A Study of Analysing IT Digital Coping Strategies

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In the present study, we explore the analyses of coping strategy for IT digital divide on the elementary campus. The questionnaire was distributed by stratified random sampling. The cases included 39 schools and 150 teachers. The study adopted the questionnaire of "SWOT Strategic Analysis for Digital Divide" to investigate the digital learning environment on campus and to understand teachers' opinions on reducing the digital divide. The main finding after analyzing the score statistically are as follows:

1. The emphasis degree of the principle's promotion for digital learning, high – 38.7%, medium— 55.3%, low – 6%.

2. The rate of schools that had computers in every class was 48.7%, network 76%, computers and network 46%.

3. Information-credit-taken teachers and qualified teachers in information subject: teachers from urban schools occupy the highest rate; teachers from general schools the second, and teachers from remote schools get the lowest rate.

4. Most of the teachers agreed on reducing digital divide on campus.

Povzetek: Prispevek analizira rezultate analize anketiranja 150 učiteljev na temo digitalne ločnice.

1 Introduction

The growth of the digital environment is double-edged. On the one hand it integrates information and on the other hand it creates the secret worry of the digital divide. In recent years, much attention has been paid to the IT digital divide internationally. The possible impacts on society have been discussed widely and it has been concluded that generally the digital divide is an obstacle to the development of civilisation. Therefore, the termination of the status quo for unbalanced IT development between regions, groups, and individuals has become a common consensus.

Following land, labour, and capital, information has become an important factor in this knowledge economy era. In the information society, those who can promptly master and gather information will be competitive [5]. How though, will the development of information technology (IT) influence the social equality of wealth and justice? The optimistic view holds that the use of IT benefits the balance of accessing information, as people can accumulate resources and promote their situation by accessing IT to obtain important information. However, the pessimistic view holds that IT enlarges the inequality between the rich and the poor; thus the rich become richer and the poor become poorer. To create opportunities for social equality and fair competition, the most efficient method is to provide a fair IT educational environment and advocate the universality

of accessing IT to reduce the digital divide and promote circulation on different levels.

USA was the first country that systematically observed the digital divide. The National Telecommunications and Information Administration (NTIA) in the USA have continuously delivered reports into the digital divide (Falling through the Net) since 1997[12]. It was discovered that opportunities to access IT were differentiated, according to people's income, race, educational background, and region of residence. The differences seem to be widening. Recently most countries have also discovered that the problems of the digital divide may create a wall for disadvantaged minorities from attending social activities. To protect and promote fair information access opportunities and social justice, digital divide on campus is an important issue that needs to be carefully considered.

2 Review of literature

IT is defined as any computer-based tool that people use to interpret information and carry out the information processing needs of an organization [6]. IT has paved the way for an information society sans frontiers to have easy access to information and communication, also connects the machine environment with human applications, and has emerged as a force for global connectivity. Therefore there is a fair claim in the

common statement, "IT has radically changed the lives of millions of people [19]." People that do not have IT access are in danger of exclusion from participation in the knowledge-based global economy. Because IT can directly contribute to human capabilities and support economic growth through the productivity gains that it generates.

2.1   Impacts of the digital divide on society

Does the digital create gaps or opportunities? Bill Clinton, the former American president, made a groundbreaking speech pointing out that the Internet removes barriers between countries and cultures to bring people closer together and create opportunities. However, it will be a tragedy if the use of the Internet creates new barriers because of its unavailability for some people where it was intended to remove those barriers.

Nevertheless, there is a disparity in the spread of IT across the world between the developed and the developing nations. There were 232 million Internet users in developed countries, as opposed to only 83 million Internet users in developing countries. There were 77 million registered online computers in the United States, 6 million in Japan, 5 million in Canada. In contrast, there were less than 10 registered online computers in Bangladesh, Angola, Chad, and Iraq and none in Burundi, Benin, and Syria. In terms of access to personal computers (PCs), there are 70 PCs for every 1000 people in the world. There are 3 PCs for every 10 people in developed countries, 7.5 PCs per 10,000 people in Sub-Saharan Africa, 2.9 PCs per 1000 people in South Asia, and 0.7 PCs out of 1000 people in Mali. There is an estimated 56Gbps bandwidth between the United States and Europe and 18Gbps of bandwidth between the United States and Asia. In contrast, there is only 0.2Gbps between Africa and Europe and 0.5Gbps between Africa and the United States [2].

