



DIGITAL RESOURCES AND THEIR USE IN CHINESE LANGUAGE CLASSROOMS AND BEYOND

YUANLIN ZHAO

CHINESE TEACHER TRAINING CENTRE
THE UNIVERSITY OF MELBOURNE

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INTRODUCTION

At the urging of researchers and from their own interest, educational practitioners have been working to embed Information and Communication Technologies (ICT) in the curriculum for over a decade now. Each State and Territory in Australia, and even each individual school and language program, has adopted a policy in favour of integrating ICT into the curriculum and formed its own path and understanding of how to implement it. *The Victorian Government's Vision for Language Education* (2011) notes the necessity to "remove this variability [among schools and programs] and ensure that all Victorian students have the opportunity to engage in quality language learning" (p. 7), an opportunity which is to include access to learning using ICT.

With the advent of the new Australian Curriculum, the significance in teaching and learning of ICT competence has been further brought to attention. These documents propose that in the 21st Century classroom, learning should not only be content interrelated but also provide opportunities for interdisciplinary knowledge and skills to be developed and mutually drawn upon. In languages education, for example, Content and Language Integrated Learning (CLIL) courses, bilingual programs and ESL + History interdisciplinary subjects are currently being experimented with in some schools. ICT and language have also been linked, with using ICT being either the subject content taught in conjunction with the target language, thus allowing learners to acquire both ICT competence and develop language proficiency, or it is used as a pedagogical tool which increases the efficiency and efficacy of language learning. This latter use has particularly attracted attention in the teaching of Chinese, which is estimated to take English-speaking learners up to 3.5 times longer to learn than does a European language. ICT, it is claimed, can provide new ways of extending learning hours and spaces, enhancing interactive learning experience, as well as opening multiple channels to learning resources (e.g. Orton, 2008/2010). In order for this to be realised, education systems need to have a clear picture of what expertise and equipment is available in their schools and what use is made of it in the teaching of Chinese.

The Project

At the request of the Victorian Department of Education and Early Childhood Development (DEECD), in 2012 the Chinese Teacher Training Centre (CTTC) undertook to examine digital resources and their use in Chinese language classrooms. The aims of the project were to document and discuss the complexity and variability of current values and practices in the use of ICT in the teaching of Chinese in Victorian schools; and to make recommendations for further improvement. The study set out to answer the following questions:

1. What are the digital resources (software and online resources) that Chinese teachers use in their classrooms and the ways in which the potential of ICT for developing students' language is exploited?
2. What reasons lead Chinese teachers to the decision to use which digital resources, in what conditions and to what level?
3. What significant beliefs do Chinese teachers hold in regards to the functions and roles of ICT in different aspects of the curriculum?
4. How could ICT use in Chinese language education be enhanced in the future?

Procedure

The project was carried out in two stages: (1) a state-wide anonymous survey of Chinese teachers' use of ICT in their teaching was conducted online; and, (2) a follow-up Focus Group or individual interview with volunteers was undertaken to discover deeper attitudinal and practical factors at play in producing the situation shown in the survey.

Instruments

The survey was constructed using *Qualtrics Survey Software*. It comprised 5 sections and a total of 20 questions regarding the teacher's values and use of software and online digital resources. The content of the questions was created with reference to the *DEECD's ePotential Teacher ICT Capabilities Survey* with Chinese-specific questions added as needed. The survey required a maximum of 20 minutes to complete.

Potential questions for the Focus Group interviews were designed in light of the survey information. The primary aim was to present interviewees with the major trends and gaps identified in the survey and invite them to discuss and respond to them.

Method

1. The Principals of Victorian day schools in all sectors that were running Chinese programs were approached to permit their Chinese teachers to take part in the survey.
2. The Chinese teachers from some 95% of schools contacted were then invited to complete the online survey and 75 did so. Upon completion of the survey, respondents were invited to participate in a 45-minute Focus Group interview to be arranged at a place and time convenient to them. A total of 8 participants, 5 from government schools, 2 from independent schools and 1 from a catholic school, volunteered.
3. Due to repeated difficulties in arranging a common time for all who volunteered, in addition to two group interviews, two participants were interviewed individually, one using Blackboard Collaborate software and the other in face-to-face format. One of the Focus Group interviews involving four participants was also conducted face-to-face, while the second, involving two interviewees, was carried out as a Blackboard Collaborate webinar. The interviews lasted between 35 and 60 minutes and all were audio taped.

The first aim of the interviews was to encourage discussion about what had produced the strengths revealed in the survey results and what had led to the weaknesses also revealed; a second aim was to discover any other significant factors that the survey had not revealed. Participants' preferences and recommendations for the future creation of digital resources and teacher education in their use were also collected.

Data Analysis

Survey Data

Survey responses were coded according to the key categories of personal history of ICT training; availability of equipment and help; type and frequency of use; and key beliefs. General descriptive statistics were generated using frequencies, averages and percentage distribution of responses. The results were grouped to illustrate the range of equipment used, the nature and frequency with which material is used, the professional expertise of the teachers and the support they can access. Major trends and gaps in their practice were identified and these considered in light of the full potential of digital resources in Chinese language education.

Interview Data

Interview data were analyzed into themes using Emergent Theme Analysis (Marshall & Rossman, 2006). Open coding and axial coding were employed to identify and define the relationships between conceptual categories and sub-categories. The results have been examined in light of the following

key constructs in ICT education: teaching and learning with ICT; using ICT resources differentiated by learners' activeness in constructing knowledge and building skills; and, integrating ICT with suitable learning objectives and curricular emphasis. Survey results were studied in conjunction with the interview theme matrix to show type and frequency of use, training, and beliefs. Results from the interviews were used to illuminate and illustrate key issues which appeared in the survey results, as well as to identify matters which had not emerged from the survey.

SUMMARY OF FINDINGS

This study presents the profile, views and practices of approximately half the day school teachers of Chinese in Victoria concerning teaching using ICT. The principal findings of the research are:

1. Participants in this study were predominantly female, most born and educated in China. These are attributes typical of Chinese teachers as a whole. With 36% of the participants under 40 and only 26% over 50, the group's mean age was calculated to be 40 years. This is younger than the average age of the full cohort that Chinese Language Teachers Association of Victoria (CLTAV) estimates to be over 50.
2. Participants' preferred means of learning ICT is by independent exploration. However, this choice is the result of rarely finding formal professional development designed to meet their immediate needs, or the constraints on their attending sessions due to other commitments or distance. If quality targeted sessions were more available at more suitable times, they would be keen to learn from experts and share with peers.
3. PowerPoint and online language learning sites are the most popular among teachers. Newer technologies such as Interactive whiteboard (IWB), iPad, iPhone, Web 2.0 and audio/video recording are used by comparatively fewer teachers but often with higher frequency of use. Teachers' favored ICT activities usually involve the use of PowerPoint and an IWB.
4. Less than half of the teachers are overall satisfied with the ICT support they receive from their schools, while only a few are exceptionally pleased about it. Teachers believe that the level of support they are provided largely determines how much and how far they can go using technology in their teaching.
5. Although nowadays ICT is integrated by most teachers in their teaching, the proportion of use, the selection of tools and the activities designed based on selected technology greatly vary from one teacher to another. Teachers make these decisions on the ease of operating the tools, the immediate ICT provision they receive and their judgments of what is appropriate to the needs of teaching and learning, which at many times is defined by the prescribed curriculum.
6. The majority of teachers feel comfortable when learners use ICT under their direction. A certain degree of autonomy is given to students, especially in their deciding what format and technology to use in completing assignments.
7. The current use of ICT is often reported as problematic. The three biggest sources of problems lie in infrastructure matters outside a teacher's control, the teacher's low confidence or low technical competence in using ICT, and students' inappropriate use of the opportunities and autonomy given to them to use ICT.
8. Perceived as a 'tool,' ICT is generally believed to increase learner motivation and creativity, to extend learning outside the classroom, and somewhat to improve interaction and collaboration. However, using ICT is felt by some to create excessive work for teachers due to preparation time and frequent technical problems.

