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Using distance education and ICT to improve access, equity and the quality in rural teachers' professional development in western China

Bernadette Robinson

UNESCO Centre for Comparative Education Research
University of Nottingham

Abstract

The goal of 'teacher quality for all' is proving difficult to achieve in many countries, especially in rural areas, yet teacher quality is a key determinant of students' participation rates and achievement levels. It also affects the attainment of social justice in terms of equity in educational quality for students. One contributor to teacher quality is professional development though limits on its availability and quality create inequity for many teachers. This paper describes how distance education and ICT improved access, equity, and quality in professional development for rural teachers in one province in western China, viewed through the lens of a 'rights-based' framework.

Keywords: Rural teachers; Information and Communication Technologies (ICT); continuing professional development; teachers' rights; EU-China Gansu Basic Education Project

Introduction

Many countries are progressing towards the goals of Education for All, but struggle to achieve 'teacher quality for all', especially in rural or remote areas in developing countries. Yet teacher quality is one of the key factors determining the participation rates of children in schooling and the quality of their education (Verspoor, 2004; OECD, 2005; Hanushek, 2005). Though indicators of teacher quality are contentious and the methodological problems in comparing their significance considerable (Vignoles, Levacic, Machin, Reynolds & Walker, 2000) there is broad consensus that it is the single most important school variable influencing student achievement (Darling-Hammond, 2000; Rivkin, Hanushek, & Kain, 2005; UNESCO, 2006). It is also an important element in promoting social justice in terms of educational quality in rural and remote areas, where teachers tend to be less qualified than their urban peers and less well resourced and supported. In recognition of its importance, support for teachers' continuing education is receiving more attention in the discourse of international and national agencies, for example:

[I]n our fast-changing world, teachers must be engaged in life-long learning to be able to meet new challenges. It is a grave political contradiction that so much emphasis is being given to the importance of education while so little is being

done to give teachers status, support and reward. . . The professional status of teachers should be recognised as one of the most important in society. . . It is the responsibility of policy-makers and school management to support and empower the teachers in this important role, and to work toward raising their professional status. (Thomas Hammarberg, Commissioner for Human Rights, Council of Europe, on World Teachers' Day, 5th October 2006)

Few would disagree with Hammarberg that teachers should be supported and empowered in their professional role though the means of achieving this generates diverse views. Providing an enabling environment (i.e., policy, resources, and support) where teachers have access to relevant professional learning opportunities presents governments and planners with huge challenges. 'Learning opportunity' here refers, not just to a training event, but to "an experience with an anticipated or inferred learning outcome. Such an experience may be carefully planned and purposefully structured, or it may occur naturally and informally" (Schwille, Dembélé, & Schubert 2007, p. 29). In her review of international literature on teachers' professional development, Villegas-Reimers (2003) concludes that a career long approach to it "requires the transformation of processes and policies that support teachers, their education, their work and their growth in the profession" (p. 141). In other words, it requires system-wide policies and arrangements that are fair, inclusive (open to all teachers), good quality, and affordable.

Distance education has the potential to support such policy goals, as has been demonstrated in both developing and industrialised countries (Robinson & Latchem, 2003; Perraton, Robinson & Creed, 2007). Without it, some of the improvements so far achieved in teacher quality would not have been possible, especially in developing countries. The growth of Information and Communication Technologies (ICT) has added new options for teachers' professional development (Collis & Jung, 2003; Unwin 2005; Leach, Ahmed, Makalima, & Power, 2006) as well as raised concerns about the inclusion of disadvantaged groups. But how can the use of distance education and ICT support goals of social justice in teacher education in rural and resource-poor areas? What kind of criteria should we use in judging their achievement?

This paper examines these questions in the context of the European Union (EU)-China Gansu Basic Education Project. It begins with a brief description of the project, then examines the broader issue of teachers' rights to professional development (i.e., the policy context in which any teacher education sits) and then assesses the project's outcomes using a rights-based framework (Tomarševski, 2004) drawing on research and evaluation data from the project.

The EU-China Gansu Basic Education Project (EU-CHINA GBEP)

The goal of the EU-China Gansu Basic Education Project (GBEP) was to improve quality in basic education as a means of alleviating rural poverty in the poorest 41 of Gansu Province's 86 counties.¹ The project was jointly funded by the European Union (€ 15 million) and the Chinese Government (€ two million) and implemented by Gansu Provincial Government from October 2001 until March 2007. Gansu is one of China's poorest provinces, located in the northwest. While coastal and eastern parts of China have experienced huge economic growth over the last decade, western provinces have lagged behind, leaving wide economic and social gaps between them. The rural-urban divide has widened too. To counteract this, the Chinese government has provided special funding and projects for western and rural China, using distance education and ICT as strategies for achieving development goals.

