Internet of Thing in Japanese Educational Information and Communication Technology

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***Abstract*—The aim of this study is to understand Japanese education policies that have shifted from the "immobilist" period" to one of the education reforms that was highly politicized and influenced by the dynamics of global policy on the influence of systems for the development of information and communication technology. The method used is a case study in Japan that Japan needs to consider alternative incentive structures to maintain student and community commitments to IOT-based Education. The results obtained by using ICTs in education in Japan can perfect the communication system in the teaching learning process that really helps humans not only when using computer networks and satellites but also when they use traditional media. Why is the result so the reason because when using ICT equipment for class, students have the advantage that they receive more information in class. In addition, students can study on the Internet and improve the efficiency of lessons and get more information. This research can be used as an overview of how Japanese teachers and various professional development service providers are responding to the proposed Education reform by promoting technology.**

keywords—IOT, japanese education, information and communication technology (ICT)

INTRODUCTION

Technology, especially information technology, is inevitable from the education system, especially in an era where technological progress is everywhere. Given the benefits and changes brought by technology in other fields (e.g. banking, electronic commerce, communications), educators in Japan and around the world have researched and discussed the use of technology in teaching and learning activities. Integration of technology in education is considered a key reform. Japan has introduced an important policy for the integration and use of Information and Communication Technology (ICT) in schools to provide equal opportunities for all students. The introduction of ICTs in Japanese education was documented in the First Report of the National Council on Educational Reform in 1985, which deals with educational information, while the latest ICT-related initiatives, ICT Vision in Education — Towards the Creation of a Learning and School System Suitable for the 21st Century, is a comprehensive policy on the use of ICTs in education towards 2020. The latest trends and problems in the use of ICTs in Japanese education documented in the Future School Promotion Project are centered on two points:

(1) The effectiveness of computerization in education has been proven globally. In an ICT utilization study, the Ministry of Education, Culture, Sports, Science and Technology (MEXT) found that scores were higher on objective tests in classrooms used by ICTs than in those without ICTs, and student knowledge, understanding, and knowledge. learning motivation increases. In addition, it has been shown that the use of ICT in the classroom increases both-way teacher-students, promotes collaboration between students in learning new material, and increases teacher opportunities to provide personalized “teaching”.

(2) In Japan, computerization in classrooms follows behind several countries. In countries with the best performance in the International Student Assessment Program (PISA), computerization in classrooms is carried

out on a broad scale. Japan's ICT utilization rate is the lowest among them. This consideration is based on large projects, such as the Future School Promotion Project mentioned above, which have shown positive results, with improved ICT skills and teacher leadership and positive responses from students in their classroom interests, learning motivation, and behavior.

A new initiative by [5], Learning Project of Tomorrow envisions an era where every student has a tablet. It aims to create a diffusion model to disseminate ICT expertise for lessons and spread excellence and practical applications.

In the context of abundant information and interest in technology, with ICT improving the quality of learning this research is carried out from a regional and specific perspective, analyzing the characteristics and problems of ICT resources and their use in classrooms [6].

In [9] research also explains the policies and projects of public works to use Information and Communication Technology (ICT) in primary and secondary education and discuss how ICTs can overcome the challenges facing education in Japan.

Japan also promotes the use of Information and Communication Technology (ICT) in Japanese education by the Ministry of Education, Culture, Sports, Science and Technology (MEXT) has continued over the past two decades with national strategies such as the e-Japan Strategy, the New IT Reform Strategy, and the 2015 e-Japan strategy [2].

But according to research from [1] the application of technology in education in Japan is far behind other developed countries. Especially in higher education, students' apathy towards their studies occurs and teachers continue to ignore the student's attitude.

This is consistent with research from [4] related to issues related to the application of information and communication technology (ICT) in education and online learning with special reference to Japan. But actually in research on information and communication technology (ICT) it is known that students are actually more proficient than they think. While these researchers and other researchers have revealed a mismatch between educator perceptions and student reality, the factors involved are still not fully understood [7].

For this reason the aim of this research is to understand Japanese education policies that have shifted from the "immobilist" period" to one of the education reforms that was highly politicized and influenced by the dynamics of global policy on the influence of systems for the development of information and communication technology. The key to Japan's success in education is the traditional belief that all children can excel. This is reflected in the relatively weak impact of social background on educational outcomes. However, PISA shows that this high equity standard is under pressure. Japan's efforts to hand over responsibility for educational decision making to schools and local governments must now be accompanied by policies relating to equity that attract the most talented teachers to the most classrooms challenging, and the most capable principal to the school who needs the most encouragement. Effective school leadership is needed, together with a stronger emphasis on informality, to enable quick decision making, and freedom to act so that local education and school authorities can react to changes in the situation and the environment around it.

The novelty of this research is how students can learn on the Internet and improve the efficiency of lessons, and get more information with an overview of how Japanese teachers and various professional development service providers are responding to the proposed Education reform by promoting technology. In short, more needs to be done to fulfill Japan's educational goals about "spirit of life" with life [1].