In summary, the use of digital resources in the teaching of Chinese in Victoria is shown to be widespread but very varied as to the breadth and frequency of employment. Many teachers direct students to commercial resources such as on-line dictionaries and make use of digital resources such as CDs that accompany the class textbooks, as well as the learning objects on the former Learning Federation website. With respect to future development, however, by far the greatest interest is in mobile devices and an IWB, and the greatest gap in what is available to them is Chinese-specific content and teaching-learning paths for employing these. With the exception of a handful of experienced ICT enthusiasts, Chinese teachers generally do not feel they have the technical or pedagogical expertise to design effective teaching activities with these programs themselves. Moreover, all are very pressed for time as it is, and for even the enthusiasts it is hard to carry out sustained development of class resources and hence even their projects tend to dwindle.

RECOMMENDATIONS

To improve and develop greater use and better application of digital resources in the teaching of Chinese, the following action is recommended:

1. Production of a guide to existing resources, catalogued according to level and topic.
2. Provision of a comprehensive store of learning activities, including exercises, interactive tasks, songs, and games; and production of new material to broaden variety as well as to fill gaps in what is already available.
3. Design of a sustained and coordinated program of development of specifically Chinese language activities and learning paths using mobile devices and an IWB.
4. Establishment of an easily accessed network for sharing high quality methods of using resources.
5. Design of professional development that is focused on the teaching of Chinese, provided at a variety of times, including asynchronously on line, for teachers who often work Saturdays and have school or home duties on weekday afternoons.
6. Provision of strong school support in the form of high quality equipment, maintained in good working order, with technical help readily available, as well as collegial exchange across learning areas on the use of ICT.
7. Encouragement of schools and the community at large to enter into dialogue with teachers and students over the purpose and value of digital resources in education and language learning.

PARTICIPANT PROFILES

Survey Respondents

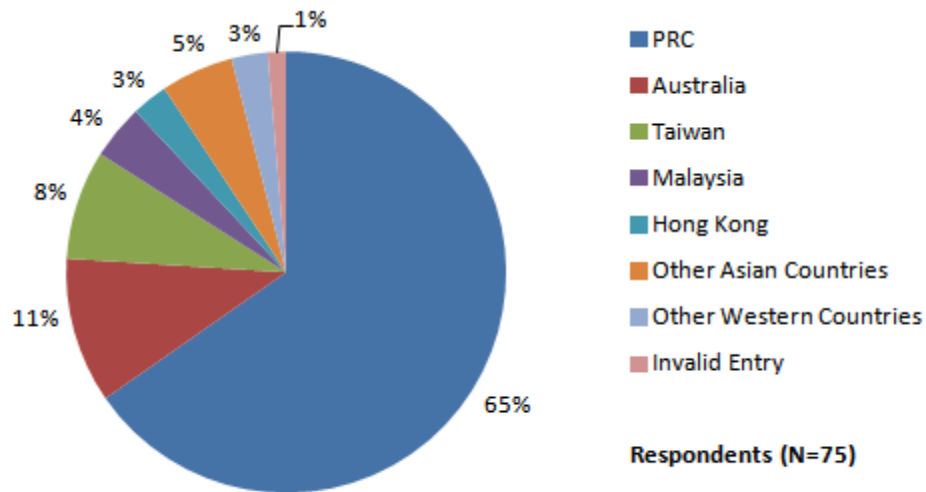


Chart 1: Survey Respondents' Country of Origin

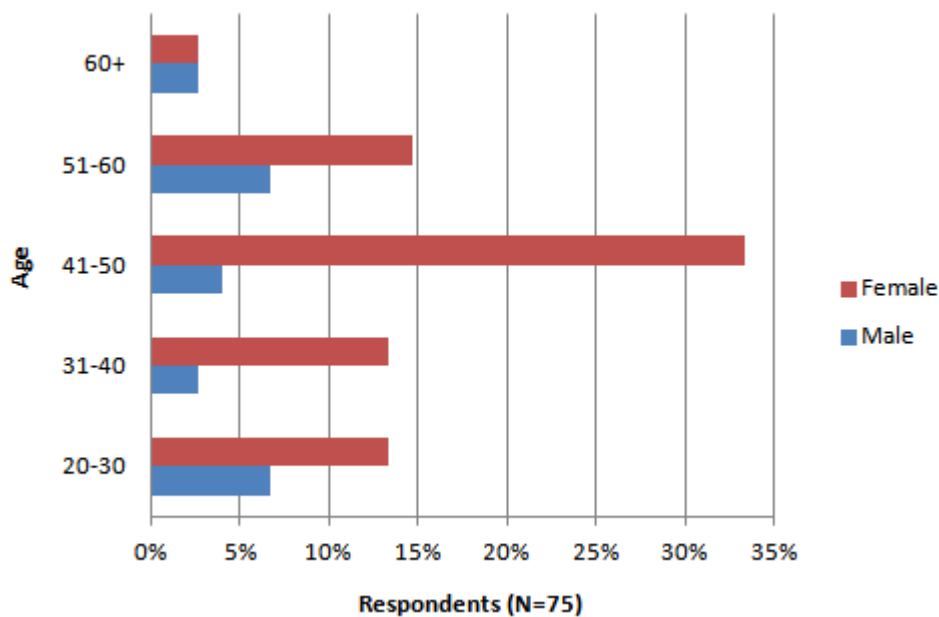


Chart 2: Survey Respondents' Gender and Age

Although estimated to represent only a little more than half of Victoria's day school teachers of Chinese, the participant cohort includes teachers from the full range of Chinese societies from which the teaching force is drawn. The predominance of female respondents among survey participants is noticeable. The ratio of more than 3 : 1 is double the suggested gender imbalance of 3 : 2 shown in national data taken in 2008 (Orton, 2008). While the recent increase in Chinese programs will certainly mean that even more women are teaching Chinese than four years ago, the imbalance in survey gender figures seems likely also to reflect higher participation by women.