Gansu Province has a population of 26.4 million, about 75 per cent of it rural. In the north, the province borders on the Gobi Desert and in the south, the wooded mountains of Sichuan; much of the province is dry and dusty with soil erosion. The majority of the population is Han Chinese, but there are altogether 44 ethnic minority groups, the largest being Tibetan, Hui, Dongxiang, and Mongolian. The average rural income in Gansu was around US \$180 in 2005. School enrolment rates have greatly improved over the last decade, and in 2006 were 98.3 per cent for primary education and 88.3 per cent for junior secondary. Most teachers are qualified according to old or new national standards (i.e., 96% of primary and 88% of junior secondary) though teaching quality varies.

The main emphasis in the project was human resource development for teachers, head-teachers, and administrators, focusing on the new national curriculum, new teaching methods, the use of ICT, and educational management. It also provided 103,550 scholarships for poor children (i.e., 59% girls and 29% from ethnic minorities) to enable them to attend school. The largest project component, and the focus of this paper, was the establishment of a system of ICT-supported Teachers' Learning Resource Centres (TLRCs) for the professional development of over 100,000 rural teachers and head-teachers.

Teachers' Learning Resource Centres (TLRCs)

In order to be as close as possible to teachers and their needs, a school-based training system was created for the 41 counties, setting up 686 TLRCs at central schools in townships. Each school provided a room suitable for housing equipment and resources and for acting as a venue for teachers' activities. A set of equipment was provided for each TLRC: two computers, a modem, laser printer, CD-player and writer, data storage items (hard disk and CD-Rom), television, satellite dish and receiving software, digital camera, and some consumables. Learning resources were provided too (a set of 231 audio and video CDs, books, and guides) together with furniture. Five modules (print-plus-video) for teachers and three for head-teachers were produced locally in Gansu with technical assistance. These were on cross-curricular themes such as participatory learning, managing classrooms, guiding and assessing children's learning and, for head-teachers, supporting teachers' learning and school management. The modules were used as a core resource for training activities throughout the project, providing a coherent approach. Each TLRC served the school it was based in as well as the cluster of schools in its district (usually between 7 and 25 schools, with around 100-200 teachers altogether).

The configuration of equipment was designed to support a range of functions relevant to teachers' learning needs: getting and storing current information on the new curriculum and teaching methods, observing and discussing lessons taught by other teachers (both in actuality within their own school and via technology, either on CD-Rom or in real-time via satellite television), learning to use computers, finding and creating educational resources to use in teaching, preparing lesson plans with colleagues, interacting with other teachers and trainers either online or in meetings and workshops. In 2004, their first year of operation, just over half the 86 pilot TLRCs were connected to Internet (mostly through low bandwidth dial-up connections) but connectivity rapidly grew in availability and affordability as the telecommunications infrastructure strengthened. By 2006, over half of all 686 TLRCs had broadband connections and 85.0 per cent could connect to Internet one way or another. China's national infrastructure, integrating satellite television with computer networks (i.e., 'skynet' and 'groundnet') afforded a number of media and technology choices to suit the local contexts and particular educational goals. This enabled the EU-China GBEP to select and combine those appropriate for rural

teachers' professional learning, for use in various ways (e.g., structured or informal learning, group or individual, face-to-face or via technology, with local or distant trainers).

The TLRCs were supported and managed through a three-level administrative structure: provincial, county, district-township. Overall planning, coordination, and monitoring was carried out by the Project Office and Provincial Education Department of Gansu. At county level, the Education Bureau officers were responsible for mobilizing, supporting and monitoring TLRCs. At the TLRC host school, the head-teacher acted as the TLRC director and there were teachers with special support roles. There was a technical support teacher who was trained to maintain the equipment, solve technical problems, assist teachers to use the equipment and manage the educational resources, and one or more learning support teachers (i.e., key teachers) who provided pedagogic leadership and assistance – one of these also received technical support training. Each TLRC had a management committee consisting of the district education director, TLRC director, head-teachers from the cluster schools, and TLRC support teachers. Training in TLRC roles was provided for personnel involved at all levels of the system and policy and guidelines were developed and communicated.

As mentioned earlier, human resource development was given a high priority in the EU-China GBEP, concentrating on the 'soft technology' of people's skills, knowledge, and understanding rather than on the 'hard technology' of equipment. This was reflected in the allocation of funds and much of the project's success was due to this emphasis. The project spent 24.0 percent of its budget on equipment and 66.0 percent on training of different kinds (i.e., on the new curriculum and teaching methods, training of trainers, materials development, management of TLRCs, the use of ICT and its integration into teaching and learning).

