Japanese IT Strategies in Public Schools: 
A Case Study of Policies and Practices of Hiroshima Prefecture

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Abstract

The Ministry of Education, Culture, Sports, Science and Technology of Japan (MEXT) has tried to supplement Information Technology (IT) education in school curriculum. New national curriculum standards which will be implemented from fiscal year 2002 and 2003, introduced “Information and Computer” in the compulsory subject “Technique and homemaking” for lower secondary schools, and a new subject “Information” for upper secondary schools. Moreover, the national curriculum standards have urged schools to use computer and telecommunication networks in all subjects. In response to the new national curriculum standards, each prefecture has improved the educational environment and teacher training related to IT, with support from MEXT and Ministry of Public Management, Home Affairs, Posts and Telecommunications in Japan.

This paper describes the IT strategies in school education in Japan through case studies in Hiroshima Prefecture. Then it will suggest towards innovations in IT education in Hiroshima. The paper is based on both secondary materials and primary sources, such as interviews and school visits.

1. Introduction

According to the final report of the Working Committee for the Promotion of Information Education in Elementary and Secondary Education (MEXT ed., 1998c), the discussion about information education in Japan started by the special committee for education held from 1984 to 1987. The committee emphasised the need for education corresponding with computerisation and influenced the revision of education curriculum.

A plan was set up which allocated computers for education sponsored by local distribution tax and implemented for six year since 1994. The plan aimed to install 22 computers in each elementary school, 42 computers in each secondary school and 8 computers in each special education school (MEXT ed., 1998c).
The Round-table Conference regarding the Promotion of Educational Policy corresponding with the Development of Multimedia (MEXT ed., 1995) discussed the establishment of basic idea using multimedia and the physical equipment such as computer projectors, computers and printers.

In the basic policy for Advanced Information and Telecommunications Network Society (AITNS) headed by prime minister in 1995, the Ministry of Post and Telecommunications have given responsibility to promote IT devices such as computers and soft-wares in elementary, secondary, special, technical college and university (The Ministry of Post and Telecommunication, 1995). In the Council Report of the 15th Session of the Central Council for Education, MEXT (1996) had also recommended the qualitative improvement of school education and the establishment of “New School” corresponding with AITNS policy.

In 1997 the Ministry of Education, Science, Sports and Culture (now MEXT) announced plans to connect schools to the Internet (MEXT ed., 1998c), and in 1998 the Curriculum Council under the Ministry had also recommended the improvement of education in every level of education, in line with the growth of information-oriented society (MEXT ed., 1998d).

In 1997 the Ministry of Education, Science, Sports and Culture (now MEXT) announced plans to connect schools to the Internet (MEXT ed., 1998c), and in 1998 the Curriculum Council under the Ministry had also recommended the improvement of education in every level of education, in line with the growth of information-oriented society (MEXT ed., 1998d).

Eventually, a programme called “Virtual Agency” started under the Japanese Prime Minister Obuchi in 1998, and then in 1999 its concrete project called the “Millennium Project” was launched.

In connection with this, this paper examines the IT strategies and projects in school education in Japan with specific reference to the implementation of “Virtual Agency” and “Millennium Project” in Hiroshima Prefecture.

2. Japanese Strategies on IT and the Educational Projects

2.1 Virtual Agency

The Virtual Agency, which started from December 1998, has aimed at tackling problems\(^5\) with several Ministries (Japanese Government ed., 1999a). Virtual Agency is a horizontal government system, which has been operated by the staff of member Ministries by using telecommunication tools. There are four projects under this programme.

One of the projects\(^6\) is an educational project called “Computerisation of Education” organised by five staff\(^7\) under the chief of Lifelong Learning Bureau of MEXT. (See Figure 1)

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**Figure 1. Virtual Agency’s Structure**

One-Stop Service Project on Car Possession  
Computerisation of Education  
Digitalisation of Governmental Procedures  
Paper Less Project on Administration

They submitted the final project report to the Japanese Prime Minister Obuchi in December 1999 (MEXT ed, 1999b). According to the MEXT (1999c), that report aimed at promoting high-quality human resources with information literacy in order to strengthen industrial competitiveness, enhance the convenience of national life, and establish a firm position in the world. To achieve these aims, the project has paid attention to elementary and secondary schools in order to raise information literacy of the whole nation. Moreover, this project has been implemented comprehensively up to 2005 and it is expected that equipment of computer environment at schools and tackling by software and hardware aspects will improve students’ achievement, teaching methodology and school management itself.

Main aims of the “Computerisation of Education” project are categorised into three: students, teaching methodology and school management. Students should get used to use computers and the Internet as the closest tool in their life at elementary school level actively as a tool for independent study and active communication with others until the completion of lower secondary school so that they can gain advanced skills of handling those IT instruments for purposes such as international exchange at upper secondary school level. Moreover, students should learn under the guidance about information moral according to their developmental stage (MEXT ed, 1999c). The computerisation of teaching methodology aims to promote students’ understanding and their active participation expressing their own opinions, will make class understandable for all, will decrease the difficulties for handicapped students in studying and lead them to social independent and should be usually used in all subjects. The third aim of computerisation of school management will promote closer relation between school and the community, will promote the participation by society concerned with school management, will do counselling of students including those who do not come to school, will revitalise school management system, and will promote the rationalisation of in-service training by using network system (MEXT ed, 1999c).

Moreover this “Computerisation of Education” project has paid attention to tackling hardware as well as software aspects, in order to achieve the aims mentioned above. Hardware aspects include provision of LAN and computers in public schools, provision of one computer per teacher and the support system in public school, installation of computers in private schools, provision of computers and high-speed access to the Internet in Japanese schools abroad, high speed connection to the Internet from all public schools (More than 1.5 Mbps), reduction of charges for the Internet connection, and promotion of research with high-speed connection. Software aspects include in-service training for 3,000 leaders at prefectural level by fiscal year 2001, in-service training for all teachers to gain computer basic skills by the end of fiscal year 2001, re-arrangement of organisations in schools such as locating at least one teacher in charge of IT and making teachers’ administrative work efficient and simple, provision of IT oriented system in each board of education such as allocating staff in charge, and promotion on supply of information on supporting teachers and schools and on exchange project. Other software aspects include adoption of information literate people in employment examination, allocation of co-ordinators taking charge of promoting IT in each board of education, inviting part time lecturers and assistance by experts in class and in-service training, inviting foreign youth who have IT skills at secondary school level, and arrangement of help desk in each educational region by contract with private companies.

