, correspondence secondary school established in 2016. N High School has become the largest high school in Japan with 22,166 students together with S High School, and with 33 satellite campuses, in both urban and rural areas. Alongside the required courses for graduation, the institution offers a variety of advanced programmes to provide its students with a chance to gain competencies and skills they need for their future such as programming or AI machine learning. It introduced a virtual reality programme during the pandemic to enable students to continue learning and combat isolation. They believe that the use of technology and online services for education allows the students to connect with peers all across Japan, therefore they are considered to be very inclusive since students from anywhere in Japan can attend this school remotely.



Profile:



Country:

Japan



Region:

Okinawa



School type:

Private correspondence school



Location area:

Rural and urban



Student population:

2000+



Prize Category:

Innovation

“Schools are supposed to be places to allow students to try different things, to find what they want to do in the future.”

– Hirokazu Okuhira,
Founding Principal
of N High School



In-depth look

CONTEXT AND CHALLENGE

The advent of COVID-19 limited students' ability to interact with one another and created a sense of isolation and mental distress. To address the situation, N High School implemented the use of virtual technology outside the classroom to bridge the gap between student-to-student interactions and to encourage more engagement with their studies. This aligns with the school's mission to become a "school of the future". N High School aims to make full use of technology to improve the quality of education and to be innovative all along the learning process.

The use of VR in education presents challenges. Students all over Japan had to set up the equipment to study remotely.

A survey conducted by the school showed that 5% of students who had Meta Quest2 VR equipment said they could not complete the setup for various reasons. In addition, 5% of those students who finished the set-up had not used any of the applications.

However, the school managed to launch its VR programme in 2021 to allow students to enhance their studies from home by using virtual spaces. Students started to participate in activities that online courses traditionally could not offer. They could turn to this technology to visit historical sites in distant countries or take part in otherwise hazardous scientific experiments safely from home.



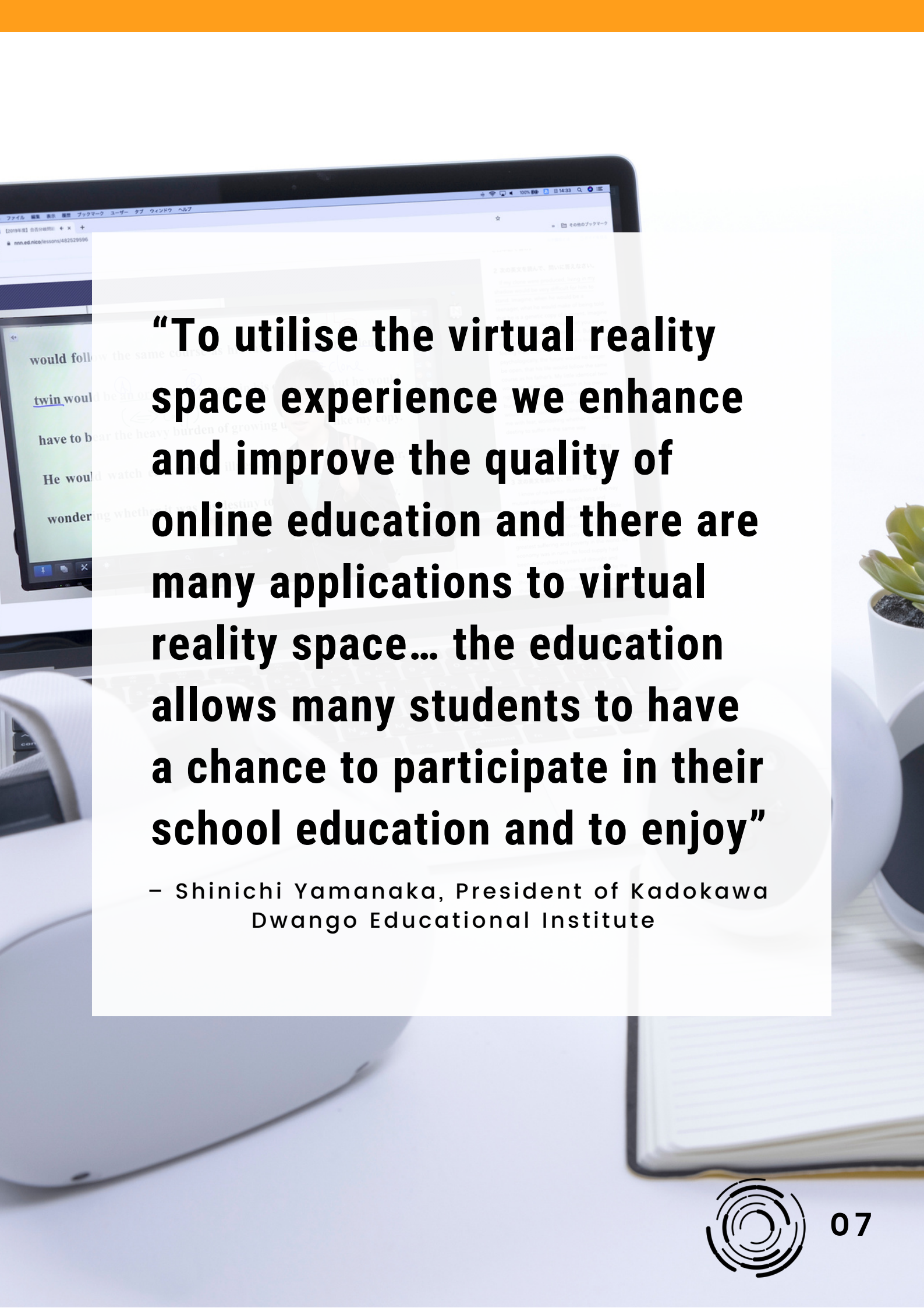
The school also offers practical opportunities such as internships and work experiences. For those students who are struggling with the high school curriculum, it offers remedial study programmes to help students catch up on their academic performance.