An evaluated pilot (2003-2004)

In the pilot phase, 86 TLRCs were set up in six counties, two of them in Tibetan (Buddhist) and Dongxiang (Muslim) ethnic minority areas. Of these, 80 TLRCs were located at rural township level and six at county level, usually in the county in-service teacher training institute. The county-level TLRC had a dual role: first to act as a teachers' centre for their own institute, and second to provide pedagogical leadership and support to township TLRCs, in a similar way that a township level TLRC served the schools in its cluster.

The pilot provided a test-bed for the overall model, the equipment and the TLRCs' organization, management, and training activities. During the pilot phase, the EU-China GBEP developed tools and procedures, researched teacher training needs, negotiated with partner institutions, revised training models, created regulations and guidelines, produced and trialed support materials, defined and refined core roles, trained key personnel, constructed monitoring and record-keeping systems, initiated work on a management information system, and conducted evaluations. At the end of the first year, a forum was held for exchange of good TLRC practice and prizes awarded for the best (which was in-line with local culture).

Moving to scale (2004-2005)

In 2004 the move to scale began, setting-up a further 600 TLRCs in the remaining 35 project counties over a large geographical area (larger than some European countries). The model and resources developed during the pilot were used together with the newly skilled human resources emerging from it (i.e., selected support teachers who had proved to be effective trainers, and

excellent head-teachers and county education officers). The specifications for TLRC equipment were revised and an electronic whiteboard for county-level TLRCs added. The scale of training was large (each category in hundreds or thousands), requiring many more trainers and workshops, and the development of more robust management and monitoring mechanisms at county and provincial level. A partner institution, *Northwest Normal University*, played a key role in providing training on a large scale. There was exchange of experience and visits between the six pilot counties and the newly-active 35 counties. At the end of 2005, a competition was again organised for the best TLRCs, where the finalists presented their TLRCs' work and the best were rewarded. By the end of this phase, over 100,000 teachers and head-teachers had participated in TLRC, county or provincial level training activities.

Consolidation and extension (2006-2007)

The European Union input finished at the end of 2005 (apart from funding evaluations of the project) but the project continued with Chinese funding until March 2007. The TLRCs consolidated and extended their activities to include community groups (i.e., yak-herders, parents, farmers, women's associations, and Communist Party trainees). Peer-to-peer coaching on the use of ICT continued strongly and teacher demand for further training grew, especially on the integration of ICT into teaching. In 2006, the TLRC approach was incorporated into provincial government policy and became the main platform for providing professional development for rural teachers. Following this, the provincial education department issued a directive to counties requiring TLRC schools to allocate at least 7.4 per cent of their (increased) annual budgets to TLRC activities. By the end of the EU-China GBEP, 105,000 teachers and head-teachers in the 41 project counties had benefited directly from the project, and 2.6 million students (primary and junior secondary) indirectly benefited as they experienced improved teaching. The project's approach, methods, and materials were then extended to some of Gansu's wealthier non-project counties, which set up their own TLRCs in 2006. The provincial government provided the five teacher training modules to 27,000 more teachers in the 46 non-project counties and 1,000 key teachers and head-teachers from them participated in workshops. Teachers trained as TLRC support staff in the 41 project counties then acted as trainers for the other 46 counties and for the national government's Modern Distance Education Project for Rural Schools.

The EU-China GBEP was rated by external and internal evaluators as very successful in achieving project goals in terms of efficiency, effectiveness, and impact. But how did it fare in terms of promoting social justice? How far was distance education and ICT able to support teachers' rights to professional learning? What rights do teachers have anyway? This last thorny but unavoidable question is the starting point for the next section.

Rights, Requirements and Responsibilities

While distance education and ICT can facilitate teachers' continuing education, their use cannot be divorced from the complex issues surrounding teachers' rights to it. A case can be made for teachers' rights to continuing professional education on two grounds: as an essential requirement for ensuring teacher quality for all (as part of children's rights to basic education) and as a teacher's own right to education. The case, however, is not straightforward. Though the right to education (for adults as well as children) is included in international declarations, its status is disputed because of the complex nature of the right, which is simultaneously a political, civil, economic, social and cultural one, straddling individual and collective rights. Because of its uncertain status, Tomarševski (2004), former United Nations Special Rapporteur on the Right to Education, describes education as a 'not-quite right'. Beiter (2006), in his detailed analysis of the

right to education and its protection by international law, argues that Article 13 of the International Covenant on Economic, Social and Cultural Rights (ICESCR)ⁱⁱ places legally binding obligations on governments to ensure that education is available, but acknowledges that this is often not reflected in national law, even for basic education.