Years of Teaching	No. of Respondents	Year Levels Respondents Teach					
		Foundation	Years 1-3	Years 4-6	Years 7-9	Years 10-12	Tertiary
1-5	30	8	13	15	20	11	0
6-10	13	3	5	6	11	9	0
11-20	25	8	11	14	14	12	1
21-30	6	0	0	0	4	6	0
31-40	1	0	0	0	0	1	0
No. of Responses	75	19	29	35	49	39	1

Table 1: Survey Respondents' Teaching Experience and Levels Taught (N=75)

The two biggest groups of survey participants are those who have begun their career within the past five years, and those who have been in the field from 11-20 years (see Table 1 above). Those who have taught for more than 20 years are all secondary teachers; and Years 7-9 are the most-frequently taught year levels.

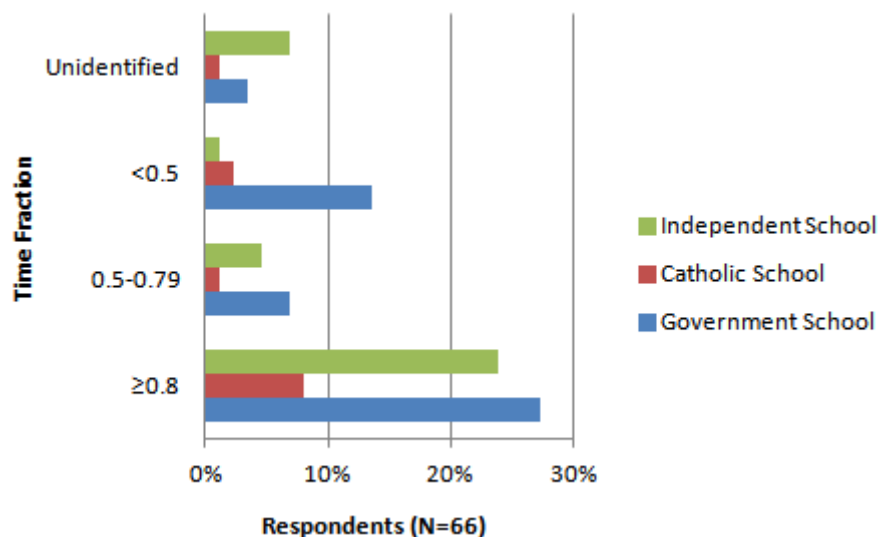


Chart 3: Education Sector and Time Fraction of Survey Respondents

66 respondents identified their school's sector and their teaching fraction time. Half of these are teachers in government schools, and the remaining half work in either independent or catholic schools (see Chart 3 above). Approximately 60% of respondents are teaching full-time.

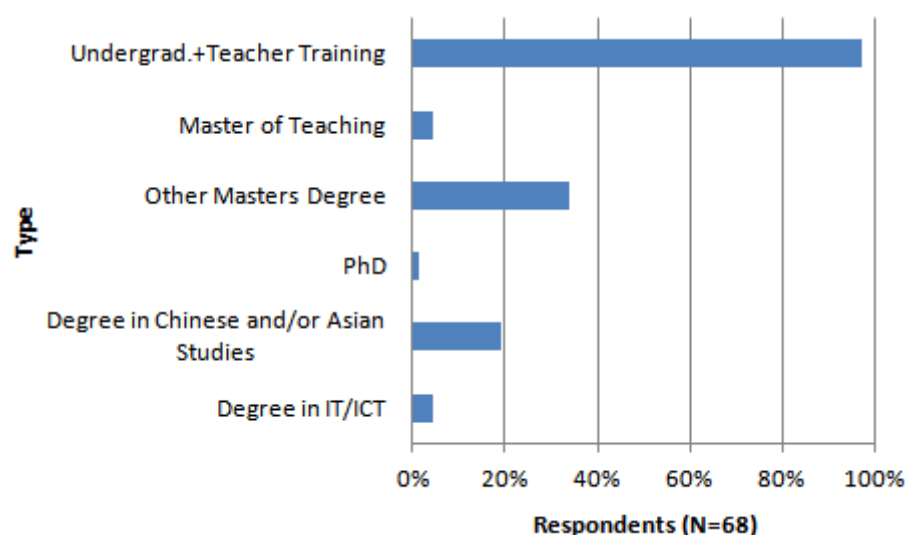


Chart 4: Survey Respondents' Qualifications

Chart 4 above presents the principal categories of qualification held by survey respondents. 97% have completed undergraduate studies and teacher training, and 4% have a Master of Teaching. A further 34% have a Master's degree in Arts, Education or Sciences, and 1 respondent has a PhD. Only 19% majored in Chinese and/or in Asian Studies, while many others majored in English Literature or the teaching of English. 4% have qualifications in IT or ICT.

Interviewees

No.	Name	Age	Gender	Country of Origin	Qualifications	School Sector	Time Fraction	Year Levels Taught in Past 3 Years	Years of Teaching Chinese in Australia
1	Kaixu	27	M	China	Dip. Ed	Government	1.0	Years 7-12	4
2	Tom	35	M	Australia	Dip. Ed	Catholic	0.83	Years 7-12	6
3	Zhenni	42	F	China	Dip. Ed; Master of ICT	Independent	0.9	Years 7-12 & 3-6	6
4	Xiongqi	30	M	China	Master of Teaching	Government	0.9	Prep-Year 6	3
5	Daisy	35	F	China	Master of Teaching	Independent	0.8	Years 3-9	5
6	Lily	38	F	Hong Kong	Bachelor of Teaching; B. Ed	Government	0.9	Prep-Year 6	15
7	Tiwen	61	M	Malaysia	Dip. Ed; B. Ed	Government	0.2	Years 7-10	15 +
8	Ellen	39	F	Malaysia	ME Electronic & Electrical; MA Translation (Chinese-English); Dip. Ed.	Government	1.0	Years 7 & 9	2

Table 2: Profiles of Interviewees (N=8)

Eight survey respondents volunteered to be interviewed. Their details are provided in Table 2 above. Names used are pseudonyms. Each school sector is represented among the eight interviewees at a ratio of 5 : 2 : 1 government to independent to catholic, figures not far from the 2008 total Victorian

ratio of 5 : 2.6 : 1.8 (Orton, 2008). Except for their differences in age, group members are largely similar with respect to background, teaching experience and stage of career. Thus only one is not of Chinese origin, and all but two have taught for less than six years. The men in the group almost all teach secondary, while the women are more evenly spread. The oldest participant is teaching a 0.2 load, but the rest are at or close to a full-time fraction. All participants have at least one teaching qualification recognised in Australia.

RESULTS

Results are presented in four sections: (1) ICT Training, (2) ICT Support, (3) Teacher Use of ICT, and, (4) Teacher Beliefs about Using ICT. The results of the survey are presented in charts and tables and discussed with reference to further information provided in interviews.

ICT Training

Survey respondents were asked about the amount of time they had spent on ICT training, their preferences with respect to the nature and value of their previous training, approaches to being taught to use ICT, and their needs for future professional development in the area. Results show that in the previous three years, 17% of survey respondents had undertaken more than 50 hours of ICT training, half had spent between 11 to 30 hours studying ICT formally, and a quarter had spent fewer than 10 hours.

