

# BUILDING CHILDREN'S SCHOOLS

## Transforming the Learning Environment

Volume I

The Gansu Basic Education Project Experience and Beyond

Dr David Smawfield & Professor Yongfeng Du



Gansu Provincial Education Department

Cambridge Education

## Publication and Contact Details:

**Title:** Building Children's Schools: Transforming the Learning Environment:  
The Gansu Basic Education Project and Beyond

**Authors:** Dr David Smawfield & Professor Yongfeng Du

**Date of Publication:** March 2006

**Published by:** Gansu Basic Education Project/Department for International  
Development (DFID)/Cambridge Education.  
Lanzhou, Beijing, London and Cambridge.

For further information please contact: © 2006 Cambridge Education (CE) and  
Gansu Provincial Education Department (GPED)

[www.gbep.org](http://www.gbep.org)

[www.dfid.gov.uk](http://www.dfid.gov.uk)

[www.camb-ed.com](http://www.camb-ed.com)

## Acknowledgements:

We wish to express appreciation to the following for their assistance and cooperation, during the fieldwork in Gansu, July-August 2005, on which this publication is based:

Staff of the Gansu Provincial Education Department; Staff of the Linxia Hui Autonomous Prefecture Education Department; Project Consultants; Staff of the County Level Education Bureau in Dongxiang, Hezheng, Jishihsan and Kangle; and staff of GBEP management offices at Provincial, Prefecture and County Level; All head teachers, staff, students, and parents interviewed during school visits.

We also wish to thank the following for permission to use copyright material:

The Hesperian Foundation, for permission to use illustrations shown on Page 27, taken from: WERNER, David (1996 edition) *Disabled Village Children: a guide for community health workers, rehabilitation workers, and families* (Palo Alto, Hesperian Foundation) ISBN: 0-942364-06-6.

Learning through Landscapes ([www.ltl.org.uk](http://www.ltl.org.uk)) for the use of its photographs shown in Annex 4.

The South Eastern Health Board of the Republic of Ireland, for permission to include the "Maze Game", described in Annex 4 and taken from *Playground Markings and Other Traditional Games*, South Eastern Health Board, p. 8.

The British Broadcasting Corporation (BBC) for permission to use notes and illustrations on the construction of a weather station, in Annex 4, abstracted from the BBC website: <http://www.bbc.co.uk/tyne/weather/barometer.shtml>

The Gansu Basic Education Project, for permission to use: selected text and photographs from the project website; and technical guidelines on School Location Planning, reproduced as Annex 1, and abstracted from the Gansu Basic Education Project CD-ROM: *Innovations in Design and Construction of School Buildings and Playgrounds*, prepared by GBEP consultants.

The Organization of American States, General Secretariat, Unit for Sustainable Development and Environment, for permission to use, in Annex 5, extracts from: BASTIDAS, Pedro (1998) *Maintenance Manual for School Buildings in the Caribbean*, Organization of American States, General Secretariat, Unit for Sustainable Development and Environment, OAS-Echo Project to Reduce the Vulnerability of School Buildings to Natural Hazards, USAID-OAS Caribbean Disaster Mitigation Project.

The Ministry of Education, Republic of Rwanda, for permission to use, in Annex 5, extracts from: MINISTRY OF EDUCATION, REPUBLIC OF RWANDA (2000) *Manual - Maintenance Programming - All Schools* (Kigali, Division for Construction and Equipment of Schools).

---

## CONTENTS

	Page Number
<i>Foreword by Bai Jizhong</i>	<i>iv</i>
<i>Executive Summary</i>	<i>v</i>
1 INTRODUCTION.....	5
1.1 Why this Booklet and what it Contains .....	5
1.2 The Gansu Basic Education Project.....	6
1.2.1 The Situation Before and After GBEP.....	7
1.3 School Development Planning and Participatory Teaching Approaches .....	7
1.3.1 School Development Planning.....	7
1.3.2 Participatory Teaching Approaches.....	10
1.4 The Importance of Project Linkages.....	11
2 PROVISION, DESIGN AND ARRANGEMENT OF FURNITURE.....	12
2.1 DESKS.....	12
2.1.1 Experiments with Innovative Shapes of Desks.....	13
2.1.2 The Semi-Hexagonal Desk in Use.....	16
2.1.3 The Cost of Semi-Hexagonal Desks.....	17
2.2 CUPBOARDS AND SHELVES .....	17
3 PROVISION AND USE OF LEARNING MATERIALS .....	19
4 CLASSROOM AND SCHOOL DISPLAY.....	21
5 HAPPY CAMPUS.....	25

## FOREWORD

This study of the changes in rural schools in Gansu resulting from the interventions of the Gansu Basic Education Project (GBEP) should challenge all readers. The title itself, "Building Children's Schools" - not building schools *for* children challenges us to review what we think we know about school buildings. What is a child's school ? What does a school look like that a child would design rather than an adult ? What should a school be like when the child is placed at the centre of the picture ?