2.2 Millennium Project

Millennium Project started in December 1999 for the sake of information innovation for new industries, which are very important and urgent for Japan's economic society (Japanese Government 1999b). These new industries mean three kinds of fields: ageing, computerisation and correspondent to environ-
Within computerisation, there are three projects: Computerisation of Education, Realisation of Electronic Government, and Information and Telecommunication Technology 21 Plan.

Millennium Project - Computerisation of Education is a six-year plan starting from fiscal year 2000 and the concrete policy of Virtual Agency “Computerisation of Education” project report mentioned above. The objectives of this plan are as follows (the MEXT, 2000).

1. Installing of computers in public schools till fiscal year 2005 - One computer for four or five students, two computers and one projector in each usual class room, six computers in other class rooms in each school, and one computer per student in computer room in elementary school
2. Access to the Internet from all public schools by fiscal year 2001
3. Equipment of LAN in 8,000 schools and then internet access from all the class rooms by the end of fiscal year 2004
4. Installation of computers and access to the Internet in private schools by fiscal year 2004
5. Implementation of in-service training for all public school teachers at the end of fiscal year 2001
6. Development and spread of contents for educational subjects, which are divided into three categories: for subjects, for teachers and for display, in order to understand easily by fiscal year 2005
7. Creating of the function of National Information Centre for Educational Resources (NICER) till fiscal year 2005

![Figure 2. Structure of Millennium Project](http://www.kantei.go.jp/jp/mille/991222millpro.pdf)
2.3 “e - Japan Strategy”

In January 2001, IT strategy headquarters drew up e-Japan strategy, which aimed at making Japan a nation in the forefront of IT within five years. In March 2001, they worked out “e-Japan Priority Policy Programme” as the concrete action plan of the strategy. The e-Japan 2002 programme has been implemented from fiscal year 2002. (Japanese Government ed., 2001a). In “e-Japan Priority Policy Programme”, there are five priority policy areas: (1) formation of the most advanced information and telecommunications networks in the world, (2) promotion of education/learning and human resources development, (3) facilitation of electronic commerce, (4) computerisation of the administration and utilisation of IT in other public areas, and (5) ensuring the security and reliability of advanced information and telecommunications networks (Japanese Government ed., 2001b).

Although the contents of educational policy in the e-Japan Programme are almost the same as Virtual Agency and Millennium Project, its policies not only for elementary and secondary education but also for higher education and lifelong education.

2.4 Focal Point of Japanese IT Strategies on Education

The detail objectives already mentioned can be categorised into seven types (See Figure 3a and 3b). This typology has been based on the categorisation of main aims of Virtual Agency-Computerisation of Education (See 2.1 in this paper) and the basic recognition for the usage of information tools¹⁹ set forth in the final report²⁰ of the Working Committee for the Promotion of Information Education in Elementary and Secondary Education (MEXT ed., 1998c). Figure 3b shows that most of these objectives have been categorised into Type F. It means that improvement of teachers and school management are necessary for educational innovation.

3. Hiroshima Prefectural Policies and Practices regarding IT Education

3.1 Outline

Hiroshima has aimed at “New Educational Prefecture, Hiroshima”, which promotes educational innovation by using IT. To achieve this aim, Hiroshima has started “Information Triangle”, which connects three cities²¹ in Hiroshima by optical fibre cable since fiscal year 2000, and developed “Hiroshima Maple Net”. These services have enriched the bases of telecommunication system and given equal opportunity to use for all residents in Hiroshima prefecture (Hiroshima Prefectural Board of Education ed. 2000b). The prefectural governmental organisations and public schools have been using the maple net service since fiscal year 2001 (Interview with a staff, Hiroshima Prefectural Board of Education, 2001).

According to Hiroshima Prefectural Board of Education (2000b and 2000c), Hiroshima has implemented several activities regarding IT education in response to the Virtual Agency and Millennium
Project-Computerisation of Education mentioned already. It has given priority to Multi Media Education-Study Plan since March 1997 and to Computerisation of Education in the vision of the innovation of compulsory education, called “21 Hiroshima Education Plan- New Bridge to the Future”, since November 1999\textsuperscript{22}. An educational network called Heiwa Net\textsuperscript{23} has been established in fiscal year 2001 using Hiroshima Maple Net in order to connect public schools and prefectural educational centres.

\begin{figure}[h]
\centering
\begin{table}[h]
\centering
\begin{tabular}{|c|c|c|c|c|}
\hline
Type & List of Objectives & Ratio in all objectives \\
\hline
Type A & Using computer in all subjects & 7.70\% \\
& Equipping suitable peripheral device for handicapped students & \\
\hline
Type B & Improving study way and expression ability of students & 3.84\% \\
& Internet moral & \\
\hline
Type C & Relationship between schools and the communities & 7.70\% \\
& Efficient and simple administrative management & \\
\hline
Type D & Focusing on basic, higher and lifelong education & \\
& Equipping LAN & 19.23\% \\
& High speed connection to the Internet & \\
& Cutting the charge for connection & \\
\hline
Type E & Development of educational contents & 15.38\% \\
& Installing computer for students & \\
\hline
Type F & Full information for teacher and exchange project & \\
& Allocating help desk and coordinator and installing IT system in each educational board & \\
& Re-arrangement of school organisation & 42.31\% \\
& In-service training & \\
& Recruitment of teacher having IT skills & \\
& Inviting experts from outside school & \\
& Equipping computers for teachers & \\
\hline
Type G & Inviting foreign youth & 3.84\% \\
\hline
\end{tabular}
\caption{List of Objectives of Virtual Agency, Millennium Project and e-Japan Project, Its Categories and the Ratio in All Objectives}
\end{table}
\end{figure}


\begin{table}[h]
\centering
\begin{tabular}{|c|c|c|c|c|c|}
\hline
 & Equipping ratio of computers in school (%) & Number of Students per computer & Access ratio to the Internet from schools (%) & Ratio of teacher who can use computer (%) & Ratio of teacher who can teach using computer (%) & Ratio of School that have Homepage (%) \\
\hline
National & 99.3\% & 13.3 & 57.4\% & 66.1\% & 31.8\% & 38.6\% \\
Hiroshima & 98.3\% & 12.9 & 41.9\% & 57.1\% & 23.8\% & 36.6\% \\
Difference & -1\% & +0.4\% & -4.5\% & -9.0\% & -8.0\% & -2.0\% \\
\hline
\end{tabular}
\caption{Current Situation of Computerisation of Education}
\end{table}

Hiroshima Prefectural Board of Education wishes that realizing computerisation of education would 1) increase academic ability of students, 2) develop human resource, 3) promote open schools to general public, and 4) enhance effective school management (Hiroshima Prefectural Board of Education ed. 2000b). According to Hiroshima Prefectural Board of Education (2000b), Hiroshima has implemented and planned seventeen projects in order to achieve its objectives (Table 2). For details of the contents of each project, see appendix 1.