Opinion	Formal ICT Training Received (hours)	No. of Respondents	Positive %	Uncertain %	Negative %
Useful for my teaching	0-10	18	56	44	0
	11-30	35	80	17	3
	31-50	4	100	0	0
	50+	12	83	8	8
Benefits student learning	0-10	18	50	50	0
	11-30	35	66	31	3
	31-50	4	100	0	0
	50+	12	92	8	0

Table 3: Respondents' Perceived Benefits from Training (N= 69)

Table 3 above shows the fewer hours of formal ICT training survey respondents have undertaken, the more uncertain or negative they are about the usefulness and benefits of the training in their teaching and their students' learning. For instance, close to a half of those who have only had 10 hours or less are unsure whether their training has been of benefit, while in the 11-30 hours range only about one quarter are uncertain or disagree. Although only involving 4 respondents, the 31-50 hour group all assert the positive impact of ICT training on their teaching and their students' learning. Very few of the most active trainees are doubtful about the benefits.

In Focus Group discussions, 3/8 participants agreed on the positive value of the training they had received. Zhenni, for example, claimed that learning from ICT experts freed teachers from having to spend time personally exploring ICT tools and functions, time they could well use teaching the subject. Kaixu recognized that ICT training helped him "gain more knowledge and skills in the area". Tiwen

valued the convenience of using an online PD format to share and communicate ICT ideas with others. He specifically expressed his enjoyment of the fortnight Hanyu Laoshi Show that had been developed by the CTTC since 2011 as an online webinar for exchanging pedagogical ideas and enhancing teaching skills.

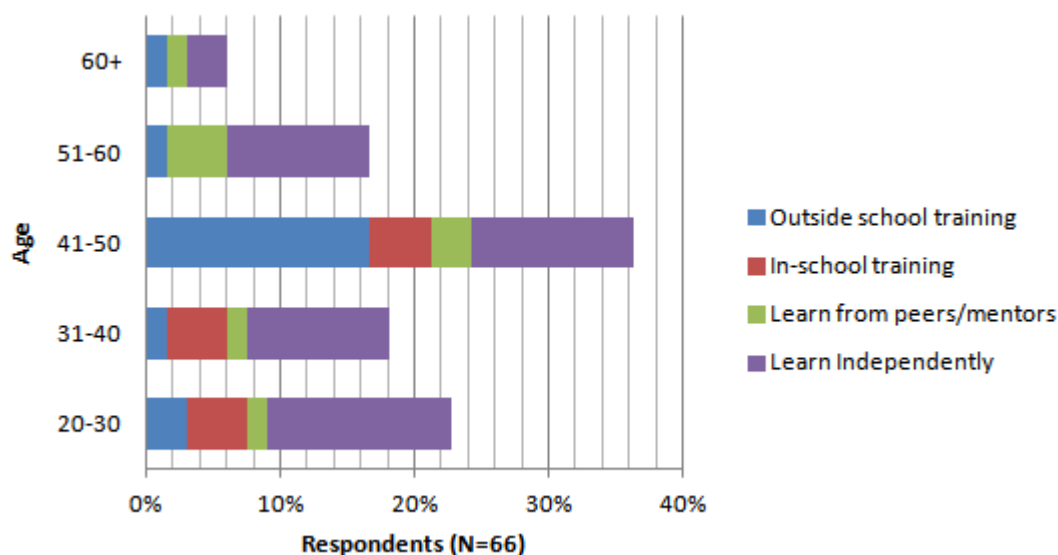


Chart 5: Preferred ICT Learning Method

Chart 5 above presents survey respondents' preferences concerning approaches to learning ICT. Despite many ICT training programs being offered to them by external PD organisations and at their own schools, survey respondents' favourite ICT professional learning method is independent exploration. The only exception is the 41-50 year olds, who favour outside school training slightly more than all other learning opportunities.

Interviewees said that many of the professional learning sessions they attend are only generic digital programs and the online resources that are introduced are for teachers of all languages. They are dissatisfied with these very common ICT training programs, finding them insufficiently specific for the needs of Chinese and their teaching contexts. For example, many of the resources presented are not able to recognize Chinese characters, while other software are not necessarily designed to support language learning, but are intended for subjects such as history, or simply for gaming. At the same time, three interviewees considered some sessions on currently fashionable devices like iPad to be irrelevant to their teaching needs. As Tom said: "Sometimes the training is about a piece of hardware or software that I'm not using, but I might in the future. But the usefulness of that is quite limited, because by the time I do get to use it perhaps it's obsolete, or it's changed, or I've forgotten anyway." The interviewees agreed they had learned to select carefully so as to get training in things they could immediately apply in their teaching. An alternative learning strategy used by Tiwen is simply to ask about ICT at any time to anyone from among his colleagues, family members and students.

Due to travelling problems or the unavailability of replacement teachers, the two interviewees who teach in regional areas said they no longer participated in regular external PD programs. Instead, they seek professional support from online PD opportunities and through personal exploration of ICT tools and skills. This solution often leaves them feeling frustrated at being unable to connect to a webinar or at having to spend inordinate amounts of time searching for appropriate and relevant ICT tools.

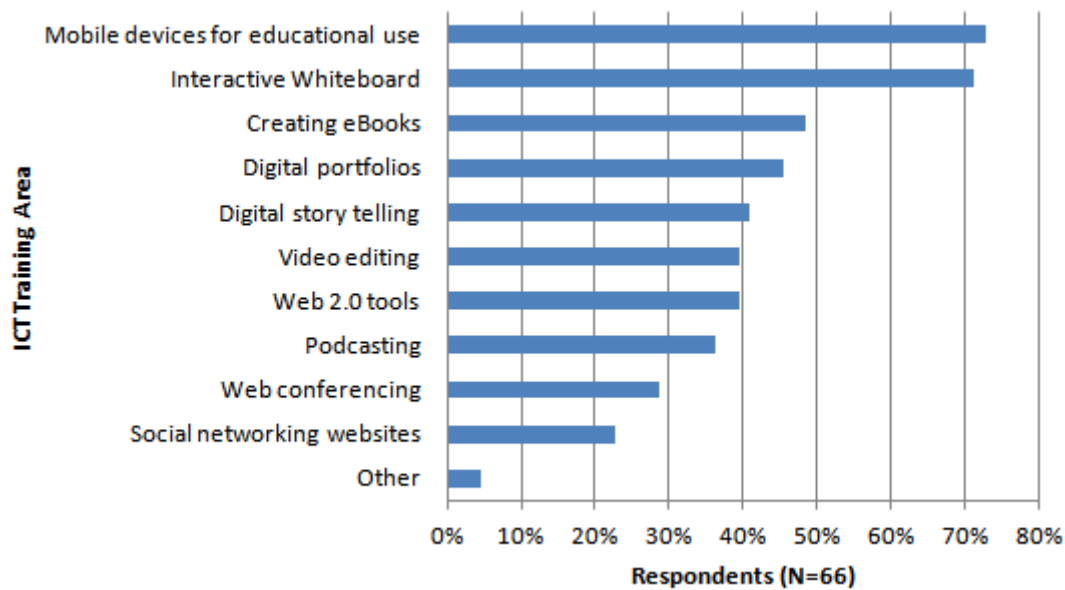


Chart 6: Future ICT Training Wanted

Despite the number of concerns and the severity of their criticism of the quality and forms of current ICT training, survey respondents are keen to prepare themselves in a variety of ICT areas. Mobile devices for educational use, such as iPad, iPhone and iPod Touch, and IWB, are the top two areas they want training in (see Chart 6 above). As the Chart also shows, there is relatively high interest in training to use a range of other tools. Social networking websites and web conferencing technology are not among those most attracting interest.