Besides academics, extra-curricular activities are also offered both online and offline and this varies from field trips to school festivals. N High School values the importance of creating an environment where its students can communicate with each other and form bonds that could last for a lifetime.

Approximately half of its students are from middle-income backgrounds, while a quarter of them come from low-income homes, and the remaining quarter of the students belong to families with higher incomes.







“To utilise the virtual reality space experience we enhance and improve the quality of online education and there are many applications to virtual reality space... the education allows many students to have a chance to participate in their school education and to enjoy”

– Shinichi Yamanaka, President of Kadokawa Dwango Educational Institute



EXPERTISE AND APPROACH

Virtual Reality tools were weaved effectively into the school curriculum, enabling students to access tools and work materials that traditionally could only be used on the school premises, for example, conducting a chemical reaction experiment. For VR English conversation classes, the school introduced Smart Tutor, developed by Plus One, an American software company. The curriculum was designed specifically for N High School's students. Smart Tutor allowed the students to improve their communication skills by conversing in English with an AI, referred to by school faculty as "Holosapiens". The Holosapiens evaluate students' performance in the following areas: English (pronunciation, speaking speed, as well as their level of communication) and physical communication (eye contact and posture). Based on the two criteria, the AI will give the students a score. The students can practice their speaking performance for an unlimited amount of time, in a judgement-free environment without any time or place restrictions.


To combat students' sense of isolation brought about by the pandemic and subsequent lockdowns, the school utilised VR in substitution for traditional school events; Graduation ceremonies or Sports Day, for example. The school often ran various field trips using Quest 2 and Wander, which were designed to give the students an alternative opportunity to explore beyond Japan.

In February 2022, the school also launched an interview training programme designed to help students prepare for employment and university entrance exams. The school also partnered with Kinki University, Chuo University and Komazawa University to allow students to experience campus virtually at any time.



Alongside having students benefit from VR in education and personal development, the school also has a special mentoring programme. Students can count on various mentors that facilitate guidance for them on building each of their paths regarding areas of interest and future ambitions. In this context, students can also choose subjects that are of most interest to them and refine their knowledge and skills accordingly, building a personalised curriculum.



A person wearing a dark blue school uniform with a white shirt and a striped tie is using a white VR headset and a white controller. The background is a blue, digital, grid-like pattern. A white text box is overlaid on the image.

“Schools are supposed to be places to allow students to try different things, to find what they want to do in the future.”

- Hirokazu Okuhira, Founding Principal of N High School



OUTCOMES AND RESULTS

The success of the innovative model that N High School is implementing is clearly reflected in the results - in 2022, the rate of graduation of their students was 84%. Students from other high schools started transferring to start studying in N High School. 99.1% of senior students in the third year of N High School graduated.