Digital divide can be categorized as ([7],[15],[21]):
1. Global digital divide: This is the first divide where-in the Internet users account for only 6% of world population and 85% of them are in the developed countries where 90% of the Internet hosts are located.
2. Regional digital divide: Within Asia, the personal computer (PC) penetration is 0.58% in Indian (Asia is at 3.24% and world average is at 7.96%). The current Internet subscriber base is only 0.4% in Indian, in sharp contrast to Asian countries as Korea with 58, Malaysia with 11 and China with 2%.
3. National digital divide: Within nation, there is an urban–rural digital divide; within urban, there is educated–uneducated digital divide; amongst educated there is rich–poor digital divide.

The digital divide in education is built on disparities in investment in education as a whole. While European countries spend 6.77% of Gross National Product on education, South Asian and East Asian countries spend only 2.94% to 3.51%, respectively (Bridges.org). As a consequence of the global divide, students in poorer countries have less access to digital content, and lack competitiveness for participation in the knowledge-based global economy.

Generally speaking, there are two directions for reducing the digital divide: the positive one is to promote social justice; and the passive one is to avoid social instability caused by unbalanced access opportunities to IT.

Reference	Definition
NTIA 1997	The gap of "Have" and "Have-Not" for IT, such as computer, internet and the ability of using them [12].
OECD 2001	The differences presented by different social economic environments and different Internet access activities for each person, household, enterprise, and region [16].
Norris 2001	Global divide as the divergence of ICT access between industrialized and developing nations. The social divide refers to the gap between information rich and information poor within the same nation. The democratic divide separates those people who use digital technology and information to participate in public life, and those who do not [15].
Wolff and MacKinnon 2002	Inequalities exist in the degrees to which populations can access and use ICTs. This inequality is called the digital divide [22].
Siriginidi 2005	Differences based on race, gender, geography, economic status and physical ability; in access to information, the Internet and other information technologies; in skills, knowledge and ability to use information and other technologies.
S.F. Tseng 2002	The use and development of IT may be different because of gender, race, class and region of residence. Therefore, the opportunities to get access to IT are differentiated [20].

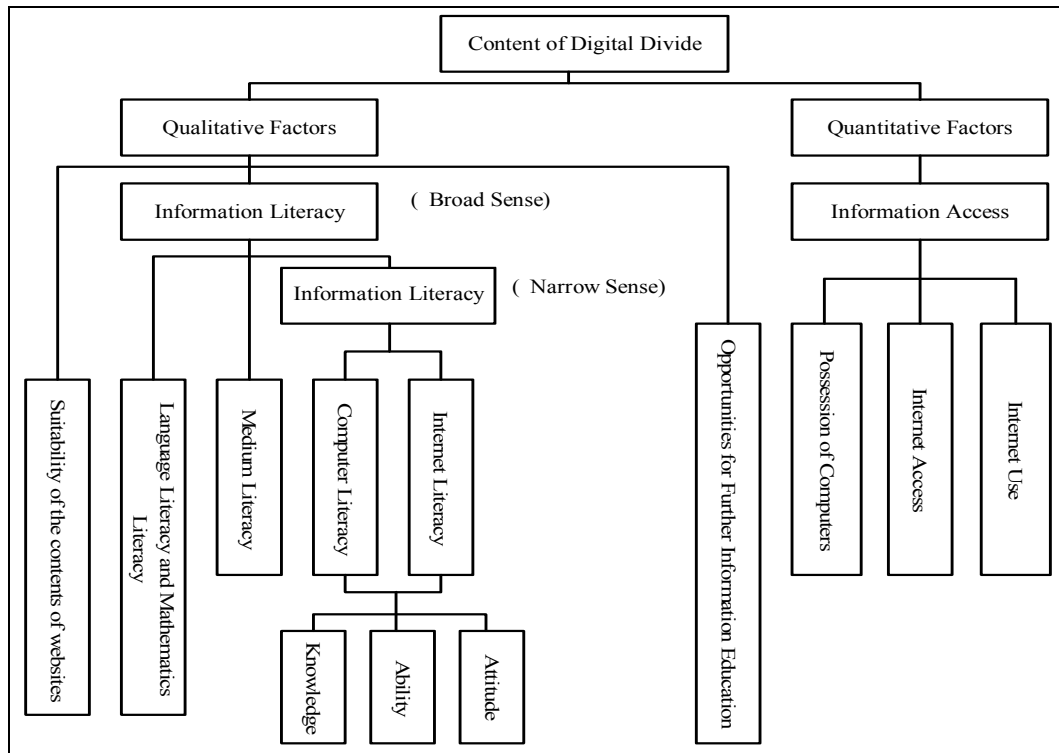Table 1: Summary of researchers' definitions of digital divide