As the analysis and pictures in this review clearly show, GBEP has trailed a new path in China by asking these questions - and the results are very impressive. The design of the classrooms built under GBEP has been based on traditional local designs, but has taken those designs and moved several steps beyond by repeatedly asking the question : How will this benefit the child ? It is that process of putting the child at the centre of planning that distinguishes the GBEP experience from more traditional approaches.

As the authors point out, this review is about much more than buildings and playgrounds, boundary walls and flagpoles. Crucially, the changes brought about in the physical environment have been supported and extended by changes brought about in the learning environment. Greatly improved classroom displays, new modes of participatory teaching and learning, school planning that looks at how best to create a supportive environment in which the child can learn - all these have been mutually complementary with the buildings and equipment provided by the project.

The Chinese government has embarked on a new national curriculum reform process that is only now reaching the poorest and most remote schools in rural areas. This review clearly shows how the changes in the physical environment can help teachers and children adapt to the new and higher demands created by the new national curriculum. It shows how these changes can be done in simple ways that do not cost a lot. It thus has a lot to offer to other similar areas in China and internationally.

GBEP has been a successful and innovative project for the Gansu government. We welcome this contribution to learning the lessons of GBEP and hope readers are stimulated and inspired by the ideas to be found here.

Bai Ji Zhong  
Director General  
Gansu Provincial Education Department

## EXECUTIVE SUMMARY

In China, especially in remote rural areas, parents and children deserve and demand better schools. The Gansu Basic Education Project (GBEP) has provided these. It has also shown that raising educational quality can be achieved in a way that is affordable and environmentally friendly.

GBEP has designed and built long-lasting classrooms and schools (including the provision of such features as toilets, boundary walls, water supply, and dormitories) with many design improvements. It has made schools much more child friendly. Enrolment and retention has increased greatly as a result.

GBEP has been a total project package that is well integrated. School Development Planning and teacher training in Participatory Methods, for instance, have supported infrastructural improvements. The infrastructure improvements themselves have been carefully selected to promote modern teaching methods. All in all, it is difficult to conceive of a project that could have been better linked: in conception and in practice. The impact that "joined up thinking" has had on project success, in itself, deserves to be recognised as a key lesson for anyone who wishes to be inspired by, and build upon, the GBEP project experience.

Two GBEP interventions of major significance include the piloting of semi-hexagonal furniture and a "Happy Campus" initiative. The use of semi-hexagonal desks has proved extremely popular, and has transformed the learning environment. In fact, the provision of semi-hexagonal tables, on its own, appears to have been capable of transforming the way teachers teach and move around the classroom, and also the way in which students interact with each other.

The Happy Campus initiative has involved the beautification of school grounds and the introduction of sports and play facilities and activities, including through community involvement. It, too, has led to many educational benefits.

Other noteworthy GBEP interventions include approaches adopted towards: the promotion of classroom display; school location planning; school maintenance; health, hygiene and environment; the use of solar energy; the provision of lighting; and the provision of access features for the disabled. The GBEP project experience has also yielded insights on cost-effectiveness issues related to these interventions.

Many visitors to GBEP have been impressed by the range and quality of the changes examined in this review, but have assumed that the cost of these changes must be high. Our analysis shows that, on the contrary, the costs are only slightly higher (10-15%) for buildings and that some of the most effective interventions (e.g. the "Happy Campus" initiative) have in fact been among the cheapest to implement.

GBEP's achievements have wider relevance for policy and practice elsewhere in China and also for educational systems in other parts of the world. Additionally, there are relevant examples of best international practice that can now be drawn upon to build upon what GBEP has achieved and to take educational development and the promotion of modern teaching methods in China to an even higher level.

This publication explains and explores all of the above in a way that is relevant for policy makers and practitioners throughout China and in other countries.

## 1 INTRODUCTION

This introductory chapter sets out to achieve three things: to explain the purpose and contents of this booklet; to provide a brief explanation of the Gansu Basic Education Project (GBEP); and to draw attention to the important role played by project linkages.