### Table 2. 17 Projects regarding IT of Hiroshima Prefecture

<table>
<thead>
<tr>
<th>Type</th>
<th>Projects Planned in Hiroshima Prefecture</th>
<th>Starting Year</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>1. Implementation of Class Using IT for Handicapped Students</td>
<td>2001</td>
<td>On-going</td>
</tr>
<tr>
<td></td>
<td>2. Improvement of Various Classes Using IT</td>
<td>2001</td>
<td>On-going</td>
</tr>
<tr>
<td></td>
<td>3. Promotion on Distance Education Using NetMeeting System</td>
<td>2001</td>
<td>In planning</td>
</tr>
<tr>
<td>B</td>
<td>4. Enhancement of Students' Information Literacy</td>
<td>2002</td>
<td>Not yet</td>
</tr>
<tr>
<td>C</td>
<td>5. Promotion on Developing a Homepage for Each School</td>
<td>2000</td>
<td>On-going</td>
</tr>
<tr>
<td></td>
<td>6. Official Announcement of Educational Information to Public People</td>
<td>2001</td>
<td>On-going</td>
</tr>
<tr>
<td></td>
<td>7. Mutual Use of Administrative System</td>
<td>2001</td>
<td>In planning</td>
</tr>
<tr>
<td></td>
<td>8. Establishment of Network for School Management</td>
<td>2002</td>
<td>Not yet</td>
</tr>
<tr>
<td>D</td>
<td>9. Establishment of Educational Network</td>
<td>1999</td>
<td>On-going</td>
</tr>
<tr>
<td></td>
<td>10. Setting up LAN Connection</td>
<td>2000</td>
<td>On-going</td>
</tr>
<tr>
<td>E</td>
<td>11. Equipment of Computers to Every Class Room</td>
<td>2001</td>
<td>On-going</td>
</tr>
<tr>
<td></td>
<td>12. Enrichment of Educational Contents</td>
<td>2001</td>
<td>On-going</td>
</tr>
<tr>
<td>F</td>
<td>13. Enhancement of Teachers' Information Literacy</td>
<td>1999</td>
<td>On-going</td>
</tr>
<tr>
<td></td>
<td>15. Equipment of Computers for Teachers</td>
<td>2001</td>
<td>In planning</td>
</tr>
<tr>
<td>G</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Others</td>
<td>16. Implementation of Distance Education at Prefectural Universities</td>
<td>2001</td>
<td>On-going</td>
</tr>
<tr>
<td></td>
<td>17. Support for Computerisation of Education in Private Schools</td>
<td>2002</td>
<td>Not yet</td>
</tr>
</tbody>
</table>

Note: Those projects are categorised according to the typology of objectives of national strategies (See Figure 3a and 3b in this paper). Type A: Teaching Methodology, Type B: Students, Type C: School Management, Type D: Common for A, B and C, Type E: Common for A and B, Type F: Common for A and C, Type G: Common for B and C.


Authors categorised those projects in Table 2 based on the typology of national objectives (See Figures 3a and 3b). According to Table 2, Hiroshima has also focused on teacher and school management system and implemented 14 out of the 17 projects. However four projects are facing difficulties in implementation and are still under consideration, two of which focus on innovations in software aspect. It means that implementing educational innovation in software aspect is more difficult.

### 3.2 Current situation

Current situations at prefectural level are mentioned below, according to the categories divided in Figure 3a, 3b and Table 2.
3.2.1 Type A - Teaching Methodology

Projects 1, 2 and 3 are categorised into type A. Regarding project 1, each school can order suitable peripheral device and Hiroshima Prefectural Education Centre (HPEC) also has the sample of various devices for handicapped students. (See picture 1). However, it depends on each school to purchase additional device for those students (Interview with a staff, HPEC, 2002). Therefore, if they do not think it is necessary to educate those students, they purchase nothing in particular.

As for project 2, it is hard for prefectural board of education to grasp the extent of the use of computer as a teaching tool in all subjects and to what extent it has helped students' understanding. There is no standard to evaluate these aspects (Interview with a staff, Hiroshima Prefectural Board of Education, 2001).

In case of project 3, although this project was supposed to start from fiscal year 2001, it is still under consideration. The delay seems to be due to the absence of concrete objectives of the project.

3.2.2 Type B - Students

Only project 4 comes under type B. The situation of this project is not clear because it is supposed to be implemented from fiscal year 2002. Moreover this project, in its implementation, should have clear standards to evaluate students' IT literacy.

Regarding Internet moral, even though there is no specific project in Hiroshima, filtering system is installed at HPEC under project 9. Therefore HPEC controls and protects against unsuitable information for students.

3.2.3 Type C - School Management

Project 5, 6, 7 and 8 are applicable to type C.

As of fiscal year 2001, 76 percent of all public schools in Hiroshima have their own homepage site. It has increased by about 40 percent compared with fiscal year 2000 (36.6%). (Interview with a staff, Hiroshima Prefectural Board of Education, 2001).

As for project 6, Hiroshima Prefectural Board of Education has three tools for official announcement to public people: publication, broadcast and homepage.

Publication: CLIP (Creative Learning Information Paper) is published three times a year since 1996. It publishes information on innovation of compulsory education, new national curriculum standards, entrance examination schedule for upper secondary schools, cultural and lifelong learning activities and so on. It can be read on the Internet as well.

Broadcast: TV programme regarding education in Hiroshima is broadcast for 15 minutes (17:15-17:30) on the second and third Sunday of every month. This programme has introduced active students in schools tackling educational innovation. People can also know the monthly schedule and review the past contents on the Internet.
Homepage: In the homepage “Hot Line Education Hiroshima” organised by prefectural board of education, public people can access and discuss on the website. This homepage aims at enhancing public people’s interest regarding education (the website of Hiroshima Prefectural Board of Education, 2002).