Enabling access to technological tools

By April 2021, the school had released 2341 pieces of VR-enabled content and had around 4000 students who were utilising VR for their learning. N High School prepared tutorials for VR equipment as well as several training sessions. But not only for students. The school quickly learned that teachers needed to be well-versed in VR and AI technology so that the

students could successfully replicate the experience at home.

Designing an online community to make VR a part of everyday life was an important component. This included student-led event organising committees, volunteer events, and creating team leaders for EchoVR.

Medical Issues

Over time the school learned to deal with medical issues that arose with VR usage including students who become unwell in VR settings. To successfully reduce these uncomfortable experiences for its students, the school staff were educated to handle such issues. All of this would be included in the teacher training sessions so staff would be well informed of key problems, and how to manage students who were exhibiting symptoms or when students were feeling uneasy.



Enabling access to technological tools

Lastly, the school felt it was necessary to teach communication literacy in Virtual Reality, to avoid the blurring of reality and the virtual world by students. The faculty also saw that while disparities existed between the VR world and the real world, some same foundational rules could still apply. Because the interactions involved anonymous avatars, there were fears among the staff that users may not take communication rules seriously, and it could lead to detrimental consequences. This was especially in the case of younger users, who were more malleable and easier to influence. Therefore, the school focused on teaching students the basics of respecting others and provided them with the tools to be emotionally intelligent and self-aware.



Key Steps



CONTENT CREATION

The school not only involved teaching staff but also Dwango Co. Ltd.'s engineers and experts in each subject to plan the content for the pupils' studies. The aim was to have all of the VR educational materials on a user-friendly interface so students could easily adjust. The crucial step was to not only develop the materials within the school but to collaborate with experts in each field, so the school's students may obtain and educate themselves from trusted experts.



VIRTUAL REALITY EDUCATION

Teachers who become familiar with VR would have the necessary skills to teach the students the technical usage of VR equipment, but also have the know-how to hone skills.



For example, the teachers can remind the students that they would be required to communicate respectfully, just as they would in the real world. This was good practice for students who struggled in the past to communicate with people in real life. When the teachers would go through VR training, they would know to use VR in a moderate way in order to avoid any potential criminal behaviours. It was calculated that it takes approximately 10 hours to acquire the minimum knowledge, including set-up, to understand VR for our staff and teachers.



DELIVERY

VR equipment was arranged for the school's students. The school not only deliver the necessary equipment to students for them to carry out their learning, but also exposes them to different ways of learning and creates opportunities to make the use of VR equipment an everyday part of their lives.





STUDENT FEEDBACK

There was a focus on questionnaires for students who were already using VR equipment to gather data that would allow faculty to support their studies and school experiences further. When surveyed, 5% of students who had Meta Quest2 VR equipment, responded that they could not complete the physical setup. In addition, the school found that 5% of those students who already had finished the set-up had not used any apps. The teachers, who went through the proper training mentioned in the second step, were then able to directly assist students.



Advice and Guidance





This VR programme can be quickly replicated in other schools and therefore the school highlights three advantages of this technology that other schools can make use of: (i) it can help emulate field trips - there is existing software that allows students to travel around the world; (ii) students can experience playing sports, even team sports, through VR; (iii) VR allows non-verbal communications with each other.

In this sense, it's important to be aware of the fact that the VR experience is not just about learning but the overall experience itself. On average it takes about one month for the students to acclimatise to virtual reality, as it mimics real-life environments to such a high degree. Because exposure to this type of technology may lead students to feel motion sickness, the school recommends giving students ample time to get adjusted to this type of online learning and not rely too much on medication to counter any ailments. It also requires a lot of teaching intervention and reinforcement of rules, since the VR experience can also emulate real-life problems at school such as bullying issues, for instance. Also, as it allows recording, once a student reports bullying, the teachers can review the interaction through the recording.



Online education has become very popular in traditional schools but, through the extensive use of VR, N High school has gone beyond and improved the quality of online education. It's a chance for students to sit in a real classroom and enjoy the learning experience.

More information

-  <https://nnn.ed.jp/>
-  [@nhighschool](#)
-  [@nhigh_info](#)
-  [角川ドワンゴ学園 N高等学校・S高等学校 公式](#)

Watch this [school's video](#)