Figure 1: The content of digital divide

2.2 Definition and content of digital divide

The phrase 'Digital Divide' was first seen in the report Falling through the Net-New Information of Digital Divide in 1997 and Falling through the Net-The Definition of Digital Divide in 1999 delivered by the NTIA. The reports claim that information tools, such as computers and the Internet, have a crucial influence on individual economic achievements and career development in an information society. The PC ownership and the ability of using them will dominate the gaps between the rich and the poor.

There are two parts in the digital divide; the first is to analyse the different rates of people who have or access the Internet. The second is to investigate computer use to compare people's information literacy. There will also be differences when considering the digital divide if thinking is centered on people alone. The American Children Education Organisation claims that users may have problems accessing information on the Internet because of the lack of local network connections, information literacy, language obstacles, and cultural diversities when reading the websites. Furthermore, obstacles of accessing the Internet for residents in low income communities, the readability of website content, and the friendliness of surfing software are also possible factors that will influence the digital divide.

Researchers have amended the viewpoints provided by S.F.Tseng(2002), Siriginidi(2005), and integrated McClure's four factors of information literacy: traditional language and mathematics literacy, medium literacy, information literacy, and internet literacy, as well as the "suitability of the contents of websites" in a qualitative dimension (see Fig. 1).

Researchers have integrated the contents of the digital divide and defined it as: in a digital information society, there are differences in the opportunities of accessing IT, user ability, and the suitability of selecting the contents according to individual social attributes, such as differences in gender, race, household income, class, and region of residence. The opportunities for accessing IT include the possession of computer equipment, opportunities for internet connection, and the conditions of using the internet, etc. The abilities required for using IT include information literacy and information technique literacy.

2.3 Influential factors on the digital divide on campus

Researchers have concluded from relevant documents that the main factors that influence the digital divide on campus are race, geographical region, personal factors (gender, age), family factors (the education degree of the parents, household income, profession, social and economic position, household IT equipment, and attendance and recognition of householders), school factors (IT equipment, maintenance, quality of information education, internet quality, emphasis degree), teacher factors (teachers' information ability, learning attitude, and opportunities of education training), and communities and government factors (policy and internet cost), etc. Among those factors, the region of residence, gender, age, educational degree of the parents, household income, social and economic position of householders, household IT equipment, and school IT environment are considered to be most significant.

To sum up, the differences of different regions of residence, individual family factors, school equipment, and the teacher's literacy will create a digital divide. These are all included in the questionnaire for this study as research variables.

2.4   Theory of SWOT strategy

A derivative of the Harvard policy model, also referred to as the "design school model" [11], the SWOT approach seeks to address the question of strategy formation from a two-fold perspective: from an external appraisal (of threats and opportunities in an environment) and from an internal appraisal (of strengths and weaknesses in an organization). SWOT generates lists, or inventories, of strengths, weaknesses, opportunities, and threats. Organizations use these inventories to generate strategies that fit their particular anticipated situation, their capabilities and objectives ([1],[3],[17]).