In terms of project 7 and 8, although groupware that can share information among teachers has been planned, it has not contributed to effective school management and everything is still under consideration (Interview with a staff, Hiroshima Prefectural Board of Education, 2001).

3.2.4 Type D - Common for type A, B and C

In this type, project 9 and 10 are applicable.

Hiroshima Prefecture has established Heiwa net since fiscal year 2001 as an educational network. Using this network, all public schools have been able to access the Internet. Moreover, it is planning to start high-speed connection from fiscal year 2002 and make it possible from all public schools in fiscal year 2005 (Interview with a staff, Hiroshima Prefectural Board of Education, 2001).

Regarding LAN connection, as of August 2001, 79 out of 104 public schools have set up LAN connections. The rest of schools will do it within fiscal year 2002. This LAN connection is not to all classrooms but to all floors (Interview with a staff, Hiroshima Prefectural Board of Education, 2001).

As for cutting costs, since it has been possible to access to the Internet using Heiwa net, each school can pay only for the connection charge to the nearest Maple (Heiwa) net. Before the establishment of Maple net, each school had to have contract with Internet providing company (Interview with a staff, Hiroshima Prefectural Board of Education, 2001) (See Figure 4).

Moreover HPEC is the only access point to the Internet and maintains the safety status of the system by protecting against outside using firewall system. Moreover filtering system will protect students from unsuitable information on education. The gap between home and school, however, has been recognised as a big problem (Interview with a staff, Hiroshima Prefectural Board of Education, 2001).

3.2.5 Type E - Common for type A and B

Project 11 and 12 come under this type.

According to Table 1, 12.9 students share one computer in Hiroshima, as of August 2001. This aver-
age is slightly higher rather than national average of 13.3 students per computer (See Table 1). However it has tried to install more computers for students in order to reach the ratio of one computer for 5.4 students by fiscal year 2005 (Hiroshima Prefectural Board of Education ed., 2000b). As of August 2001, all public schools have 42 computers each. However there has been no computer in usual classroom yet. Hiroshima Prefectural Board of Education is thinking whether providing computer in each class is necessary or not, because they think it is enough to equip mobile personal computer (lap top) in each floor (usually grade by grade), although Hiroshima Prefecture has implemented project 11 since fiscal year 2001 (Interview with a staff, Hiroshima Prefectural Board of Education, 2001).

In terms of educational contents, portal site at HPEC and the database of the contents for student, teachers, and for each subject have been established in fiscal year 2001. As for the number of the contents, about 20,000 contents will be made from fiscal year 2002 (Hiroshima Prefectural Board of Education ed., 2000b). The educational contents will be shared using Heiwa Net into inside and outside network separately. Access to the contents from inside can be possible by inputting personal password. (Interview with a staff, Hiroshima Prefectural Board of Education, 2001)

3.2.6 Type F and G - Common for type A and C, type B and C

Project 13, 14 and 15 are applicable to type F. As of fiscal year 2001, Hiroshima does not have any plans that can be categorised into type G.

Staff Allocation

Regarding allocation of staff in charge of information education, it has two problems not only at school but also at board of education. At school level, personnel exchanges and school scale have disturbed the staff allocation, although it has been designed to allocate 2 or 3 teachers in each school. At the level of board of education, Prefectural Board of Education has one staff each in the division of elementary and secondary school since April 2001. Their main tasks are to co-ordinate seminars and go to each school and guide there. At city or town level, it is planned to allocate few staff in each board of education. In establishing help desk as well, personnel exchange disturbs it. For instance, there was no staff in the help desk in prefectural education centre in fiscal year 2001, although a staff was allocated there in fiscal year 2000 (Interview with a staff, Hiroshima Prefectural Board of Education, 2001).

To solve the problem of staff allocation, paying attention to information education skills in employment examination and in-service training must be emphasised even though Hiroshima Prefecture has not paid attention to IT skills in employment examinations yet.

In-service Training Programmes

Hiroshima Prefecture has implemented several in-service training programmes in order to enhance teachers’ information education skills. There are eight in-service training programmes (Table3): general training, promotion advisor of computerisation, leaders’ training for computerisation of education, special training for advanced computerisation, beginner teachers’ programme, second-year training programme, experienced teachers’ programme, and intensive course for teacher license.
Training programmes for all teachers - general training programme and promotion advisors’ programme

General training programme is one of the in-service training programmes for all teachers, held at HPEC. Table 4 shows the types of general training programmes and the schedule.

Table 3. In-Service Training Programmes in Hiroshima Prefecture

<table>
<thead>
<tr>
<th>Programme</th>
<th>Target Group</th>
<th>Duration</th>
<th>Venue</th>
<th>Contents</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Training</td>
<td>All Teachers</td>
<td>1-5 days</td>
<td>Refer to Table 4</td>
<td>Training by Prefectural Education Centre (Refer to Table 4)</td>
</tr>
<tr>
<td>Promotion Advisor of Computerisation</td>
<td>Teachers who can not handle computers</td>
<td>2 years (FY2000 and 2001)</td>
<td>Each School</td>
<td>Mobile training by advisor employed from temporary employment agencies</td>
</tr>
<tr>
<td>Leaders’ Training for Computerisation of Education</td>
<td>IT leaders for elementary and lower secondary</td>
<td>6 days / year (1-2 years)</td>
<td>HPEC*</td>
<td>Lectures and practices regarding information education</td>
</tr>
<tr>
<td>Special Training for Advanced Computerisation</td>
<td>Teachers who are eager to learn IT education for public schools</td>
<td>5 days / year (3 years)</td>
<td>Special School</td>
<td>Contents regarding network management. Lecturers from temporary employment agencies.</td>
</tr>
<tr>
<td>Beginner Teachers’ Programme</td>
<td>All new teachers</td>
<td>Half day / 8 days</td>
<td>Certain place specified by Hiroshima Prefectural Board of Education</td>
<td>Training supervised by Hiroshima Prefectural Board of Education</td>
</tr>
<tr>
<td>Second-Year Training Programme</td>
<td>Teachers in the 2nd year of service</td>
<td>Half day / 2 days</td>
<td>Certain place specified by Hiroshima Prefectural Board of Education</td>
<td>Training supervised by Hiroshima Prefectural Board of Education</td>
</tr>
<tr>
<td>Experienced Teachers’ Programme</td>
<td>Teachers in the 6th year and the 11th year of service</td>
<td>A option (2 days) in 3 days</td>
<td>Certain place specified by Hiroshima Prefectural Board of Education</td>
<td>Training supervised by Hiroshima Prefectural Board of Education</td>
</tr>
<tr>
<td>Intensive Course for Teacher’s license</td>
<td>Teachers who have certain license</td>
<td>15 days (FY 2000-2002)</td>
<td>Special School</td>
<td>Delivering teacher’s license for new subject “Information”</td>
</tr>
</tbody>
</table>