### 1.1 Why this Booklet and what it Contains

The main audience for this publication is Chinese. The primary purpose of the booklet is to try to influence thinking about the design and equipping of rural schools in China. However, many of the achievements and innovations of the GBEP, in respect of enhancing the learning environment, have international relevance. The publication also has a role to play, therefore, in the wider international dissemination of project experience.

Typically, in China, approaches to the design and equipping of schools are input driven and concerned with the need of meeting prescribed standards. The uniqueness of the approach of the GBEP has been to put children at the centre of the picture: through the creation of child-friendly schools and learning environments.

Main themes of the book include the impact of the following in enhancing the learning environment:

- The provision, design, and use of furniture.
- Participatory teaching methods.
- The provision and use of learning materials.
- The roles played by classroom and school displays.
- The creation of a "Happy Campus" through, for instance: the provision of sports and play equipment; the "greening" of school grounds, by planting school gardens, trees and shrubs; the promotion of playground games; the creation of attractive murals and the involvement of the wider community in making simple but important improvements to school grounds, from the creation of pathways and sports areas to seating and other social areas for children to use and enjoy.
- School Location Planning.
- Preventative School Maintenance.

Each of these themes is examined in turn, chapter by chapter.

A penultimate chapter examines, in lesser detail, a host of other project interventions that have impacted upon the quality of the learning environment, but which also offer insights of wider relevance for policy makers and practitioners.

A final chapter shares some information on costs and cost-effectiveness issues.

Use of the expression "and beyond" in the publication's title reflects the role of the publication in project dissemination. But it is also mindful of a desire to set future challenges to build even further on what GBEP has achieved and can inspire. Accordingly, a series of **Annexes** to the

main text highlight additional examples of best international practice, relevant to the booklet's main themes.

## 1.2 The Gansu Basic Education Project

The Gansu Basic Education Project started in 1999 and is due to be completed in June 2006. The purpose of the project is to increase enrolment in poor minority areas - thereby helping achieve universal basic education - and to reduce the inequalities which exist in the education system. The project's lessons are being disseminated provincially, nationally and internationally; hence this publication.

GBEP is mainly operated in four of Gansu's poorest counties in Linxia Hui Autonomous Prefecture (a majority Muslim area): Kangle, Hezheng, Jishishan and Dongxiang. The project is funded by the British Government Department for International Development (DFID) and managed by the Gansu Provincial Education Department with support from a team of international and national consultants provided by Cambridge Education, UK.

The Gansu Basic Education Project was designed as a pilot project. It has set out to test new approaches to the educational problems described above, and to disseminate successful practice in other poor areas of China. There are 14 inter-related components in GBEP covering almost all aspects of the basic education system. These are as follows:

- School Development Planning
- Participatory Approaches to Teaching
- Early Years' Education
- Special Education Needs
- Head Teacher Training
- Financial Reform in budgeting
- A new Inspection system
- Development of Supplementary Readers
- Development on Access strategies to help enrol more children
- School Location Planning for more efficient and objective siting of new and rehabilitated schools
- A Civil works (CW) programme to improve the child friendliness, quality and durability of school buildings
- Support to improve Education planning capability at the county level
- A Research programme focusing on action research which allows practitioners to become involved in research
- A monitoring and evaluation component to measure project impact

All components are designed to be mutually interdependent and reinforcing. Furthermore, the two pivotal aspects of GBEP, around which all other components have rotated are: School Development Planning and Participatory Approaches to Teaching. These two pivotal components are explained in Section 1.3 below.

### **1.2.1 *The Situation Before and After GBEP***

The evidence that GBEP has transformed schools fundamentally, and beyond all recognition, is overwhelming. The two sets of photos on the following pages are indicative of the kind and magnitude of change that has occurred. The first set of photos was taken before project implementation began. The second set of photographs shows some of the results of implementation.

The differences exposed are so stark that there can be no question that GBEP has fundamentally altered the state of the learning environment in project schools:

- The quality of the learning environment has been fundamentally transformed;
- Schools are much more child-friendly;
- Enrolment has increased very significantly in consequence.

### **1.3 *School Development Planning and Participatory Teaching Approaches***

Two of the project components identified in Section 1.1 are so important to the understanding of what GBEP has achieved in "building children's schools" and "transforming the learning environment" that it will be helpful to the reader to explain briefly what they are and what they have involved.

#### **1.3.1 *School Development Planning***

School Development Planning aims to bring schools and local communities together to create a unified approach to the school's development.