The actions to be undertaken that can be deduced from the four elements of SWOT are: building on strengths, eliminating weaknesses, exploiting opportunities, and mitigating the effect of threats [4].

The major analysis tool for strategy management is a SWOT analysis. This also applies to school organisations. In a changing society, how to look for and identify the strengths and weaknesses, and how to examine the external environmental opportunities and threats, are questions worthy of investigating, and also an important basis for a strategy approach to solving IT digital divides on campus.

3   Method

3.1   Research structure

Figure 2 is the structure of this study. According to the documents, this study uses two directional predictors, including population variables (age, teaching seniority, teacher classification, IT-relevant experience, etc.), and e-learning environment variables (region of schools, school classification, school scale, IT equipment, and emphasis of the degree of the principle's promotion of digital learning). The dependent variables include four SWOT strategic directions for the digital divide: strengths, weaknesses, opportunities, and threats, which include four strategic analyses: school administration, teacher, IT equipment, and government policy.

3.2   Subject

The research subjects for this study are teachers from public elementary schools in Kaohsiung City and Kaohsiung County in Taiwan. The questionnaire was distributed by a stratified random sampling technique. The teacher population was classified according to the location and scale (large, medium, and small) of their schools. Data were randomly selected at a rate proportionate to the amount of schools in the same group. There were one administrative teacher, one computer teacher, and two tutoring teachers in the class filling in the questionnaire in each sampling school. The sample size was 39 schools and 156 teachers, in which 152 questionnaires were retrieved. Among them, 150 were valid and the validity rate of retrieved questionnaires was 96%. Table 2 and 3 show the demographic characteristics of the samples and the current climate of digital learning
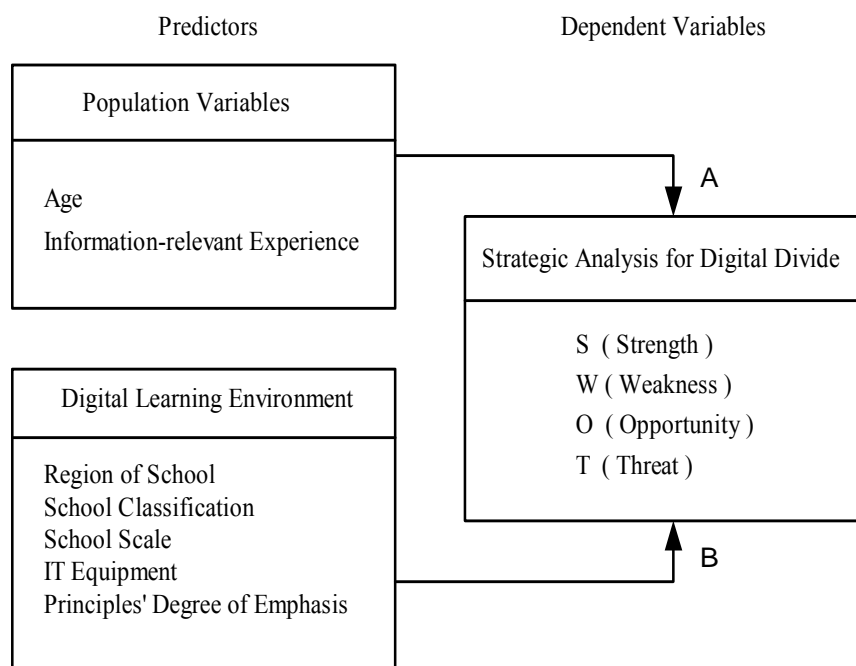

Figure 2: The structure of this study

3.3 Instrument reliability and validity

The questionnaire, "SWOT Strategic Analysis for Digital Divide" was designed for this study. There are four subscales in this questionnaire, including internal strengths (15 questions), internal weaknesses (16 questions), external opportunities (16 questions), and external threats (14 questions) of the digital divide on campus. Likert's 5-point-scale was adopted in this study (1=strongly disagree; 5=strongly agree).