*HPEC=Hiroshima Prefectural Education Centre

General training programme is divided into four programmes: basic training programme, practical training programme, objective training programme, and comprehensive training programme. In these programmes, there are eight courses on IT education out of the 130 courses, and four out of eight are only for teachers who worked for eleven years. The total number of teachers who can participate in these courses in a year is 650 for teachers in the 11th year of service, compared to 588 for all teachers. This means it tends to focus on middle age teachers’ training. According to the interview with a staff of HPEC in 2002, the motivation of middle age teachers are lower than the one of young age teachers, who have strong confidence and high motivation on educating students because the hurdle of employment examination is getting higher year by year. Therefore, the reason why HPEC emphasises middle age teachers is to encourage them to have high motivation as young age teachers.
Promotion advisor of computerisation

According to the interview with a staff, Hiroshima Prefectural Board of Education in 2001, the advisors are employed by temporary employment agencies. They go to each school and guide teachers who cannot handle computers well. However it is difficult to recognise teachers who can or cannot handle computers, because the ability of handling computers is measured by self-report by each teacher. Therefore there is difference between the official reported data and the reality (Interview with a staff, Hiroshima Prefectural Board of Education, 2001).

Leaders' training for computerisation of education and special training for advanced computerisation

Leaders' training programme is for elementary and lower secondary school teachers while the special training programme is for public school teachers who are eager to learn IT. As for the contents, the former programme consists of lectures and practices regarding IT education while the latter consists of network management. Moreover the lecturer has been employed from temporary employment companies (Interview with a staff, Hiroshima Prefectural Board of Education, 2001).

Intensive course for teacher's license

With the establishment of new subject “Information” at upper secondary school level, teacher license for the subject has been also required. Hiroshima Prefecture has implemented summer intensive seminars for 15 days from fiscal year 2000 to 2002. The total number of teacher participants who will have completed this course is expected to be more than 300 by 2002 (there were 100 participants for 2000 and 136 for 2001). The seminar consists of lectures, reports and final examination. The lecturers should be teachers who took the same seminar in previous year. As for the limitation of participation, only teachers who have teaching license for mathematics, science and home economics can participate in this seminar. Teachers who have other licenses are allowed to take only the final examination, after self-study or attendance at classes concerned at University. This is only one way for them to get the license (Interview with a staff, Hiroshima Prefectural Board of Education, 2001).
Inviting experts and lecturers from outside

As of August 2001, Hiroshima has not planned any project related to this idea. According to e-Japan strategy, 1,000 temporary lecturers will be employed. Hiroshima also will be expected to follow this project after the e-Japan national strategy of 2002.

Computers for teachers

Hiroshima prefecture has given priority to provide computers for students rather than for teachers (Interview with a staff, Hiroshima Prefectural Board of Education, 2001). Therefore project 15 is not working well even though it has already been implemented from fiscal year 2001.

4. Conclusions and Recommendations

Table 4. Types of General Training Programmes, the Course Names and the Schedules for Fiscal Year 2001

<table>
<thead>
<tr>
<th>Types of Programmes</th>
<th>Course Names</th>
<th>Target Group</th>
<th>Full Quota</th>
<th>Date</th>
<th>Venue</th>
<th>Percentage in each programme</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basic Training</td>
<td>Music: Musical Moment by PC</td>
<td>All teachers</td>
<td>24</td>
<td>August 6, 7</td>
<td></td>
<td>5.88%</td>
</tr>
<tr>
<td>Practical Training</td>
<td>Presentation Using Computers (PowerPoint) (A), (B)</td>
<td></td>
<td>88</td>
<td>(A) August 23 and 24, (B) September 10 and 11</td>
<td></td>
<td>8.11%</td>
</tr>
<tr>
<td></td>
<td>Database (Access) Starting from ABC</td>
<td></td>
<td>88</td>
<td>September 13, 14</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Thematic Training</td>
<td>Class Teaching Using the Internet (A), (B), (C), (D), (E)</td>
<td>Teachers in the 11th year of service</td>
<td>88</td>
<td>(A) July 11 and 12, (B) July 23 and 24, (C) July 30 and 31, (D) August 2 and 3, (E) August 6 and 7</td>
<td>HPEC*</td>
<td>20.00%</td>
</tr>
<tr>
<td></td>
<td>Creation of Web Page (DREAMWEAVER) (A), (B)</td>
<td></td>
<td>60</td>
<td>(A) August 28 and 29, (B) September 5 and 6</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Non-linear Video Compilation (Premiere) (A), (B), (C)</td>
<td></td>
<td>10</td>
<td>(A) October 18 and 19, (B) October 22 and 23, (C) October 25 and 26</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Construction of In-school LAN (A), (B), (C)</td>
<td></td>
<td>20</td>
<td>(A) September 18-20, (B) October 5-5, (C) October 10-12</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Comprehensive Training</td>
<td>School Making for the Information-oriented Education</td>
<td>All teachers</td>
<td>300</td>
<td>July 26</td>
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4. Conclusions and Recommendations

Table 4 shows the current situation and the problems in Hiroshima compared to national strategies and objectives based on research including interview and school visit. Based on Appendix 2, authors have pointed out three common problems: 1) unclear objectives, 2) unclear standards for evaluation, and 3) lack of staff due to personnel changes. In fact, current situation of some projects, such as “Equipment of Computers for Teachers” project, that have objectives such as equipment of computers
for teachers are also not clear. Moreover, it is difficult to measure or evaluate or recognise the number of teachers who can handle computers and improve students' IT literacy and student academic achievement in projects such as “Enhancement of Students' Information Literacy”, because evaluation methods and standards have not been established yet. Furthermore, allocation of teachers are one of the weakest points regarding lack of staff in charge of IT in projects such as “Allocation of Leaders in Charge and IT-oriented Organisation in Each School”. Based on problems described in this paper and showed in Appendix 2, four recommendations can be made to improve the status of Hiroshima IT education. First, there is a need to express the objectives numerically, such as 80% of all public teachers will have a PC till 2003. Second, appropriate standards need to be set up in evaluating and measuring the results. Such standards need to measure students' achievements and evaluate whether teachers can handle PCs or not. Third, persons or volunteers from temporary employment agencies need to be employed to fulfil the lack of personnel in the schools. Fourth, delivery system of teachers' license needs to be improved so that all teachers can participate in the courses.