In addition to being keen to receive training in certain ICT areas, the interviewees put forward a number of suggestions and recommendations for future PD ideas. 3/8 thought teachers should be constantly sharing ideas with each other. Elaborating on this, Kaixu proposed that teachers work together to develop an online platform to provide massive teaching resources, containing exhaustive language topics for anyone and at any time; and Lily, who has done a number of training sessions for other teachers, suggested that there should be more such PD, network meetings and conference opportunities for teachers in regional areas.

ICT Support

Sector	Physical Equipment Support			Digital Resource Support			IT Support Team			Feel Being Supported			Other Support Source		
	Agree (A) %	Neutral (N) %	Disagree (D) %	A %	N %	D %	A %	N %	D %	A %	N %	D %	A %	N %	D %
Government	24	23	4	11	31	9	21	26	4	23	21	7	14	24	13
Catholic	7	6	1	6	7	1	9	4	1	7	4	3	6	6	3
Independent	20	9	6	16	13	6	21	11	1	13	14	7	10	10	17
Total	51	38	11	33	51	16	51	41	7	43	40	17	27	40	33

Table 4: Evaluation of School ICT Support Available (N=70)

In spite of millions of dollars in ICT investment in school classrooms and the ongoing promotion of digitalized education from top to bottom of the school system, only about half the survey respondents agree that they are well equipped with either ICT hardware, or with human resources to support their needs in teaching (see Table 4 above). Similarly, while some interviewees are satisfied with the equipment and technical support for using ICT provided by their school, others are unsure about this, or even feel they are not well supported. For example, Lily, Daisy and Tiwen are generally satisfied that their students have the necessary hardware available to them, and Lily has an even wider range of digital resources for her use. Others, however, presented a set of problems in their current teaching environment and a few suggestions for improvement. Ellen worked in the computer industry prior to becoming a Chinese teacher. She does not perceive computers as a necessity in her teaching, but predicts that having a minimum of four or five computers to be used in group rotation would enable her students to work efficiently on some projects. In saying this, she was assuming it would not be financially feasible for her school to provide each student with a computer, as she would prefer. From Tom's observation, techniques such as the simple physical set up of the furniture can either enhance or inhibit the actual delivery of a lesson employing computers. His school places high emphasis on academic success and tends to employ a traditional room arrangement with all students sitting in rows at tables not easily moved. However, in such a room, student computer screens all face away from the teacher, which badly impacts on the teacher's capacity to manage a class.

There is a quite sharp difference in the level of ICT support that teachers receive from their school with respect to help with technical problems and assistance with innovation. On the positive end, Tiwen is very proud that his school employs five IT staff members, who support him well, although from time to time there are difficulties with students accessing the Ultranet. However, he sees this not as a failure of his school but, rather, as a state-wide problem due to the limits of current internet bandwidth. Daisy appreciates her school's weekly ICT Focus Group discussion that has been going for a year. She feels she has greatly benefited from taking part in such an exchange of ideas across disciplines. Kaixu, on the other hand, feels he is constantly ignored and his ICT queries and troubleshooting needs left unattended to by the IT technicians at his school. These views match well the survey data showing 43% of teachers feel their use of ICT in teaching is well supported by their schools, while more than half are either undecided whether they have support or claim they do not get the help they need.

At his interview, Tom queried the meaning of the word 'support': "I have a lot of people saying 'Oh that's good! Yeah you should do that!' But that's not support as far as I'm concerned... It's not active support... They're not opposing me, but they're not helping me." Zhenni, however, argued that even verbal recognition is a form of good support. Xiongqi is not only grateful for the full support he receives at school, but he also particularly values his schools' specialized ICT teacher with whom he had been able to participate in advanced ICT PD activities. Xiongqi believes that good ICT support

can be had by an active teacher from many other sources than their school, such as parents, other subject area teachers, and the community. Furthermore, he thinks involving these stakeholders in issues of Chinese learning and embedding elements of Chinese into their lives through their children's use of ICT at home is beneficial for all concerned.

Use of ICT

How Much and How Often?

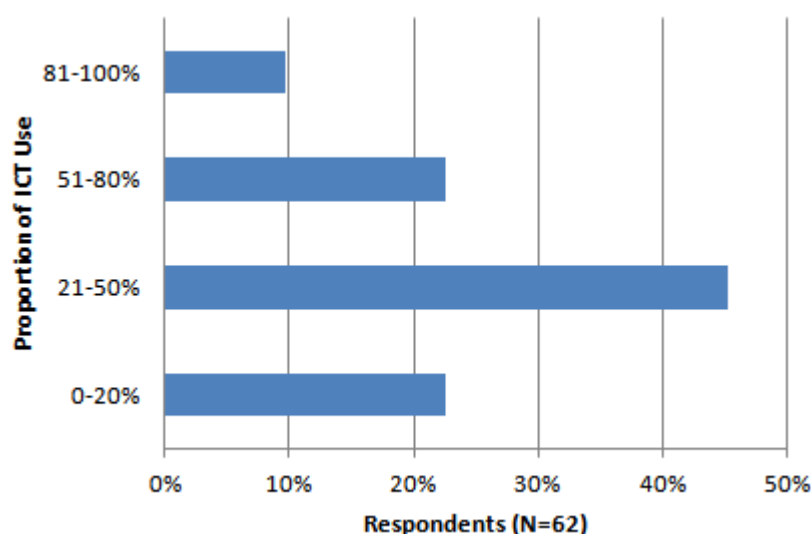


Chart 7: Proportion of Teaching Using ICT

Chart 7 above shows a wide difference in how much ICT is used in respondents' teaching. One-third make use of ICT in more than half of their teaching, while the remaining two-thirds use it in less than half their teaching. While one in ten uses ICT almost all the time, just over one in five respondents fall into the lowest user group, with ICT in less than 20% of their teaching. The interviews confirmed the pattern shown in the survey results. For example, Lily said, "All children from Grade 1 to 6 use the iPads in our Chinese class... A lot of our kids use Macbook or PC to study... As well, we have several iPod Touches available." Tiwen said there were times that he would run a class of 90 minutes solely using ICT and other times when he used none, a choice made in relation to the specific matter he was teaching and student behaviour. However, his school had recently introduced the VET curriculum and he had yet to set up a teaching plan in which he could integrate using ICT with the VET standards.

By contrast, Daisy decides her use of ICT in accordance with the equipment available, the maturity of her students and the curriculum. Due to limited equipment available, Daisy only lets her primary students use computers once or twice a term, but she uses them more often in her middle year classes, where each student is provided with a Netbook. She rarely uses ICT with her VCE students, however, "because VCE examination does not contain a computerized component and in most occasions students are required to write essays using pen and paper and to read hard-copy passages." Ellen makes minimal use of ICT in her classes due to computers being "a scarce resource" at her school. Because not all students have a computer, she feels she cannot use ICT much.