To increase the external validity and internal validity of this questionnaire, five academic experts and three teachers from elementary schools were invited to review the content. Furthermore, 65 valid questionnaires were chosen randomly for pre-testing. In the 'Item Analysis', the results of the third question and the thirteenth one at the 'Threat' part were deleted because

their CR value did not reach the level of significance. The internal consistency (α) for each scale are: 'Strengths'.91, 'Weaknesses'.83, 'Opportunities'.84, 'Threatens'.84. Furthermore, the internal relationship between each part was significant. The correlation degrees with amounts were: .773, .791, .854, and .850.

4 Results

4.1 Analysis of teachers' recognition towards the strategic analysis for the digital divide on campus

Teachers' Recognition in this questionnaire is shown in Table 4. The mean was 4.12 which is closer to the degree of 'strongly agree'.

Variables	Number of Subjects / Percentage										
Age	Under 30 years old 44			31-40 years old 74			41-50 years old 28			Over 50 years old 4		
Information Relevant Experiences	Attended information workshops at the school			Attended information workshops outside the school			Taken information credit courses at universities or colleges, including distance learning			Qualified in information subjects		
	33			65			37			15		
Vs School Classification (percentage)	urban 12.7	general 6	remote 3.3	urban 18.7	general 10.7	remote 14	urban 12	general 8.7	remote 4	urban 6.7	general 2.7	remote 0.7

Table 2: Summary of the demographic characteristics in the samples

Variables	Number of Subjects / Percentage				
Region of School	Kaohsiung City 59			Kaohsiung County 91	
School Classification	Urban school 75		General school (township) 42		Remote school 33
School Scale	Under 6 classes 30	7-18 classes 22	19-36 classes 36	37-60 classes 26	Over 61 classes 36
Principles′ Degree of Emphasis	High 58 (38.7%)		Medium 83 (55.3%)		Low 9 (6%)
Having Computers in each Class	yes 73 48.7%			no 77 51.3%	
Having Computers and the Internet in each Class	yes 69 46%			no 81 54%	

Table 3: Analysis of the current digital learning environment

Part	M	SD	Min	Max	N of questions	Mean of each question
Strength	64.25	6.45	44	75	15	4.28
Weakness	60.23	7.17	45	78	16	3.76
Opportunity	68.89	6.91	51	80	16	4.30
Threat	49.93	5.54	36	60	12	4.16
Four Parts					59	4.12

Table 4: Summary of teachers' recognition in the strategic analysis for the digital divide

At the 'Strength' part, data were ranked according to teachers' degree of recognition as shown in Table 5. In Question S01, the mean was 4.46. It shows that teachers expressed a highly positive attitude towards the promotion of students' information literacy and the reduction of the digital divide, if schools perform information education. The mean was 4.45 in S02 and S06. It shows that teachers held a highly positive attitude towards information education, teachers' further education in IT, and that using the internet as a teaching assistance tool will promote digital learning at school. (S01: Schools should perform information education to promote students' information literacy. S02: Schools should encourage teachers' further education of information ability. S06: Schools should equip the Internet in each class as a teaching assistance.)

Generally speaking, the recognition mean of the question analysis was between 4.01 and 4.46. It shows that subjects agreed on reducing the digital divide on campus at the 'Strength' part.

Question	S01	S02	S06	S05	S03	S07	S14	S10	S15	S04	S12	S11	S08	S13	S09
M	4.46	4.45	4.45	4.40	4.38	4.37	4.30	4.28	4.25	4.23	4.21	4.19	4.18	4.11	4.01
Rank	1	2	2	3	4	5	6	7	8	9	10	11	12	13	14

Table 5: Summary of teachers' recognition in the strategic analysis for the digital divide at the 'Strength' part

At the 'Weakness' part, data were ranked according to the teachers' degree of recognition as shown in Table 6. The highest mean, 4.44, was for Question W06. The second highest was for Question W07. This shows that there should be complete IT equipment available if a good digital learning environment is to be established, and government should constantly budget for subsidies to maintain justice for digital learning. Therefore, there would not be serious digital divide caused by the different locations of schools, or the different social and economic backgrounds of students. (W06: Insufficient financial support for IT equipment maintenance will influence digital learning on campus. W07: Insufficient quantities of computers and computer classrooms will influence digital learning on campus.)