METHODOLOGY

Case Study in Japan

For starters, the rapid decline in the age population of students, which has significantly expanded the gateway into the education system, reduces the impact of motivation traditionally high stakes have. Therefore Japan needs to consider alternative incentive structures to maintain students and community commitment to education. Also, when individuals change jobs more

often, performance at work will have a greater influence on careers than just schools or universities. Perhaps most importantly, while PISA shows that Japan has made significant progress in fostering student interest and involvement in learning, this is an area where Japan is still far behind other further education systems. Curriculum reform will be important if Japan wants to fulfill its ambition to shift the emphasis from a traditional subject-based approach to a competency-based approach, because only by doing so can it match the best performing education system in the world.

Another challenge is the quality of teaching. Experience with integrated study programs shows that success depends not only on curricular innovation, but also on how well teachers are trained to use it. There is no doubt that demand for Japanese teachers continues to increase. Teachers are asked to equip students with the competencies they need to become active citizens and workers in the 21st century. They are asked to personalize learning experiences to ensure that each student has a chance to succeed and to face increased diversity in their classrooms and differences in learning styles. And they must follow innovations in curriculum, pedagogy and digital resources.

To overcome this demand, Japan needs to rethink many aspects of its approach to teacher development, including how to optimize the pool of individuals from which prospective teachers are taken; recruitment system and the way staff are selected; the type of initial education recruitment obtained before they begin their work, how they are monitored and inducted into their services, and the continuing education and support they receive; how their compensation is arranged; and how teachers who struggle can be helped to improve, while the best performing teachers are given the opportunity to gain more status and responsibility.

In recent decades, Japan has tended to prioritize reducing class size rather than investing in teacher quality. This balance may now require adjustments, and our study provides various examples of how this can be achieved. What is clear is that performance is the result of what happens in the classroom, and only reforms carried out in the classroom can be expected to succeed. Therefore teacher involvement in the development and implementation of education reforms is very important, and school reform will not succeed unless supported from the ground up

RESULTS AND DISCUSSION

ICT Learning Globally in Japan

The use of ICTs in education is expected to improve the communication system in the teaching learning process. Using ICT will really help humans not only when using computer networks and satellites but also when they use traditional media such as images, blackboards, printing results, OHP equipment, and various other Audio Visuals. Therefore, here will be discussed on the basis of ICT in the teaching media and learning process.

Regarding Japanese education introducing “Information education” entered the school curriculum since 1985. Information education provides the ability to use that information is related to “the ability to use information” as mentioned below, teaching each actor and the activities arranged by all layers of school education.

Activity

To practice all abilities and uses of information, for example collecting, considering hokum, expression, process, creation, and transmission, communication.

•Information Technology

To obtain or obtain basic knowledge and capabilities from technologies such as computer systems and programming.

Attitude

To have a sense of responsibility in reviewing social information such as ethics and morals, “integrated learning” is one of the subjects for the ability to use information and learning to solve problems, with a social sequence. In low, middle and high-level education in Japan teachers and educators are watching for experiences to exchange cultural experiences with other students across the island and learning about its

circumference, well-being, and international and cultural background setmapt by using video discussion systems such as telephone, internet and satellite circuits.

Activities shown at each level of education:

Elementary School

Students ask a mayor about his city through a video discussion system. And the mayor will answer the question of the pads right then and there.

Middle School

Students observe their social environment and industry problems then report and present them through software in integrated learning.

High School

Of the three points (activities, information technology, and attitudes) that have been included in the curriculum, they make improvements to all the content of knowledge, abilities and attitudes of the various kinds of social information they obtain.

•University

At the university level ICT is used to perfect the style of communication between teachers and students as follows:

Teacher Education

At Yamaguchi University provide training for teachers using video conference systems with ISDN or satellite, CD or Web based materials, computer-computers, and so on.

In the lessons introduced by ICT, the burden of teachers such as preparing teaching materials and conducting preliminary examinations is reduced. You can gather a lot of information on the Internet, learn more broadly than ever, 3D images and other 3D images are easy to understand, and children are easy to understand.

First, many people wonder what kind of education ICT education is. ICT education is a class that uses information and communication technology (ICT). Abbreviation of Information and Communication Technology. In a simple and easy-to-understand way, classes are carried out using a computer or tablet device through the Internet. When using ICT equipment for classes, students have the advantage that they receive more information in class because they use video, 3D, and music. In addition, students can study on the Internet and improve the efficiency of lessons, and get more information. By using "electronic whiteboards" or the like, teachers can send their lessons to their student tablets, saving students time to take notes. And because teachers don't need to write on the board, time can be used effectively.

CONCLUSION

For decades, Japanese education policy has shifted from an "immobilist" period to one of the highly politicized education reforms influenced by the dynamics of global policy. The disruptive development of information and communication technology (ICT) has affected the school system throughout the world, and often changes the work lives of teachers in most high-income countries. Under the proposed 2020 reforms, Japanese teachers face significant pressure to adopt technologies such as tablets and interactive whiteboards and to start programming education in primary schools. Both [8] and MIAC have invested significantly in efforts and money in promoting technology. The function of ICTs in Japan is as a convenient vehicle for promoting various education reforms, and various motives that respondents might identify regarding the objectives of government education reform. Finally, in this screening can provide an overview of how Japanese teachers and various professional development service providers are responding to reform proposals.

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