ICT Tools and Activities

ICT Tool	Percentage Using the Tool (%)	Average Frequency of Use Ranking of the Column 1 Tool by Column 2 Teachers
PowerPoint	75	5
Online language learning sites	67	4
Web 2.0 tools	51	1
Interactive Whiteboard	49	2
Audio/video recording	46	3
Mobile devices	34	6
Web conferencing	15	12
Online surveys and polls	15	10
Google Earth & Google Maps	13	7
Video editing software	13	11
Digital portfolio	13	9
Podcasting	13	15
Social networking websites	11	13
Graphic organizer, content and Mind Mapping software	7	16
Others	5	14
eBook Reader	3	8

Table 5: Ranking of Frequently-used ICT Tools (N=61)

PowerPoint, one of the earliest and best-established ICT tools among teachers, is the most widely used product by survey respondents, well ahead of all others except online sites offering learning resources. Then follow Web 2.0, IWB and audio/video recording devices, which are used by only about half of those surveyed. Those who do use IWB, Web 2.0 tools and audio/video recording devices, use them very often, and together they constitute the most commonly employed tools of the 16 listed. Using these three tools was also listed by survey respondents and interviewees as their favourite ICT activities. These tools are mostly new additions to the Chinese classroom, and what they can offer is yet to be fully explored and mastered by teachers with the exception of some technological pioneers. Although training in the use of IWB and mobile devices ranked very high on teachers' professional wish list, half of the survey respondents are already using the former and a third already using the latter.

Teachers use PowerPoint to structure lesson plans, demonstrate teaching content, showcase students' work, and for evaluation and assessment purposes. Web 2.0 sites such as Wiki and Edmodo are adopted as a platform for sharing resources, exchanging ideas and posting assignments, whilst Google Search, Quizlet and many language learning websites are customized to suit various purposes, such as sourcing realia, drilling linguistic aspects such as character formation and vocabulary, creating student work and assessment tasks. The most widely explored function of the iPad is to download and store applications which students can use to practice speaking and writing, and to do so often in an entertaining manner. Tiwen finds using an iPad can ease the burden of preparation and allows him to have his middle-year students create and teach lessons to lower-year learners at the feeder school. While a small number of participants appreciate the drag and drop feature of an IWB and its potential in gaming, some only use it much as a traditional whiteboard, to demonstrate language examples and text analysis.

In addition to the practical functions of ICT resources, teachers also carry expectations that they can stimulate other aspects of learning and development in their students. For example, some expect ICT to change the dynamic of their traditional Chinese classroom by improving the interactivity and collaboration among learners; others seek to nurture students' information seeking skills and organisation skills. Other teachers like the fact that digital resources provide instant feedback on learning and, unlike the classroom, offer the chance to expose students to an authentic language environment. A final group simply appreciate the tools as a way to reinforce a number of linguistic aspects, and to leave e-version homework. In addition, most respondents expect technology to arouse students' interest in the language and motivation to learn by adding an element of fun to some of the more tedious aspects of language acquisition. Participants said many of their students love using ICT and are grateful to those Chinese teachers who let them use it, perhaps because not many other teachers of Chinese or other subjects use ICT much.

Student Freedom to Use ICT

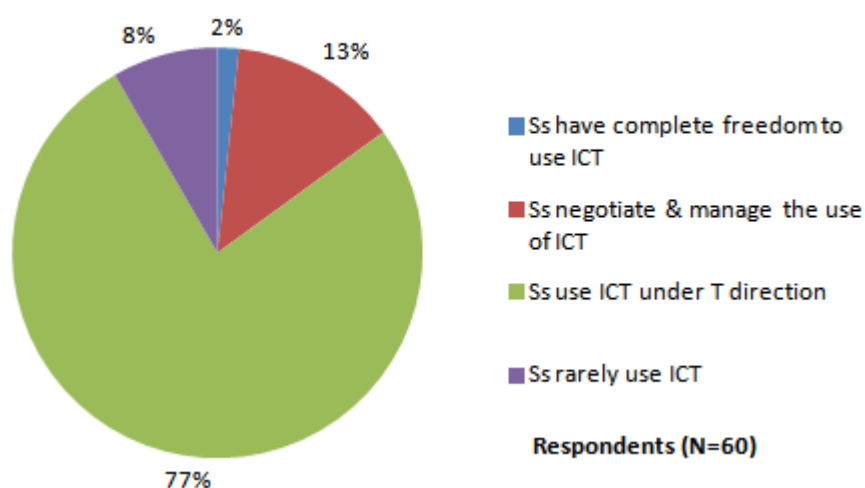


Chart 8: Student Autonomy in Using ICT

With the advent of digital technology, some teachers have been forced to rethink their role in the classroom and how they should manage their relationship with learners. With respect to this, as Chart 8 above shows, 77% of the survey respondents declared that they let learners use ICT under their direction and 13% allow students to negotiate ICT use with their teacher and peers. On closer examination, it seems that even those who claim to permit students to negotiate, limit the choices available to them, at most letting students choose the format and tools they will use to work on a set assignment. Most participants claim it is both efficient and responsible to model samples of work to students prior to having them create their own work. Alone among participants, Daisy, does not even allow this freedom, but directs her students to which tools they are to use to complete the work set.

Lily and Tiwen are two of the 2% who claim to grant full freedom to their students. Illustrating this, Lily said, "Today I asked my Year 5 students to help me decide what ICT resources they would like to buy, given that I have a bit of money to spend on teaching. I showed them a number of tools on the IWB and they ended up choosing a few that they will certainly use. At the same time, they felt there were a couple that might be too easy for their age. They suggested I buy these for my junior kids." Tiwen plans to have his students create an iPad app for Chinese teaching or character writing: "Because it is not so hard to create an app now. They can design a game or something. If they are successful, they can make some money out of it."

Issues in Using ICT in Teaching

From the survey and interviews a number of issues in using ICT emerge, major among which are matters over which teachers have no control, attitudes to ICT use, basic technical skills, and student attitude. Key factors in moderating the use of ICT, over which teachers have no control, are slow Internet connection, school restriction on accessing external websites, a prohibition on students bringing certain devices into the learning space, and, within their own milieu, the lack of time to explore the constantly growing list of new tools and devices. Major attitudinal issues are a mistrust of, or at least a lack of confidence in, the efficacy of ICT as a teaching aid and a tendency to use technology to teach as they have always taught: “not actually using it to extend what the kids can do to do things that they couldn't possibly have done before ICT”. Some teachers, of any age, were inclined to view ICT as a toy offering largely entertainment value. What is needed, one interviewee said, is “imagination, creativity, and like-minded people to think about how the power of ICT could best be brought into play”.

Teachers initiating use of ICT with insufficient technical capability often leads to time wasted in unsuccessful attempts at resolving glitches, usually accompanied by a loss of classroom control. Teachers complain that students are also likely to make use of devices to play games rather than do set exercises. One interviewee said she has had to make students stay back and complete tasks when they do not get them done in class time due to messing around with games. Another said that for the same reason she thinks ICT can be a good medium for reviewing class work at home, but she can still not get her students to do that, even using ICT.