School Development Planning aims to change the relationship between the school and the county (the funding tier of local government) from a traditionally "top down" one to a more "bottom-up" one. It does this by giving schools more involvement in their own development. It also aims to change the relationship between schools and communities by bringing them closer together and focusing on some of the social development aspects of education that prevent children entering, staying and achieving in schools.

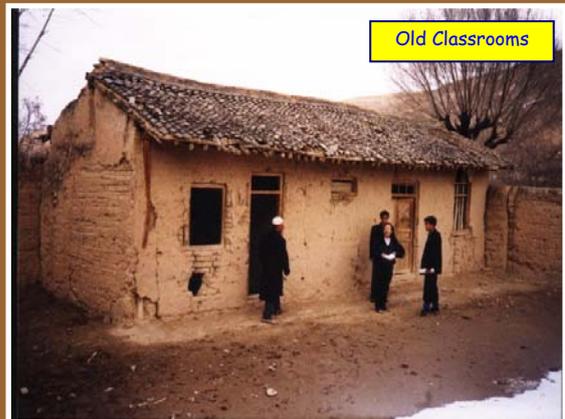
As part of the School Development Planning initiative, Head teachers and School District Directors have been trained in new skills to help bring schools and communities together and identify common issues. These skills include:

- The use of participatory approaches - involving all members of school and community and especially those traditionally marginalised in planning;

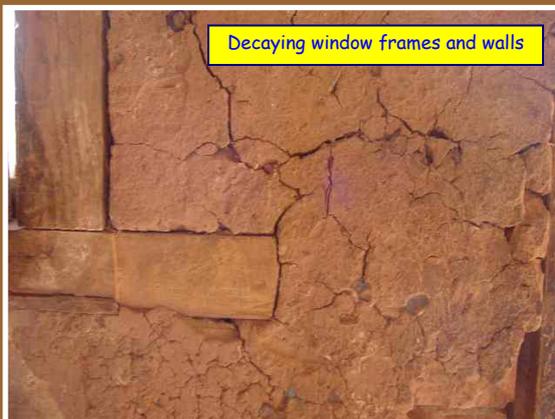
**Example Photographs: Set A**  
**The Situation Before GBEP**



Overcrowded classroom, furniture in poor state



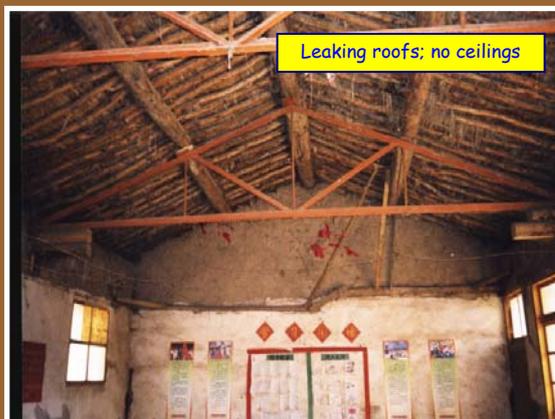
Old Classrooms



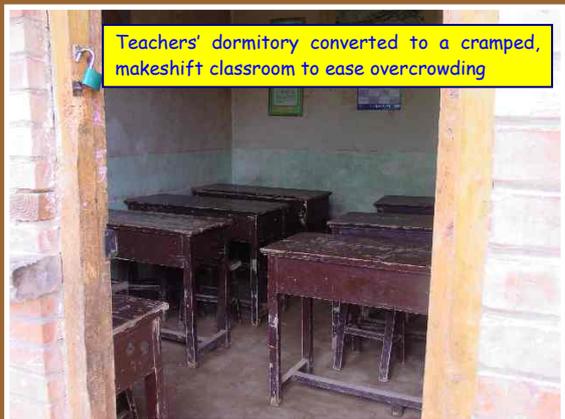
Decaying window frames and walls



Old reading materials



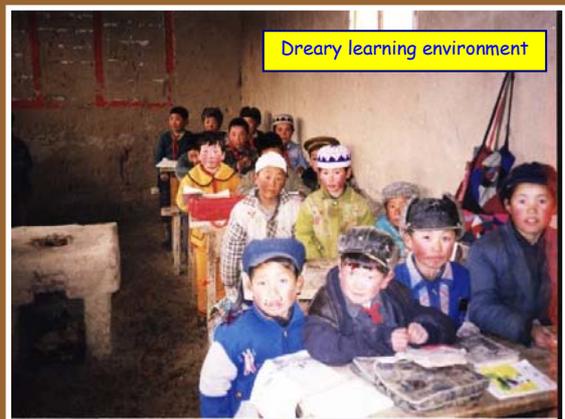
Leaking roofs; no ceilings



Teachers' dormitory converted to a cramped, makeshift classroom to ease overcrowding



Old Toilets



Dreary learning environment

Example Photographs: Set B  
The Situation After GBEP



- The use of tools, such as:

Social Maps - social maps are a simple way of visualising issues of access;

Problem Trees - problem trees help to link problems, causes and effects in a clear and logical way;

Ranking - ranking can be used to make sure all voices and opinions have a fair hearing;

Vision Statements - schools / communities are asked to look three years ahead and outline their vision for the school, considering whole school development.