Reference


Endnotes

1 This paper was presented at the 7th Annual UNESCO-APEID International Conference on Education in Bangkok, December 2001.
2 National curriculum standards for elementary and lower secondary school notified on December 1998 and then will implement from fiscal year 2002. The standards for upper secondary school announced on March 1999 and will start from fiscal year 2003.
4 The Working Committee was formed in October 1996 in order to discuss information education systematically.
5 Problems, which are difficult to solve for usual governmental system divided vertically. IT education project is a good example because it needs cooperation between MEXT and other Ministries in promoting access to the Internet.
6 Other projects are regarding “one-stop service project on car possession”, “Digitalization of governmental procedures” and “paper less project on administration”.
7 They are all section chief level and respectively from MEXT, Ministry of Economy, Trade and Industry (METI), Postal Service Agency, Ministry of Home Affairs, Cabinet Secretary
8 1. Equipment of educational environment using computers in all usual class rooms (in primary, junior high, high and special education schools)
   2. Equipment of peripheral device according to physical and mental condition at special education schools
   3. Supplies computers in other rooms in the sake of various aims
9 Mbps=Mega bite per second
10 Distributing materials through the Internet (Konnet Plan etc.)
11 Retired teachers and staff from companies are supposed to be employed.
12 A festival using the Internet will be held on 2002, in order to evaluate complephensively from the point of international standard and inform on the project results to nations.
The number of all public schools are about 39,700 schools.

Those schools are about 20 per cent of all public schools and only large scale schools.

The number of all public school teachers are about 900,000.

Using 15-30 minutes animation added to text book as teaching tools

The basic site was established and opened in public August 31, 2001. http://www.nicer.go.jp This centre is a core portal site for all information on education and for promotion of computrisation of education in school education, higher education and lifelong education.

Research of portal sites and some developments for circulation and management of contents have been started since fiscal year 2001.

The basic recognition for the usage of information tools is divided into three types: using for students' learning, using for teaching methodology and using for school planning and management.


Hiroshima, Kure and Higashi-Hiroshima Cities

The background of Virtual Agency and Millennium Project mentioned in 1. Introduction in this paper influenced to these plans.

Heiwa means “Hiroshima Educational Internet Wide Area” and is wide area network (WAN) system.

http://www.pref.hiroshima.jp/kyouiku/hotline/kouhou.htm


Such as schedule management

The number of teachers employed lately is quite small and has been reduced year by year due to decrease of the number of students.
Appendix 1. 17 projects regarding IT education in Hiroshima Prefecture