Question	W06	W07	W04	W14	W02	W05	W08	W16	W11	W12	W13	W09	W15	W03	W10	W01
M	4.44	4.13	3.89	3.85	3.79	3.78	3.78	3.74	3.73	3.71	3.71	3.69	3.69	3.51	3.49	3.29
Rank	1	2	3	4	5	6	6	7	8	9	9	10	10	11	12	13

Table 6: Summary of teachers' recognition in the strategic analysis for the digital divide at the 'Weakness' part

At the 'Opportunity' part, data were ranked according to the degree of teachers' recognition as shown in Table 7. The mean for Question O05 was the highest at 4.56. Teachers considered that internet use should be more popular; however, current national internet use is still expensive. This provides a burden for students with lower household incomes. In order to achieve a fair access to IT, market competition should be promoted to reduce the internet price. The mean for O07 is 4.49. It shows that teachers recognise that there should be diverse digital teaching software for the diversification of teaching as an assistance tool for teaching. The planning of a digital book reservation library would provide this service. The mean for O06 was 4.48, and the mean for O04 was 4.47. It shows that teachers consider that an increase of IT equipment and accessing opportunities to internet resources would promote students' digital learning skills and knowledge. The mean for O02 was 3.83. This means that teachers considered that the sufficiency of IT resources on campus was more important than subsidies for individuals and families. (O05: Promote market competition to reduce the price of the internet. O07: Establish a digital book reservation library to provide software for teachers and students. O06: Provide internet equipment in public libraries. O04: Reduce IT

equipment prices to increase opportunities for accessing IT. O02: The government subsidises the expense of accessing the internet and computers for those of low household income.)

Question	O05	O07	O06	O04	O08	O14	O13	O11	O03	O09	O10	O16	O01	O12	O15	O02
M	4.56	4.49	4.48	4.47	4.46	4.39	4.37	4.34	4.29	4.29	4.28	4.27	4.26	4.08	4.03	3.83
Rank	1	2	3	4	5	6	7	8	9	9	10	11	12	13	14	15

Table 7: Summary of teachers' recognition in the strategic analysis for the digital divide at the 'Opportunity' part.

At the 'Threat' part, data were ranked according to the degree of teachers' recognition, as shown in Table 8. The mean for Question T01 was 4.47 and the mean for T02 was 4.30. This shows that in the teachers' opinion, the social and economic status of households and the educational degree of the householders are influential factors on the digital divide. The mean for T05 was 4.33, and the mean for T06 was 4.32. Teachers considered that there will be a digital divide between schools because of different school scales and different resources for IT equipment and its maintenance. The mean for T03 was 4.21, and the mean for T09 was 4.19. In 1998, each school was subsidised for at least one IT classroom by the government, however, the equipment is no longer usable and maintenance is unavailable. A lack of subsidies from the government for renewing IT equipment has created a digital divide because of the different resources available for schools. (T01: Students from families of a lower social and economic status will have less experience in accessing IT. T02: Students with parents of a lower education background will have less information literacy. T05: IT equipment is different according to the school scales.T06: Budgets for maintenance are different according to the school scales. T03: Government funds are not sufficient for constantly subsidising hardware, software, and maintenance. T09: Though the government emphasises the digital learning policy, budgets for promoting the policy are not sufficient.)