Schools have also been asked to consider what they can do for themselves as well as what help is needed from external sources and to actively plan for the next year.

Three key practical resources have been developed by the project to support the School Development Planning process:

- A trainers' manual;
- An School Development Planning guidelines booklet;
- A format for schools to complete their School Development Plan.

### 1.3.2 *Participatory Teaching Approaches*

Participatory approach methodologies place the child at the centre. They focus on the needs of the child.

Less emphasis is placed on memorising content. More emphasis is placed on promoting other life skills - such as thinking and analytical skills. Children are encouraged to develop enquiring minds, and the confidence to express themselves.

Participatory approaches lead to many changes in classroom and teacher behaviour. Group work, as opposed to whole class teaching, will feature much more prominently. Children will more often be found learning cooperatively and supporting each other. There will be far more student discussion.

Active learning will be in evidence, involving practical activities, investigations and experiments. The way the teacher moves around the classroom will change. The teacher will spend less time blackboard teaching. The teacher will often become a learning facilitator: setting pupils off on learning tasks and then supporting them and guiding them.

The relationship between teacher and student also changes. The teacher becomes less of a distant authority figure, and more of a learning friend.

There will be changes, too, in the physical layout of the classroom and what is displayed on walls. These are two very important changes about which this publication will have much more to say!

GBEP, therefore, has aimed to improve the way primary and junior middle school teachers are trained and to focus especially on strengthening teachers' ways of teaching rather than content knowledge. It has done this by introducing participatory approaches in training, by exposing

---

trainers to new ideas, new materials and new ways of teaching and - most importantly - by focusing on the needs of the child.

Emphasis has also been placed on using locally available and low cost materials in all teaching, and on ensuring that disadvantaged groups of pupils (such as girls or children with special education needs) are considered by teachers when they teach.

#### 1.4 The Importance of Project Linkages

For ease of reference, and the sake of clarity, each of the GBEP initiatives discussed in this booklet, is presented separately. However, it is important to keep in mind that, in project reality, there were many conceptual linkages - as referred to in Section 1.2 above. For instance, within the project hardware component itself, individual sub-components supported each other. The greening of school grounds would not have been possible without the water supply programme. The provision of sports equipment has contributed strongly to a Happy Campus atmosphere. Hand-washing promotion is linked to the provision of toilets. Solar energy and cost-saving solutions have raised environmental consciousness. And so on.

At an even more basic level, the hardware component has been a total package. Classrooms require furniture. Schools require teachers and teachers need to be accommodated. The classrooms need to be heated in winter. Schools cannot function satisfactorily without toilets. All of these were issues have been addressed by the hardware component of the GBEP. This comprehensive approach offers a total solution for achieving fully functional schools.

What is also especially significant is the way that other project components have been linked to, and supported, hardware interventions. By far the two most important in this regard are teacher training and school development planning (the "pivotal" components referred to in Section 1.2 above). Teacher training has supported, for instance, the introduction of new classroom furniture and classroom layouts, and the enhancement of classroom display following the provision of display facilities.

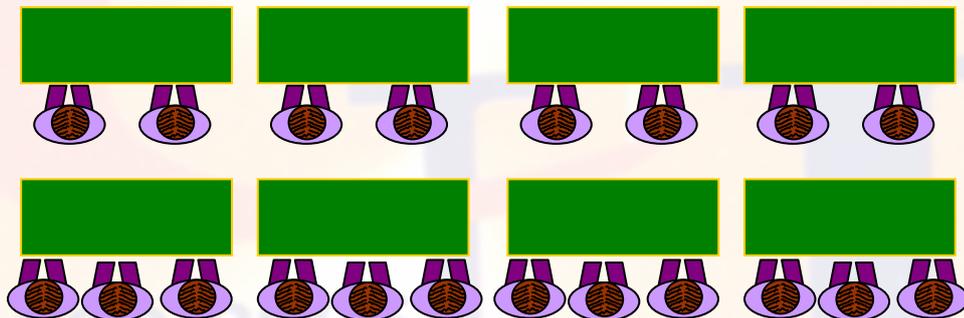
The school development planning process has led to schools developing their own annual plans, on a rolling basis. School development planning, as practised by the GBEP, is a process that involves community consultation and participation. Enhanced community involvement has been very important for the success of the Happy Campus initiative. The school development plan also incorporates planning for preventative maintenance.