The topic of teachers' rights receives scant attention in international declarations. A scan of websites brings up little that refers to teachers' continuing professional development. Most of the rights named refer to freedom of speech, the right to strike, terms and conditions of service or grounds for dismissal. The notion that the right to education includes teachers as well as children and that 'technical and professional education shall be made generally available' to them (Universal Declaration of Human Rights, Article 26:1) is not strongly evident in educational provision or policy. As Tomaševski (2004) concludes:

Some universal human rights norms have been integrated into global education strategies, such as the elimination of gender discrimination; others are not widely known. There is, for example, only a brief mention of the rights of teachers in global education strategies. (p. 2)

Some policies and practices are discriminatory. For example, in Zambia, as in some other countries, uncertified teachers were excluded from professional development activities (Nkamba & Kanyika, 1998). In China, 'daike' teachers (community appointed and paid) are not recognised by the government or eligible for inclusion in professional development provision, though they may be qualified and teaching in government schools (Robinson & Yi, 2007); age discrimination against participation by qualified teachers over 40 years of age is commonly found too.

So teachers' rights to professional development are not secured, and this raises the question of who has rights, legal or moral, over their professional development. Policies stating government requirements for teachers to undertake continuing professional development appear to be more common than those expressing teachers' rights or entitlements to it. For example, teachers may be required to take refresher courses and re-license at regular intervals, or to participate in a compulsory number of training days. In the case of China, a regulation approved by the State Council in 1999 required all teachers to participate in 240 hours of professional development over a period of three years. Poor provinces and counties struggled to find resources to implement this and the device of unsupported and un-resourced 'self-learning' was used to meet the target number of hours.

Responsibilities are entailed, whether teachers' professional development is viewed as a right to be exercised by the teacher or as a requirement from government or employers. Debate revolves around the issue of whose responsibility this is and practices differ between countries. A common view is that responsibility for teachers' professional development should be shared, with employers and managers having an obligation to create conditions, as far as they can, which enable teachers to engage in professional learning, and teachers themselves having the responsibility to engage in it. Teachers, however, do not frequently articulate their rights as they see them. A (rare) example of teacher-formulated professional rights and responsibilities is provided by the Alberta Teachers' Association:

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Teachers have the right to base diagnosis, planning, methodology and evaluation on professional knowledge and skills, and have the responsibility to review constantly their own level of competence and effectiveness and to seek necessary improvements as part of a continuing process of professional development. (¶ 6.1)

Carnine (1992) adds a third party, “the educational establishment”, arguing that “just like that of any other professional, teachers’ efficacy is dependent on the tools at their disposal” (p. 13) and that “if teachers are to be held accountable, then the educational establishment must be held accountable for providing relevant knowledge and the viable professional tools derived from that knowledge” (p. 16).

The relevance of the above to distance education is that any distance education programme for teachers operates within a particular policy environment and is shaped by it. The nature and extent of policy-making for teacher education varies widely, as Hon-Chan and Mukherjee (2003, p. 49) observe from their experience of working in the World Bank,

In some countries, for example China, such policies are clearly articulated. In others, they are partial or minimal . . . Some countries are slow to change or revise their policies for teacher education. In others, the policies are changed so rapidly and so frequently that those implementing them can be hard pressed to cope. (p. 49)

But whatever the policy stance may be on teachers’ continuing professional development, the mechanisms and resources for enabling teachers’ career-long learning commonly fall short of what they need to be. In poor areas of developing countries, local government administrators routinely need to spend over 90 per cent of their education funds on teachers’ salaries, leaving little spare funds for a number of competing demands including teachers’ professional development. In addition to these financial constraints, traditional conceptualizations and forms of inservice education may be strongly entrenched, not just in institutional practice but also in the structure of budgetary allocations. This limits delivery options and can result in a norm of out-of-school, off-the job, infrequent or rare learning opportunities for a selected minority of teachers at high per capita cost. In such a scenario, rural and geographically remote teachers are frequently at a disadvantage and this contributes to the rural-urban educational quality gap observable in many countries, including China. In industrialized and developing countries alike, out-migration and population decline are intensifying inequity, yet as Johnson and Strange (2006) observe from their study of US rural education, “those who are ‘left behind’ in such places have the same right to an education as those who leave” (p. vii).

In situations like these, distance education and ICT can bring benefits to disadvantaged groups and make educational provision more equitable. But how can we focus attention consciously, rather than incidentally, on social justice in distance education projects for teacher development? If we take a rights-based or social justice perspective, what criteria could we use? The next section offers a possible framework for this.