Beliefs about Using ICT

The Value of Using ICT

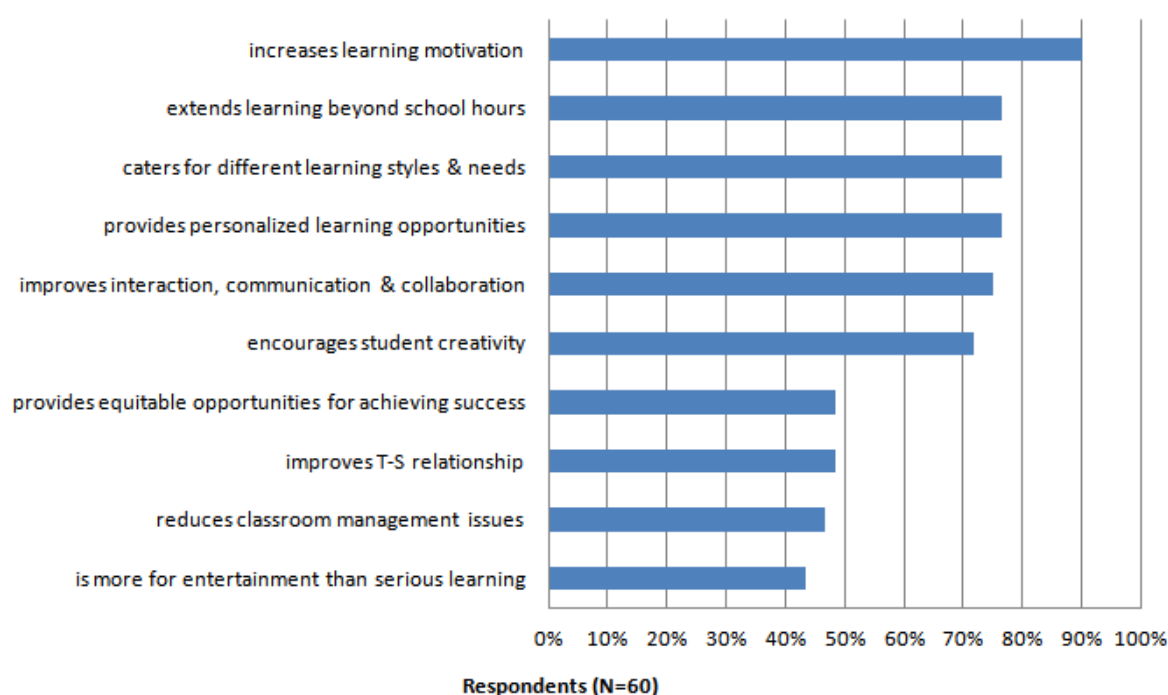


Chart 9: Beliefs about Using ICT

As Chart 9 above shows, there is high consensus among participants about the major benefits of using ICT. The highest benefit is seen to be its capacity to increase student motivation. The majority

also agree that it allows students to spend more time on Chinese, to work on what they need to work on and in their own way. At the same time, ICT permits greater sharing and collaboration among students. Despite these positive remarks, 43% of participants also believe ICT is more for entertainment than serious learning. They are also divided about its benefits for their relationship with students and classroom management problems, and barely half think ICT is equally beneficial for all students.

ICT and Learning Motivation

Among the eight interviewees, Xiongqi is firmly of the opinion that the interest ICT arouses in students makes it “the best teacher” and Daisy agreed, saying it also leads to them relating to her better. Tom, on the other hand, wondered if ICT did not just arouse a momentary curiosity creating only a superficial interest that masked a lack of genuine inner drive to learn the language well. The interviewees were strongly on the side of those who see ICT’s greatest value being its capacity to entertain and felt this is a natural thing – “It’s also true for adults”, Tiwen pointed out. Lily said it had completely changed her students’ attitude to writing characters: “They used to grumble and say, ‘What – *more* writing characters? How *boring!*’ but if they have to write them using an iPad they say, ‘Yay!’” The others agreed that ‘being entertaining’ did not have to be incompatible with ‘having value for learning’.

ICT- Aid or Burden in Teaching?

Despite agreeing on the potential value of ICT in the teaching and learning of Chinese, those interviewed were deeply divided over whether or not using ICT actually assisted their teaching of Chinese. Thus Tom, Tiwen and Kaixu all agree that “ICT is really great”, but “only when it’s working”, and Kaixu, while not denying the usefulness of ICT in assisting his teaching, feels it demands a lot of resources to maintain and support. On the more negative side, Ellen acknowledges the worth of ICT in preparing for lessons, but firmly believes that ICT cannot really fulfil its potential until the problems caused by malfunction and misuse can be eliminated. Of the eight, only Lily is an unalloyed supporter of using ICT for language learning. She does not consider ICT hard to master and feels those who find technology a burden “simply do not want to learn about ICT”. In the digital age, the teaching is less likely to meet all students’ learning needs if it remained using a static textbook, pencil and paper. With ICT, opportunities increase for learners to practice listening and speaking, as well as to more easily apply their learning, far more than what is possible by just using a textbook.

The experience of technical failure is the critical factor in turning teachers away from using ICT. It is a “de-motivating” process for both the teachers who lack confidence with ICT and those who begin confidently. Tom said that those already less confident users of ICT often experience failure and get “scared off” and discouraged, and even the confident ones end up spending twice the usual preparation time because they always prepare a backup. This leaves teachers like Tom feeling they are fighting a lonely battle with little collegial support to keep exploring ICT. Thus, despite society moving further into the digital age, the base of teachers who support and use ICT in Chinese teaching is gradually shrinking.

ICT and Classroom Management

Although having the potential to involve learners more in their learning, interviewees believe its influence on classroom management issues ultimately depended on how it is used and the types of task involved. Xiongqi sees classroom management as a much broader topic that is independent of technology. He thinks management problems associated with using ICT can be relatively easily managed by establishing clear policies. In fact, all eight interviewees think classroom management is “intimately linked with” teaching method. Thus management issues which seem related to the use of ICT in fact originate from providing unsuitable learning tasks and uninteresting material. ICT, of itself, cannot solve management problems or result in learning. Indeed, they feel the view that ICT would solve problems in either domain is “naïve” at best and “irresponsible” at worst.

The Role of ICT

ICT is perceived as “a tool” by all interviewees, something that can provide greater convenience and higher efficiency to teaching and learning, require less time, and, most particularly, be the means to develop learner interest and to offer opportunities for language practice. As such, ICT is there to be used or not by teachers, depending on their needs and conditions, and is an aid available to students. But ICT itself is not knowledge, nor does it provide content or sequences of learning.

The interviewees could not guess what might eventuate in the coming decade, just as ten years ago no one had imagined how the iPhone and iPad would open up the world to education. But they feel each invention brings teachers the challenge of “how to maximize our use of these resources and the great power conferred by ICT”?