All in all, it is difficult to conceive of a project that could have been better linked: in conception and in practice. The impact that "joined up thinking" has had on project success, in itself, deserves to be recognised as a key lesson for anyone who wishes to be inspired by, and build upon, the GBEP project experience.

This Chapter introduces the innovations made by GPEP in the use of standard classroom furniture and the piloting of innovative-shaped desks. It also discusses lessons learned with regard to the provision of cupboards and shelves.

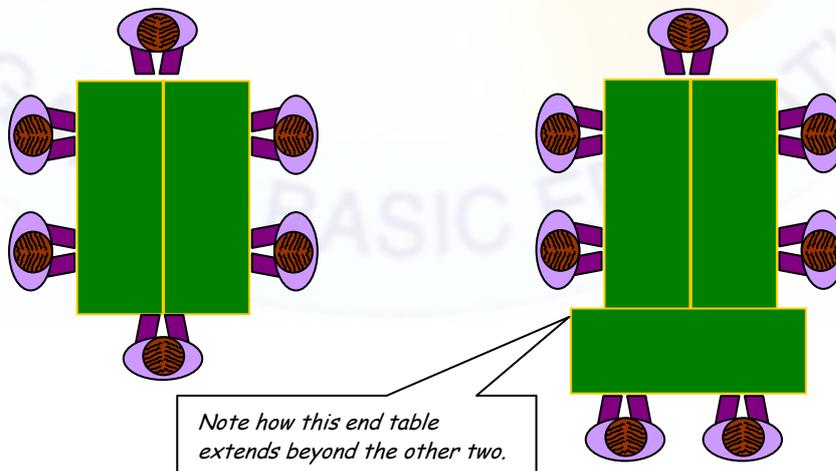
## 2.1 DESKS

There is a very strong tendency for traditional furniture (rectangular desks seating two or three students) to be arranged in rows and columns: the way it has almost always been arranged in the past. The adjacent photograph and figure below show typical examples of traditional classroom layouts: with desks in rows and columns.



The GBEP, in support of new participative teaching methodologies (discussed in Chapter Four), has promoted the adoption of non-traditional classroom layouts.

Such layouts can be achieved using traditional furniture arranged in twos or threes:



Traditional desks are not ideally suited to being arranged in threes in the way depicted in the right-hand arrangement above. Note how the lower table projects beyond the other two. A slight adjustment to the proportions of traditional desks could overcome this problem, unless the existing width to length ratio is proven to be ideal in all other respects.

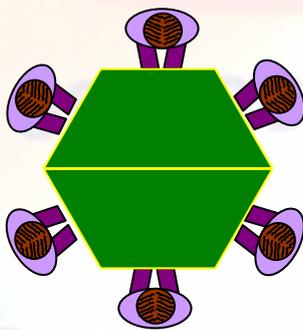
The two most important pedagogical points to make about non-traditional layouts is firstly that they can still work satisfactorily for traditional teaching. Secondly, and of paramount importance, they can create a learning environment that supports the kinds of participative teaching methodologies discussed in Chapter Four.



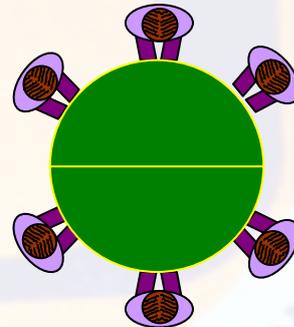
An example of a non-traditional classroom layout using standard furniture.

### 2.1.1 Experiments with Innovative Shapes of Desks

The GBEP experimented with the design of innovatively shaped desks, in support of the participative teaching methods discussed in Chapter Four. Two shapes of desk were considered: semi-circular and semi-hexagonal. Both of these types of desk lend themselves to be placed in pairs to create a group-working environment.