<table>
<thead>
<tr>
<th>Project Name</th>
<th>Aim</th>
<th>Contents</th>
<th>Project Period</th>
<th>The period for basic equipment</th>
<th>Achievement</th>
<th>Current Outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Implementation of Class Using IT for Handicapped Students</td>
<td>With using computer, enhancing communication ability and promoting self independence and social participation</td>
<td>Preparing special device according to students' handicapped level&lt;br&gt;Try to use educational software in order to decrease the difficulties&lt;br&gt;Implementing distance education for students who study at home and in hospital&lt;br&gt;Developing database for special education and teaching</td>
<td>FY 1999 FY 2000 FY 2001 FY 2002 FY 2003-2005</td>
<td>Preparing computers&lt;br&gt;Enriching educational software</td>
<td>Increasing pilot schools and feasible subjects</td>
<td>Expand to whole area in Hiroshima</td>
</tr>
<tr>
<td>Improvement of Various Classes Using IT</td>
<td>(1) Try to improve students' achievement in all subject using IT&lt;br&gt;(2) With using computer, make class understandable</td>
<td>Implement understandable class using computer&lt;br&gt;Choose pilot schools&lt;br&gt;Accumulate teaching materials and educational methodologies&lt;br&gt;Expand to whole area in Hiroshima</td>
<td>FY 1999 FY 2000 FY 2001 FY 2002 FY 2003-2005</td>
<td></td>
<td>Improvement of students' achievement</td>
<td>It is hard to grasp daily use of computer in each class</td>
</tr>
<tr>
<td>Promotion on Distance Education Using NetMeeting System</td>
<td>(1) Implementing various educational system by distance education and credit exchange&lt;br&gt;(2) Considering exchange project between junior and high school, and between high school and University</td>
<td>Installing NetMeeting system in schools&lt;br&gt;Establishing feasible network system for distance education&lt;br&gt;Pilot project&lt;br&gt;Testing NetMeeting system and making guideline for distance education&lt;br&gt;Expanding the system in whole area in Hiroshima Prefecture</td>
<td>FY 1999 FY 2000 FY 2001 FY 2002 FY 2003-2005</td>
<td>Pilot project&lt;br&gt;Testing NetMeeting system&lt;br&gt;Expanding the system</td>
<td>Under consideration</td>
<td></td>
</tr>
<tr>
<td>Enhancement of Students' Information Literacy</td>
<td>Gain the computer skills needed in the information society</td>
<td>Implementing class using PC in all subjects and giving the opportunity for students to use computers in break time and&lt;br&gt;Sharing educational contents for students in Heiwa net&lt;br&gt;Let students join in developing homepage&lt;br&gt;Teaching network manner</td>
<td>FY 1999 FY 2000 FY 2001 FY 2002 FY 2003-2005</td>
<td>Implementing bit by bit</td>
<td>Developing the basement of the database for students by the end of FY 2001</td>
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<td>Put all homepages in the homepage server at a network point on Heiwa net. Promotion on developing homepage.</td>
<td><strong>Promotion on developing homepage</strong>&lt;br&gt;Enrichment of the contents&lt;br&gt;To close relationship between school and home, use homepage as a tool of connecting between them&lt;br&gt;Development of system on asking ideas and comments from parents and the community and feedback to school management</td>
<td>FY 1999 FY 2000 FY 2001 FY 2002 FY 2003-2005</td>
<td>Enriching the contents 100% of public schools have own homepage by the end of FY 2005</td>
<td>78 out of 104 public schools have own homepage already.</td>
</tr>
<tr>
<td>Official Announcements of Educational Information to Public People</td>
<td>(1) Establishing easy access system for public people. (2) Promoting educational innovation by participation of public people.</td>
<td><strong>Promotion on participating in educational innovation by public people by information actively</strong>&lt;br&gt;Broadcasting and sharing information by TV and Homepage&lt;br&gt;Preparing a homepage for i-mode access</td>
<td>FY 1999 FY 2000 FY 2001 FY 2002 FY 2003-2005</td>
<td>Publication named CLIP, Homepage and broadcasting</td>
<td></td>
</tr>
<tr>
<td>Mutual Use of Administrative System</td>
<td>Developing system to use simple administrative system, developed by certain schools, at other schools.</td>
<td><strong>Enriching digital delivery system of broadcasting and homepage</strong>&lt;br&gt;Supplying full information on Prefectural Universities and preparing information supply to i-mode access</td>
<td>FY 1999 FY 2000 FY 2001 FY 2002 FY 2003-2005</td>
<td>Implementing digital delivery</td>
<td>Still under consideration</td>
</tr>
<tr>
<td></td>
<td>Registing administrative system developed by certain schools in Heiwa net and promoting on using the system in other schools.</td>
<td></td>
<td>FY 1999 FY 2000 FY 2001 FY 2002 FY 2003-2005</td>
<td>Implementation bit by bit</td>
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</table>
| Establishment of Network for School Management | Try efficient daily administrative work using network system | Management of administrative work such as education schedule  
Management of tuition fee with computer  
(1) 100% access to the Internet from all public schools  
(2) Heiwa net started  
(3) Establishing access point of Heiwa net and the Internet at Hiroshima Maple Net  
(4) Controlling access from outside by Firewall  
(5) Preventing unsuitable information for education by Filtering  
(6) Establishment of inside network for teachers in order to share several information |
| Establishment of Educational Network | Equipping educational environment, that all students and teachers can access to the Internet and educational contents with high speed, cheap cost and safety connection. | Connecting to Heiwa net from all schools in Hiroshima Prefecture  
Accessing to the nearest point of Maple net  
Protecting against unsuitable information for education  
Updating contents  
(1) 100% high speed access (1.5Mbps) from all public schools by fiscal year 2005  
(2) 100% access from other schools |
| Setting up LAN Connection inside School | Establishing LAN in public schools and equipping other devices such as projector | Making guidelines about school LAN  
Installing LAN in public schools  
Equipment of device such as provider  
Promotion of equipping school LAN in other schools | FY 1999 FY 2000 FY 2001 FY 2002 FY 2003-2005 | 100% equipment of school LAN in all class rooms  
(1) As of August 2005, 79 out of 104 public schools have school LAN  
(2) Prefectural board of education is planning to ask volunteer group in equipping LAN to each class room |
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<td>Equipment of Computers to Every Classroom</td>
<td>Equipping computer accessible to the network in each classroom</td>
<td>Preparing necessary number of computers in schools (standard: 42 computers in PC room, 2 computers in each class room, 8 computers in special school)</td>
</tr>
<tr>
<td>Enhancement of Educational Contents</td>
<td>Establishing the system on developing, enriching and sharing educational contents on Heiwa net. Use it among schools and teachers</td>
<td>Creating database for subjects, for student and/or teacher</td>
</tr>
<tr>
<td>Enhancement of Teachers' Information Literacy</td>
<td>Try to enhance all teachers can teach class using computers</td>
<td>In-service training for handling computers and training by advisors</td>
</tr>
<tr>
<td>Allocation of Leaders in Charge and IT Oriented Organisation in Each School</td>
<td>Allocate leader in charge of IT and developing information system inside school</td>
<td>Allocating leaders in each public school and promoting the training inside school</td>
</tr>
</tbody>
</table>

<table>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Achievement</td>
<td>Preparing 5.4 students / a computer (at this moment, 12.9 students / a computer)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Current Outcomes</td>
<td>Finishing creating database within FY 2001</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Allocating leaders in each public school</td>
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<td></td>
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<td></td>
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<tr>
<td>Training leaders</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Allocation of leaders in each public school</td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Promotion on allocating leaders in each public school and establishing of inside information system by the end of FY 2005</td>
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<td></td>
</tr>
</tbody>
</table>

### Equipment of Computers to Every Classroom
- Preparing 42 computers in each public school
- No computer in each class room
- Under consideration of equipment of computer in each class room

### Equipment of Computers to Every Classroom
- Try to enrich the contents about teaching materials, teaching methodologies
- Creating search engine system on Heiwa net
- Preparing web site

### Enhancement of Educational Contents
- Creating 20,000 contents in database
- In-service training for teaching skills using computers, establishment of support system on information

### Enhancement of Teachers' Information Literacy
- Implementing in-service training at HPEC, distance training and delivering study materials for self study by Heiwa net
- Making support system strong and implementing mobile lecture
- Developing database about "Knowledge and Knowhow"

### Allocation of Leaders in Charge and IT Oriented Organisation in Each School
- Allocating leaders in charge of IT and developing information system inside school
- Training the leader and enhance the skills
- Creating database for subjects, for students and for teachers
- Preparing portal site

### Allocation of Leaders in Charge and IT Oriented Organisation in Each School
- All teachers can handle computers by the end of FY 2001
- Reaching 50% of teachers can teach using computers by the end of FY 2001 and moreover
- 100% of teachers can do by the end of FY 2005