Student Autonomy in Using ICT

The interviewees were divided over what constitutes the right amount of autonomy to be given to students in the use of ICT for learning Chinese. Most approve a certain degree of student autonomy to encourage creativity, as well as to relieve the teacher from having to attend to the whole class all the time. Following an initial teacher modelling and establishment of parameters or criteria, they think students should be free to choose the technology they employ to complete certain work. Tom, however, was torn between wanting to challenge his students to be more risk-taking in his academic-result-driven school, and personally not feeling comfortable when it comes to giving students a lot of freedom. His solution is to say “Well, I want you to use this, but afterwards we’re gonna talk about that - Did it work for you? What was the experience like?” He thinks getting students to discuss their experience is good for learning, too. Neither Lily nor Tiwen are concerned about possible student abuse of autonomy to use ICT. Instead they believe exploiting the often hidden ICT talent of students can help less-confident teachers cope with their own lack of ICT skills and enlarge the range of resources available for the whole group.

Factors Affecting Teacher Decisions

From the interviews, the following set of key factors are evident as reference points in the decisions interviewees make about what, when, where and how to use ICT in their teaching.

- The school: How well-equipped the school is in ICT and how much technical assistance is available limits the range of tools accessible and the likely efficacy of using them.
- The student: The selection and implementation of ICT in teaching is greatly influenced, even determined, by students’ reaction and feedback.
- The teacher: The power to decide how and what ICT should be used in teaching, or even not to use it at all, resides with the teacher involved and is exercised on the basis of what he or she is comfortable using and believes is of value. All teachers could be taught to use some ICT if they wanted to.
- The teaching objective: the quality of a lesson employing ICT depends on clear teaching objectives and expectations for students being set prior to the start of their work. Introducing rubrics and criteria for teacher and students for various learning tasks might increase the efficacy of ICT use and avoid the common problem of lessons not being well thought through before they are started.
- The grade level: The degree and level of using ICT should vary based on the needs of different year levels and age groups, with perhaps the greatest use after the very early years and before the senior classes preparing for exams.
- Classroom management: ICT should not be used for every single lesson or it would “drain students’ interests”.
- Financial cost: The affordability of many apps for iPhone and iPad is an incentive to use ICT.

DISCUSSION

The study presented provides a composite account of the type of software and online digital resources that Victorian Chinese teachers use in their classrooms, the extent of this use and the factors affecting their choice of such resources. It also demonstrates a large number of similarities and some differences in their circumstances when using ICT to teach Chinese.

What and How ICT Is Used

There is a range of views and actual use of ICT in the teaching of those who participated in the study, with most gathered along the central section of the continuum between high use and no use. The majority integrate a certain amount of ICT into their curriculum, yet are not solely dependent on it. The deciding factors in whether to use ICT or not are the accessibility of school-provided ICT resources, curricular requirements, and the ease with which they can source and explore ICT tools.

The most sought-after ICT tools include well-established basic PowerPoint and the newer technologies, such as iPad, iPhone and IWB. PowerPoint tops the list due to its ease of operation and various features useful for educational purposes. Despite many such functions, an ICT tool is not likely to be well accepted if it consumes too much time to master or fails to improve teachers' work efficiency. Because of this, many Chinese teachers risk stagnating into using just what they already know and are familiar with, and as a result, leaving ICT resources underused.

Three major uses of ICT are revealed by the study: for showcasing students' learning results, for revision and review, for sharing resources and exchanging ideas. Showcasing learning results and student performance often involves an active learning process in which students need to constructively create and discuss their own work with the help of ICT prior to a final performance. In a much more static process, ICT tools are also used for language reinforcement, where learners simply receive questions and prepare answers. Participants combine both processes in their teaching.

Teachers' Aspirations for ICT

Data on the actual problems and concerns of using ICT in their schools reveal that teachers are significantly constrained by factors that are out of their control. Their greatest aspirations are for solid technical support for their current use of ICT, and suitable and relevant training for development of their ICT skills.

While some are well supported and others feel quite neglected, most sit somewhere in the middle of the continuum. The support they are seeking consists of positive school environment, collegial cooperation, infrastructure improvement, and better ICT hardware supply and technical help available.

Teachers desire to learn or refine their ICT skills to better meet their teaching needs. However, the lack of specificity and of relevance of many current training sessions often limited their taking part in ICT training provided by external organizations. Instead, they tend to study ICT tools on their own, which often leads to tension over the use of their time to improve their ICT competence or to get on with their actual teaching work. Online training, with its flexibility in space and time and the fact that it is often free, can provide some resolution to these problems. Online training offers a way to make training available to a wide group, but only if a clear connection can be assured and help provided if a malfunction occurs.

The Tensions of Change

The results of the study show some teachers hold conflicting views about the value of ICT for their teaching. On the one hand they recognise the opportunities it provides for students to practise their

language and see it as being a motivating mode of learning; but on the other, there is also a perception that the engagement it arouses is superficial, not really leading to deep learning, or even to intrinsic motivation. There are mixed feelings over the trend to “gamification”, with only some believing this has great potential to help learners learn a language. Teachers find using ICT interrupts their established role as the technology ‘steals’ students’ time for language practice and application in ways they are used to. There is also fear that use of tools such as IWBs leads to broad whole class lessons without individual attention, effectively returning lessons to teacher-centred events.

On reflection it can be seen that, beyond just the practical matters of technical capability, teachers of Chinese are currently uncomfortably travelling a new road, having left the security of their old practices but not yet arrived at their new destination, nor even clear where that might be. Urged to embed ICT into their teaching so as to become true 21st Century teachers, capable of leading the new generation of ‘digital natives’, teachers have been put in the position of having to re-think and re-construct their role in education. As the teachers acknowledged, these matters are more related to pedagogy and teacher preparation for using certain ICT tool than to the use of ICT itself, a point which echoes the findings of previous research (Northcote & Mildenhall, 2010). It will take a great deal more such research and dialogue before we can begin to separate the factors involved in successful teaching with ICT. In the meantime, there is a need to appreciate the situation of the classroom teacher undertaking significant change in his/her classroom, struggling with time pressures and a lack of confidence with machinery, and often getting little help. What they are calling for is well scaffolded, targeted professional development, opportunities to chat and exchange ideas and experience, help in sorting through new tools and sequencing integrated use of ICT with other resources, an encouraging school environment, equipment that functions and ready assistance for the times when it doesn’t.

REFERENCES

Department of Education and Early Childhood Development. (2011). *The Victorian government's vision for language education*. Melbourne, Australia.

Marshall, C., and Rossman. G.B. (2006). *Designing qualitative research*. (4th ed.). Thousands Oaks, CA: Sage.

Northcote, M., & Mildenhall, P. (2010). Interactive whiteboards: Interactive or just whiteboards? *Australasian Journal of Educational Technology*, 26(Special issue 4), 494-510.

Orton, J. (2008. 2010). *The current state of Chinese language education in Australian schools*. Melbourne: The University of Melbourne.

Orton, J. (2010). Educating Chinese language teachers – Some fundamentals, in L. H. Tsung and K. Cruikshank, *Teaching and Learning Chinese in Global Contexts*. London, UK: Continuum.

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