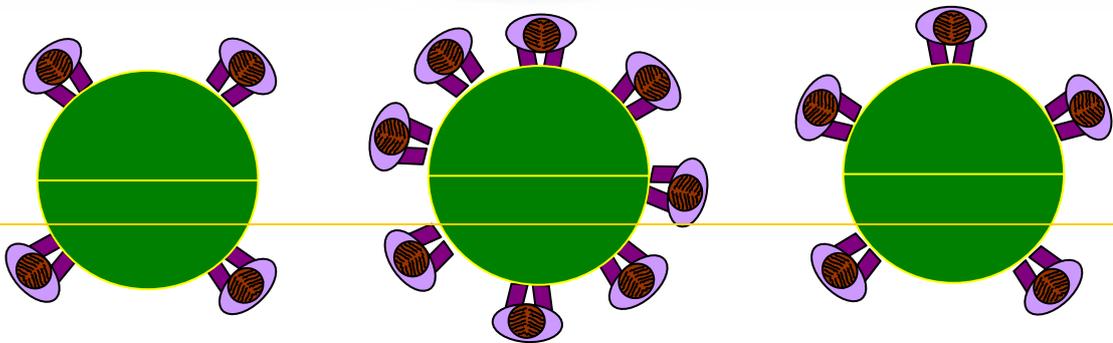


Two semi-hexagonal desks placed together comfortably seat six students.



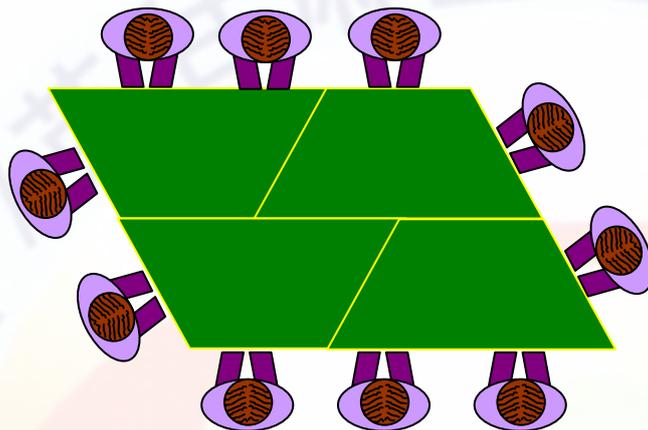
Two semi-circular desks placed together also comfortably seat six students.

The semi-circular desk has one important advantage over the semi-hexagonal desk, in that it can



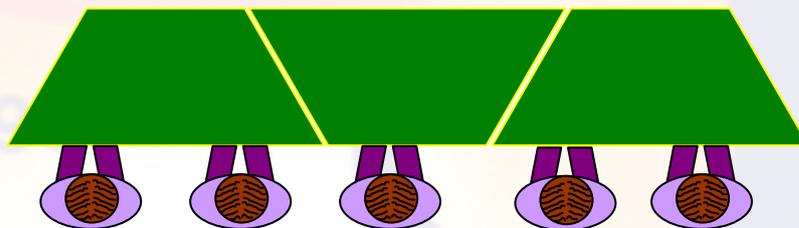
more-flexibly seat different numbers of students:

The semi-hexagonal desk, however, has three important advantages compared to the semi-circular desk. A first advantage is that a semi-hexagon is a shape that "tessellates": it fits together in different ways without spaces:

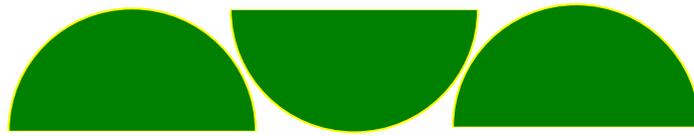


An example arrangement of four semi-hexagonal desks, to make a large group table comfortably seating ten students.

The second advantage of semi-hexagonal furniture is that it can also be arranged satisfactorily to make traditional rows, if this is required:

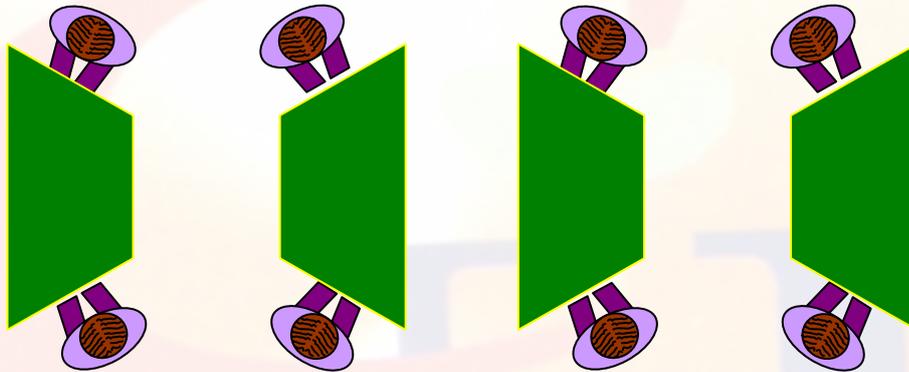


Note how the same arrangement cannot be achieved so well using semi-circular desks:



A very important characteristic of semi-hexagonal furniture is that it can, if required, be arranged to create formal examination conditions: where no student can cheat by copying the work of a neighbour. Many teachers in GBEP did not realise this would be possible, and mistakenly presumed that this was a disadvantage of semi-hexagonal furniture compared to standard furniture.