The 4As Framework: Availability, access, acceptability, and adaptability

Projects for teachers' professional development are most often judged in terms of efficiency, effectiveness, and its influence on teaching and learning. Leaving aside the issue of whether or not teachers have rights to professional development, what would a rights-based framework for it look like? What criteria would teachers' professional development have to meet in order to be considered rights-based or socially just? One possible answer comes from Tomaševski (2003), using criteria of availability, access, acceptability, and adaptability (i.e., the 4As). She developed this framework in relation to governmental obligations on human rights in basic education, but I have adapted it here to apply to teachers' rights to continuing professional development (see Figure 1). It gives another lens through which to view projects and in the next section, I use it to review the EU-China GBEP's achievement of the 4As.

Figure 1. Framework for teachers' rights to continuing professional development

The 4As	Guidelines for rights-based continuing professional development
Availability	<ul style="list-style-type: none"> • Continuing education opportunities are provided beyond initial training. • Teachers have some freedom of choice in what and how they learn. • Information about the availability of learning opportunities and professional development is freely available. • Availability extends to all teachers, no matter where they are.
Access	<ul style="list-style-type: none"> • Barriers (organisational, geographical, motivational, financial) to teachers' use of available learning resources and opportunities are removed, as far as possible. • Policies and practices do not exclude or discriminate unfairly against teachers. • Infrastructure is in place to make access to and engagement with professional development a real possibility, and is sustainable. Policies and monitoring are in place to support teachers' ongoing professional learning.
Acceptability	<ul style="list-style-type: none"> • The provision is relevant, appropriate and current in content, based on teachers' and pupils' needs. • The provision is equitable and fair. • Standards of quality are explicit, monitored and maintained. • The provision is in accord with teachers' labour rights (according to International Labour Organisation guidelines) including rights to continued professional learning. • Teachers are adequately prepared in any use of technology required to access learning resources and opportunities.
Adaptability	<ul style="list-style-type: none"> • The provision responds and adapts to the needs and best interests of teachers, collectively and individually. • The provision and system takes account of local variation. • The learning resources promote core values of the teachers' role in fostering social justice (for example, the elimination of physical punishment by teachers or discrimination against disadvantaged pupils).

Availability and access

A key goal in achieving equity and social justice is the elimination of disadvantage. Through the TLRCs, rural teachers' professional development moved from being resource-poor to resource-rich in learning materials and opportunities. Before TLRCs were established there were no learning materials for teachers to use, other than school textbooks, in almost all schools. Many teachers had few or no opportunities to engage in professional learning activities beyond the boundaries of collaboration with in-school colleagues. An EU-China GBEP study (2005) of 1,820 key (senior or leading) teachers revealed that 28.0 per cent ($n = 510$) had received no previous in-service professional development, and training opportunities for the remaining 72.0 per cent ($n = 1,310$) were extremely limited, intermittent, and inadequate for their needs. As a result, there was little new information or ideas going into rural teaching, despite the government's requirement for all government-appointed teachers to engage in professional development. Among those not able to access professional development were 'daike' teachers (locally appointed and funded), who were excluded as a matter of policy. The experience of exclusion is described by a daike teacher from Xi Shang primary school in Wushan County, Gansu:

I started working in a primary school in 1988. I have been dedicated to my teaching but my work in school cannot be recognised by society. I want to enter my name in the high-level 'excellent lesson' competition but the condition of entry is that you should have an official academic title, such as gongban (government paid) teacher or backbone (gugan) teacher. But no matter how high a level my professional work is, due to my daike teacher identity, I can't qualify for the competition and can't be accepted by the education authorities as a proper teacher ... I want to be treated as a human being and I want to get equal pay with others. (Robinson & Yi, 2007, p. 13)

Even when teachers were eligible for inclusion in training, it was not easy to access it since choices and decisions about participation were not made by the teachers themselves, but by planners and administrators at higher levels. Furthermore, the provision often lacked coherence for either individual teachers or their schools.

The TLRC system removed many barriers to access and widened participation. Learning opportunities became local through the TLRCs, which covered 90 per cent of rural townships and 80 per cent of all primary and junior secondary teachers in the 41 project counties. Through a combination of distance learning, ICT and face-to-face activities, more teachers engaged in more professional learning more often than before and with more choice in what they learnt. Many TLRCs were kept open during the day and evening as well as at weekends at the teachers' request (opening hours were written into the TLRCs' annual plans). Each provided a programme of events for a minimum of 45 days a year (i.e., workshops and meetings, demonstration lessons, coaching sessions on ICT) as well as being open learning drop-in centres for teachers from the host and cluster schools. Teachers were able to access educational television channels and download programmes (e.g., from China Educational Television Channels 1 and 2, China Central Radio and Television University (CCRTVU), and 'Classroom of the Air' Kōng zhōng). They could also make use of websites, CD-Roms, teaching resources, and demonstration lessons (either as website video-clips or on CD-Roms or computer files), books and articles, official curriculum documents, teachers' reflective writings and research reports, teacher-made software, and teachers' e-folders of their work. Teachers were able to access national, provincial, and county-level teachers' websites (e.g., 38 of the 41 counties created their own) and to join in discussion groups.