Question	T01	T05	T06	T02	T03	T09	T10	T04	T11	T12	T07	T08
M	4.47	4.33	4.32	4.30	4.21	4.19	4.17	4.14	3.98	3.96	3.94	3.92
Rank	1	2	3	4	5	6	7	8	9	10	11	12

Table 8: Summary of teachers' recognition in the strategic analysis for the digital divide at the 'Threat' part

5 Discussion and conclusions

5.1 Discovery of this study

1.The degree of emphasis of the principles' promotion of digital learning: medium degree of emphasis occupies the highest rate while a lower degree of emphasis gets the lowest rate.
2.Half of the subjects' schools have computers in each class; less than half have computers and internet access.
3.Information-credit-taken teachers and qualified teachers in information subject: teachers from urban schools occupy the highest rate; teachers from general schools the second, and teachers from remote schools get the lowest rate.
4.The teachers' degree of recognition is high on the four parts of the SWOT strategic analysis for the digital divide: strength, weakness, opportunity, and threat.

5.2 Strategic analysis of reducing the digital divide on campus at school administration part

1. Schools should promote information education to advance students' information literacy.
2. Schools should promote teachers' information literacy and encourage teachers' further information education.
3. Schools should provide students with computer use in their free time.
4. Schools should make systematic IT promotion plans to provide research opportunities for teachers to advance their abilities of using IT.
5. Schools should have a complete plan for their IT equipment to provide more opportunities for accessing information for both students and parents.
6. It relies on the government to solve the problems of changing the IT equipment and maintaining it.

5.3   Strategic analysis of reducing the digital divide on the campus at school teachers part

1. Teachers should have the ability of integrating IT into teaching and encourage students to learn with internet resources to promote students' positive attitude.

2. Schools should have sufficient professional IT teachers for proper management of IT equipment and promotion of information education.

3. Too much workload for IT teachers and the circulation of teachers to remote schools will influence the promotion of IT education

5.4   Strategic analysis for reducing the digital divide on campus at school IT equipment part

1. Schools should equip computers and internet access in each class for teachers to integrate IT into teaching.

2. It should be emphasised that differences in IT equipment and the construction of broadband between schools will severely influence opportunities of digital access on campus.

3. The government should subsidise IT equipment for schools and teachers, to promote teaching integrated with IT.

4. Public libraries should provide internet access to increase IT access opportunities for students from disadvantaged backgrounds.

5.5   Strategic analysis for reducing the digital divide on campus at government policy part

1. The government should allocate a budget for improving the digital environment on campus to subsidise software, hardware, and maintenance.

2. Effects of reducing the digital divide between students are limited because of insufficient hours for computer courses.

3. The Ministry of Education should establish a resources exchange centre to provide hardware and software for learning resources, and online resources as a channel for sharing experiences.

4. The government should promote market competition to reduce the prices of the IT equipment and the Internet, to promote opportunities to access IT.

5. The government should encourage universities, colleges, and civil organisations to attend IT education to train local IT technical staff in remote areas.

6   Suggestions

This study should have enlarged the sampling area and increase the sampled nations to expand the suitability of the research. However, due to the financial and time constraints of this study, this was not possible.

The penetration rate of computers in Taiwan is among the highest in the world because of its special geographical environment and IT resources. However,

there is still a digital divide on campus, which calls for further research on this issue. It would also be hoped that the questionnaire results in this study might serve as a research guide for future researchers.

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Appendix

Questionnaire of the "SWOT Strategic Analysis for Digital Divide"

1. Strength, (S)
Please express your opinion about the 'Strength' of promoting digital learning at school and reducing the digital divide

S01: Schools should perform information education to promote students' information literacy.

S02: Schools should encourage teachers' further education of information ability.

S03: Teachers should encourage students to use the Internet in their learning.

S04: Schools should have enough human and financial resources for IT equipment maintenance.

S05: Schools should equip computers in each class to integrate IT into teaching.

S06: Schools should equip the Internet in each class as a teaching assistance.

S07: Schools should have sufficient professional IT teachers to promote IT education.

S08: Administrative staff should emphasise the promotion of digital learning at school.

S09: Students have computers and access to the Internet at home.

S10: Schools should continue promoting the training of teachers' information literacy.

S11: Teachers should have the ability to integrate IT into teaching.

S12: Schools should integrate IT into teaching to educate students' positive attitude toward computer learning.
S13: Schools should provide circulated teaching software.