### Allocation of Leaders in Charge and IT Oriented Organisation in Each School
- (1) 100% of staff allocation in each public school by the end of FY 2005
- (2) 100% development of inside information system by the end of FY 2005
- (1) Implementing several in-service training programms
- (2) Personnel change disturbs the allocation of staff in charge of IT in each school
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<td></td>
<td></td>
<td>Sharing common information among teachers by email etc.</td>
<td></td>
<td>Equipment of computers in other schools (a computer for a teacher)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Equipment of computers in all schools</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Implementation of Distance Education at Prefectural Universities</strong></td>
<td>Implementation of Various lecture at higher education level</td>
<td>Preparing information device in three Prefectural Universities</td>
<td>FY 1999 FY 2000 FY 2001 FY 2002 FY 2003-2005</td>
<td>Equipping the class for IT</td>
<td>(1) Preparing 3 class room for exchange project (2) Equipping necessary device for connecting each University</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Creating the exchange system on lecture</td>
<td></td>
<td>Additional equipment of information device</td>
<td>Information for the community</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Promoting exchange credit among the 3 Universities</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Support for Computerization of Education in Private Schools</strong></td>
<td>(1) Support on equipment of computers and school LAN in private schools</td>
<td>Equipping computers and school LAN</td>
<td>FY 1999 FY 2000 FY 2001 FY 2002 FY 2003-2005</td>
<td>Consideration time</td>
<td>Promoting the connection to Heiwa net and open educational contents</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(2) Allow private schools as well to use Heiwa net and educational contents</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Appendix 2. Current Situation and Problems on IT Education in Hiroshima, Comparing with National Strategies

#### Strategies and Objectives on Virtual Agency and Millennium Project

<table>
<thead>
<tr>
<th>Type A</th>
<th>Using computer in all subjects in order to make class understandable for all</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Project: Improvement of Various Classes Using IT has implemented since fiscal year 2001</td>
</tr>
<tr>
<td></td>
<td>Distance education by using NetMeeting system.</td>
</tr>
<tr>
<td></td>
<td>Decreasing the difficulties for handicapped students</td>
</tr>
<tr>
<td></td>
<td>Implementing class for handicapped students: Equipment of PC accessory adjusted to each level of handicap</td>
</tr>
<tr>
<td>Problems</td>
<td>Hard to grasp how much computer is used in each subject</td>
</tr>
<tr>
<td></td>
<td>No Concrete Objectives.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Type B</th>
<th>Improving students' study way and expression ability using computer</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Improving students' IT literacy</td>
</tr>
<tr>
<td></td>
<td>Standard to evaluate students' ability is not clear</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Type C</th>
<th>Close relationship between school and community</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Establishment a homepage for each school. Increasing 76% (2001) from 36.6% (2000)</td>
</tr>
<tr>
<td></td>
<td>Open to the general public</td>
</tr>
<tr>
<td></td>
<td>1. Publishing CLIP (Creative Learning Information Paper) 3 times a year since 1996</td>
</tr>
<tr>
<td></td>
<td>2. TV broadcasting 2 times a month for 15 min.</td>
</tr>
<tr>
<td></td>
<td>3. Discussable on the website</td>
</tr>
<tr>
<td></td>
<td>Making teachers' administrative works efficiency and simply</td>
</tr>
<tr>
<td></td>
<td>Will start from fiscal year 2002</td>
</tr>
</tbody>
</table>

#### Current Situation of Hiroshima IT Education

- Hard to grasp how much computer is used in each subject
- No Concrete Objectives.

#### Problems

- Hard to grasp how much computer is used in each subject
- No Concrete Objectives.

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Note: Type A: Teaching Methodology, Type B: Students, Type C: School Management, Type D: Common for A, B and C, Type E: Common for A and B, Type F: Common for A and C, Type G: Common for B and C

Source: By Authors
Japanese IT Strategies in Public Schools

Appendix 2. Current Situation and Problems on IT Education in Hiroshima, Comparing with National Strategies

Type D
- Focusing not only on primary and secondary education but also on higher education and lifelong education (e-Japan Strategy 2001)
- High speed connection to the Internet in all public schools (More than 1.5 Mbps)
- Cut the charge for connection to the Internet
- Establishment of Heiwa net
- Equipment of LAN in 8,000 schools (20% of all public schools) and then internet access from all the class rooms at the end of fiscal year 2004
- Access to the Internet from all public schools till fiscal year 2001

Type E
- National Average is one computer for 13.3 students
- Installing of computer in public schools till fiscal year 2005 - One computer for four or five students:
  A. Two computers and a projector in each normal class room
  B. Six computers in other class rooms in each school
  C. One computer for a student in computer room in primary school

Note: Type A: Teaching Methodology, Type B: Students, Type C: School Management, Type D: Common for A, B and C, Type E: Common for A and B, Type F: Common for A and C, Type G: Common for B and C
Source: By Authors
## Appendix 2. Current Situation and Problems on IT Education in Hiroshima, Comparing with National Strategies

<table>
<thead>
<tr>
<th>Type F</th>
<th>Type G</th>
</tr>
</thead>
<tbody>
<tr>
<td>Equipment of a computer per a public school teacher and the support system</td>
<td>Not yet</td>
</tr>
<tr>
<td>In-service training for 3,000 leaders at prefectural level till Fiscal year 2001</td>
<td>Trying to do. Ideal plan is 2-3 staff in each school in the future considering school scale.</td>
</tr>
<tr>
<td>Re-arrangement of organisation in schools such as locating at least a teacher in charge of IT</td>
<td>Trying to do.</td>
</tr>
<tr>
<td>Equipment of IT oriented system in each education board such as posting staff in charge</td>
<td>Trying to do.</td>
</tr>
<tr>
<td>Promotion on supply of information on supporting teachers and schools on exchange project</td>
<td>Trying to do such as establishment of HelpDesk.</td>
</tr>
<tr>
<td>Paying attention to information literacy in employment examination</td>
<td>No examination regarding IT skills</td>
</tr>
<tr>
<td>Allocation of co-ordinators taking charge of promoting IT in each board of education</td>
<td>2 person in prefectural education board since April 2001.</td>
</tr>
<tr>
<td>Inviting part time lecturers</td>
<td>Not planned yet</td>
</tr>
<tr>
<td>Assistant by experts in class and in-service training</td>
<td>Not planned yet</td>
</tr>
<tr>
<td>Arrangement of help desk in each educational region (board) by contract with private companies</td>
<td>Not planned yet</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Type G</th>
<th>Type F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inviting foreign youth who have IT skills at secondary school levels</td>
<td>Not planned yet</td>
</tr>
</tbody>
</table>

### Notes:
- Type A: Teaching Methodology, Type B: Students, Type C: School Management, Type D: Common for A, B and C, Type E: Common for A and B, Type F: Common for A and C, Type G: Common for B and C
- Source: By Authors