As might be expected, access for the more remote teachers remained restricted by their location and more limited communications infrastructure. While most cluster schools were within easy travel distance of the TLRC, some were much further away and in a minority of cases, involved an overnight stay in the TLRC township. So although learning opportunities were hugely increased for the great majority, the provision was still not wholly equitable. Nonetheless, there was a high level of TLRC use and increased levels of interaction between teachers within a district cluster of schools. Teachers from the cluster schools joined in TLRC events and borrowed materials. Teachers from the TLRC school visited village schools to run workshops and to give and observe demonstration lessons. As the availability of connectivity grows, it will be possible to link all schools in a cluster into an e-network.

The TLRC model was judged to be sustainable in the eyes of head-teachers, teachers and local government officials. In one evaluation, 100 out of 103 (99.0%) education leaders and managers from 41 counties rated the chances of sustainability of the TLRCs as 'high' or 'very high' based on their experience of one or two years (Robinson 2006) and similar findings were echoed in other evaluations. Research on TLRC sustainability is continuing into 2008.

Acceptability and adaptability

Providing access and facilities for professional development is one thing, but teachers' use of them is another. How acceptable was the TLRC approach to teachers and head-teachers? How adaptable was it to local and individual needs within a large-scale system?

TLRC records provided evidence of a high level of use by teachers. An analysis of 1,085 questionnaires from teachers showed that, after a year's experience of using the TLRCs, 74 per cent ($n = 805$) said that it provided a good study and communicative environment and 81 per cent ($n = 875$) that it had helped them to establish new teaching ideas and approaches (EU-China GBEP 2005). The majority (87%: $n = 910$) judged the support teachers to be very competent in organising the training and using new teaching approaches. Other studies also showed that the TLRC approach was highly valued by teachers because it met their needs and was convenient, as illustrated in the following typical comment:

Before, if I wanted some information for my teaching, I had to travel to the county town and try to find some there but it is a four hour journey from our village by walking and by bus and I also have farming duties . . . now I just go to the TLRC in a few minutes' and I can find what I want . . . the support teachers are able to help me and to discuss with me and now I know more things. (Teacher Mingma, Zhu Cha school, Tianzhu Tibetan Autonomous County, 17 August 2006, interview by author).

The rural teachers and head-teachers were keen to learn and valued this new facility. They described the TLRCs as '*windows on the world*', '*petrol stations for fuelling the mind*', '*resource reservoirs of information*', '*a space rocket to modern knowledge*' and '*clubs for communication*'. Some of the learning resources (television programmes and websites) were the same as those used by urban teachers, others were specially designed for local and rural relevance. The video material in the modules was filmed in rural Gansu schools (all other video available at this time showed urban schools in big cities or classes filmed in television studios elsewhere in China). Teachers identified strongly with the video material because it showed the new curriculum being implemented with, as teachers said, '*teachers like me . . . classrooms like mine*'. The content of

print and video reinforced the new curriculum's student-centred 'humanistic' approach, showing 'more democratic' relationships between teachers and children, encouraging the elimination of physical punishment and including children with learning difficulties.

The opportunity to learn to use ICT was seen by rural teachers as a big step up in achieving equity with teachers in more advanced areas of China. Many saw it as an indication that they were joining the 'modern world'. '*Now we can do all the things that a city teacher can*' was one such frequent comment. The perceived effects of ICT were lyrically described by the head-teacher of Mapo School, Yizhong County:

Teachers' quality has been raised, their ideas have changed so much, their teaching skills have been improved, they have a good command of new teaching means and their vision has been widened. For a mountainous school like us, training in ICT is as if a long drought suddenly met a drop of sweet dew. (EU-China GBEP, 2005, p. 24)

There were many reports from different counties that the training, resources and use of ICT had changed teachers' attitudes and teaching methods, for example:

Through using ICT, teachers have the latest knowledge of the new curriculum reform and can get guidance and support in putting it into practice . . . teachers can now provide more chances for communication, cooperation and conscious inquiry in their lessons. (Head-teacher Cheng Guang, Tumeng Junior Secondary School, EU-China GBEP 2006, p. 23)