S14: Teachers should teach students to pay attention to information moral principles.

S15: Teachers should encourage students' cooperation to promote their IT ability.

2. Weakness, (W)
Please express your opinion about the 'Weakness' in promoting digital learning at your school and reducing the digital divide

W01: Lack of firewall and antivirus software on schools' internet systems will affect internet teaching quality.

W02: Teachers have fewer opportunities for further education in information at remote schools.

W03: The circulation of teachers will influence schools' promotion of information education.

W04: Insufficient numbers of qualified teachers in information-related subjects will affect IT education at school.

W05: Internet speed at school will affect teaching quality.

W06: Insufficient financial support for IT equipment maintenance will influence digital learning on campus.

W07: Insufficient quantities of computers and computer classrooms will influence digital learning on campus.

W08: Schools' not able to provide access to computers for students in their free time will affect students' opportunities for IT access.

W09: Insufficient opportunities for teachers' computer-related research and study will affect their ability of digital teaching.

W10: Elder teachers will find it difficult to cooperate in digital learning.

W11: Insufficient quantity of computer-assisted teaching software will affect the digital learning.

W12: A few hours of computer courses will limit the effect of reducing the digital divide between students.

W13: The lack of a systematic plan will mean difficulties for advocating teachers' abilities of using IT.

W14: Insufficient numbers of professional IT teachers will create difficulties in the ability of using IT.

W15: Lack of a proper plan for IT equipment will affect the outcome of teaching assistance.

W16: Lack of professional IT management will affect the digital learning environment on campus.

3. Opportunity, (O)

Please express your opinion about the 'Opportunities' of promoting digital learning at your school and reducing the digital divide

O01: Training local IT professionals for remote schools will promote digital learning.

O02: The government subsidise the expense of accessing the internet and computers for low household income.

O03: The government supports communal computer learning courses to establish lifelong learning channels.

O04: Reduce IT equipment prices to increase opportunities for accessing IT.

O05: Promote market competition to reduce the price of the internet.

O06: Provide internet equipment in public libraries.

O07: Establish a digital book reservation library to provide software for teachers and students.

O08: Establish a resources database in public libraries to support school teaching.

O09: Adopt a fan-shaped mode in teacher training of IT ability. Train seeded teachers first and they will promote IT ability.

O10: Hold practical workshops to help teachers constantly update with new knowledge and promote their ideas of teaching.

O11: The Ministry of Education should establish a resource exchange centre to provide software, hardware and internet learning resources for experience sharing.

O12: The 'Learning Fueling Station' at the Ministry of Education can promote digital learning.

O13: Encourage teachers to buy laptops with governmental subsidies to help integrate IT into teaching.

O14: Buy overhead projectors for each class-group with governmental subsidies to promote teaching integrated with IT.

O15: Develop the characteristics of seeded schools and they will promote communal schools.

O16: Encourage universities, colleges, and non-governmental organisations to attend IT education courses to encourage its promotion.

4. Threat, (T)

Please express your opinion about the 'Threats' in promoting digital learning at your school and reducing the digital divide

T01: Students from families of a lower social and economic status will have less experience in accessing IT.

T02: Students' with parents of a lower education background will have less information literacy.

T03: Government funds are not sufficient for constantly subsidising hardware, software, and maintenance.

T04: Maintenance factories for IT equipment are not sufficient in remote areas.

T05: IT equipment is different according to the school scales.

T06: Budgets for maintenance are different according to the school scales.

T07: The Ministry of Education does not integrate indexical courses according to students' information learning ability in different phases.

T08: Education units do not provide various channels for further education for teacher training in teaching and combining IT.

T09: Though the government emphasises the digital learning policy, budgets for promoting the policiy are not sufficient.

T10: A Lack of widespread broadband construction influences the development of digital learning.

T11: IT seeded teachers are overloaded, as their teaching hours are not reduced.

T12: Current practice of IT education is based on the mode which operates from the higher level to the lower level. However, another mode should be considered which operates from the lower to the higher level.