Old teaching methods are of passive learning orientation. Now after we employ participatory approaches in our teaching plan, from an open question start, our lessons are of such diversity and controversy as to reach the purpose of encouraging students' self-inquiry and self-discovery. (Teacher Gu Xiopo from Wenxian county, EU-China GBEP 2005, p. 21)

The combination of technologies was appropriate for the rural conditions, using a mixture of older and newer technologies at different levels (county, township and village) but with the same quality of content. All teachers and head-teachers were trained to use the technologies in workshops and in peer coaching sessions, so they developed new skills in using technology as well as learning new teaching approaches. Because, however, the TLRC system took advantage of the tradition of teachers working collaboratively in schools, a teacher was not reliant on the ICT resources alone:

Each school has developed its own training culture in creating a humanistic learning environment in the TLRC, encouraging teachers to study together, share resources, exchange experiences and develop together. (EU-China GBEP 2006, p.9)

The TLRC approach was used on a large scale, but was also adaptable to local circumstances. It was embedded in existing structures and relationships within the education and local government system (to help its sustainability), but as TLRCs and local communities became more confident, they developed their own variations. Enterprising head-teachers and schools extended their TLRC facilities and uses, occasionally developing multi-media classrooms and adding equipment such as portable laptops and projectors for use in classrooms. In 2006, some TLRCs began developing

school networks and one county led the way in developing a county-wide e-platform for schools using *Moodle*ⁱⁱⁱ. In Tibetan areas, teachers developed Tibetan language materials, using dynamic visuals to teach Tibetan script to primary classes and to create resources on local history and culture. Increasingly, classes for pupils were held in the TLRCs. The TLRC model was also able to combine with, and integrate other, parallel initiatives in developing ICT for rural teachers; their emphasis on the human resource side of ICT development complemented the other projects' emphasis on the technology and other projects saw the TLRC as an effective model. The project's TLRC concept and title was promoted by the Ministry of Education in Beijing for use by other provinces.

Quality and empowerment

The quality of rural teachers' continuing professional development is an issue in many countries. Rural teachers tend to be recipients of lower quality in-service training provision than their urban peers. Where cascade systems of training are the norm, the lower levels of training and resources are often poorer quality than those at the top. China has a hierarchy of training provision (national, provincial, prefectural, and county) with the provincial or national level seen as the most desirable by teachers, though only a distant possibility for most. The TLRC offered an alternative model, where good quality training opportunities were distributed more equitably across the system, either through the materials, the technology, or face-to-face sessions with trainers from all levels. There was more interaction between trainers and rural teachers, up and down the different levels of the system (i.e., provincial, county, school) as well as with teacher training institutions and peer-trainers. Teams of mobile trainers, including urban teachers, ran local workshops in the TLRCs and reported that, as a result of this new outreach, they were learning at first hand about rural schools and teachers.

The previous supply-driven provision for teachers' professional development shifted towards a demand-initiated one, partly because the variety of learning resources enabled choice and partly because of the way the TLRC system was organised. Whereas formerly, priorities and programmes had been determined by higher authorities far removed from school and village realities, the TLRC system enabled teachers and schools themselves to construct a programme of professional development based on their assessment of their own needs combined with county priorities. It was also possible for individual teachers or small groups to work together on their particular interests with the support of ICT resources. This shift raised teachers' awareness about their own role in professional development, instead of remaining passive recipients of provision:

Rural teachers are more aware of the need to seek self-improvement in their teaching as a result of the various project activities. They are more motivated to find the methods to effect changes and adapt new ideas in their teaching. (EU-China GBEP, 2007, p.36)

Teachers' growth in confidence was evident in their written feedback, for example:

- I now really understood the difference between teaching as a job and as a profession.
- I was able to develop a plan for my professional development and to implement it step by step.
- I've become a much better learner and you can properly call me an independent learner. (Robinson, 2006)

One team of external evaluators concluded, that as a result of TLRC activity:

Teachers in the project counties suddenly opened their eyes . . . they have come to be aware that knowledge is more construction in communication with outside than just cramming. (EU-China GBEP 2005, p. 4)

Many teachers created their own materials, in hard copy or in computer formats. These included lesson plans, simple animated courseware, *PowerPoint* lesson presentations for use in class, reflective writings, collections of downloaded resources, and small research papers. Instead of teachers' records at schools being used purely for administration purposes, they began to be portfolios of their work and learning. TLRCs shared the resources they created on county and provincial websites, and with other teachers in the district and county. Teachers entered their work in county, provincial, and national competitions and won prizes for the first time. Within a year of operation, many TLRCs had over 100 teacher-made items in their resource collections, for example, at Tangwan TLRC in 2005, 140 teachers wrote reflective papers on their experience of learning and teaching and published three newsletters. Several of the Tangwan teachers won awards for ICT teaching courseware, with a special focus on low-achieving students, in competitions organised by the county education bureau. One essential activity in any rights-based education is getting people's voices heard; in the case of the EU-China GBEP, rural teachers' voices were newly audible and visible in a number of ways, locally and more widely via Internet.

Conclusions

The use of distance education and ICT has the potential to distribute opportunities for learning more widely and equitably across the teaching force. It can also improve the quality and variety of the resources and support available to teachers, opening up new avenues to professional development. If social justice is to be achieved however, in terms of equity of educational opportunity and services, the provision needs to be planned in ways that make it available, accessible, acceptable, and adaptable to all teachers and head-teachers, empowering them to make choices in what and how they learn. It also needs enabling policies in support of these aims.

The EU-China GBEP provides a model which, in this context, was successful in making opportunities available for rural teachers' professional development on a large scale. Taking a school-based approach supported by ICT, it provided more inclusive access than the previous arrangements while at the same time extending learning opportunities beyond the boundaries of the school. It shifted the emphasis from a supply-driven provision to a demand-initiated one, giving teachers and head-teachers more ownership and choice in their professional development. The shift (which, metaphorically, can be seen as the equivalent of getting an elephant to dance within a very short time-scale) was only possible through taking a system-wide approach to rural teachers' professional development rather than just setting up ICT centres disconnected from the mainstream management of teachers' continuing education and having little impact on it. The TLRC approach was popular and acceptable to teachers and head-teachers because it met their needs and offered something new. It was also adaptable, accommodating different kinds of learning and training activities, acting as an open learning centre, varying its provision and scope according to local context while retaining a common core mission and set of activities.

Though distance education and ICT have the capacity for large-scale delivery over huge distances, the main benefit came from what happened beyond delivery, namely, the mobilisation of teachers, the generation of activities at the TLRC and local level, and the changes in

knowledge, skills, attitudes, and mindset of teachers and head-teachers. While the technology opened the way to new possibilities, the factors that contributed to its successful use were strong commitment from leaders at various levels, enabling policies, an emphasis on human resource development rather than equipment, the organisational structure at the TLRCs, good quality learning resources, rural teachers' keen motivation to learn and rewards for their participation, effective monitoring practices, and sufficient funds to carry out the activities needed. Beyond the project's life, the TLRC approach still faces some challenges. These include maintaining strong support and commitment from the leadership at provincial and local levels of government despite personnel changes, ensuring ongoing good management and leadership from head-teachers as they face competing demands on their attention and budgets, finding future funding for the replacement of ageing equipment, and providing a continuing, changing, and affordable flow of good quality, topical, and relevant learning resources to maintain teachers' motivation as they become familiar with existing content. There is also still the challenge of reaching those teachers who are the most difficult to reach.

The EU-China GBEP did not consciously or explicitly take a 'rights-based' approach to rural teacher development at the outset, though some of its values and goals coincided with the four criteria in the framework (i.e., availability, accessibility, acceptability, and adaptability). The use of the 4As framework, or a similar one, at the project's start could have made the goals for social justice clearer, more comprehensive, and more strongly focused on issues of equity (including gender) in a systematic way and with specific targets to be reached. The 4As framework given in this paper has the potential to be used as a planning and monitoring tool, and can be developed further by adding specific targets and indicators appropriate to a context. Its use could help make a rights-based perspective more explicit alongside the customary efficiency and effectiveness goals detailed in a project's logical framework plans. With only small adjustments or additions to the usual kind of project plans, a rights-based perspective could be developed and could lead to measurable gains in achieving availability, accessibility, acceptability, and adaptability in the provision of teachers' professional development. It might also lead to greater sensitivity to individual teachers' rights or wishes to participate.

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¹ Local government administration consists of the following levels: province, prefecture (groups of counties), county, township and village. A township is a rural population centre and an administrative unit.

² 'Education is both a human right in itself and an indispensable means of realising other human rights. As an empowerment right, education is the primary vehicle by which economically and socially marginalised adults and children can lift themselves out of poverty and obtain the means to participate fully in their communities.: The right to education' (Article. 13, The right to education. The International Covenant on Economic, Social and Cultural Rights (ICESCR). Twenty-First Session, 1999, of the Committee on Economic, Social and Cultural Rights: UN Doc E/2000/22 ICESR UN 2000).

³ Moodle is a free, Open Source software package , a course management system to help educators create effective online learning communities (available at <http://moodle.org/>)