Semi-hexagonal furniture arranged to create formal examination conditions:



After assessing the advantages and disadvantages of both shapes of desk, the GBEP opted to pilot semi-hexagonal desks in Grades One to Three.

### 2.1.2 *The Semi-Hexagonal Desk in Use*

The enthusiasm with which GBEP teachers reacted to the introduction of semi-hexagonal desks has been nothing short of remarkable. All teachers interviewed during follow-up review, greatly preferred semi-hexagonal desks over traditional desks, once they had got used to them.

Within the GBEP experience, no teacher ever chose to arrange the semi-hexagonal desks in a formal or semi-formal way. All have used the semi-hexagonal tables, paired together, to make hexagonal teaching layouts accommodating six students, as shown in the photograph on the right.



The semi-hexagonal furniture piloted by the project, arranged into hexagonal formations. Note the position of the teacher. This kind of furniture seems to promote teacher movement and participative learning and teaching.

What is even more remarkable is that the provision of semi-hexagonal tables, on its own, appears to have been capable of transforming the way teachers teach and move around the classroom, and also the way in which students interact with each other. Indeed, one of the most striking features of the use of semi-hexagonal desks relates to teacher movement. Teachers are far more likely to be seen moving around all areas of the classroom, helping children on an individual or small group basis - as compared to situations where traditional layouts are found. This is a very positive development.

Of course, where teachers have been exposed to participative methods of teaching, through training, their expertise and confidence in adapting to the use of the new furniture has been all the greater. But, even teachers who have not received such training appear to have modified their teaching styles and behave in a different way because of the fundamental effect the furniture has had in defining the classroom layout in a non-traditional way. Such teachers have also soon grown to like the furniture and would not want to go back to the use of traditional furniture, given a choice.

During a review of the GBEP hardware component, including the provision and use of furniture, the reviewers put the following proposition to a number of teachers, with experience of using semi-hexagonal desks in lower grades. "If your principal asked you to teach Grades Four or Five next year, and if you had a choice of semi-hexagonal desks, modified for height, or standard desks in a higher grade classroom, which would you prefer?" All teachers said they would also prefer the semi-hexagonal desks for use with older students, too.

This is an interesting finding. Most head teachers, civil works staff, and other education officials, who had not actually taught using the semi-hexagonal desks, whilst enthusiastic about their use in the lower grades of primary school, were more doubtful about the appropriateness of semi-hexagonal desks for higher grade students. This may partly be because they had not realised that semi-hexagonal desks can still be arranged satisfactorily to create formal teaching and examination conditions, when required. Perhaps it is teachers themselves, who have actually experienced using the furniture, who may be better judges of its advantages and appropriateness.

The GBEP reviewers concluded that the impact of the semi-hexagonal desks has been so immense that they strongly recommended the wide-scale adoption of semi-hexagonal or semi-circular desks in lower grade classrooms. They also strongly recommended the piloting of semi-hexagonal furniture, modified for height, for higher grade students

Because, in actual practice, GBEP lower-grade teachers only ever seem to use the semi-hexagonal furniture in pairs to create complete hexagons, it may also be worth reconsidering the use of semi-circular tables to create circles. As already noted, a circular table allows greater seating flexibility compared to a hexagonal table

### 2.1.3 *The Cost of Semi-Hexagonal Desks*

Education planners and finance officials will be keen to know about the costs of providing semi-hexagonal furniture, compared to standard furniture. In the case of GBEP, the cost of supplying semi-hexagonal desks, on a pilot basis, worked out only a little higher at 70 Yuan per child as apposed to 61 Yuan for standard desks and chairs. It seems quite possible that, if semi-hexagonal or semi-circular furniture was ordered and produced in large quantities, economies of scale would be created: reducing or even completely overcoming the price differential.

All things considered, therefore, an enormously strong case appears to exist for the wide-scale adoption of non-standard furniture: especially in the lower grades and possibly in all Chinese primary classrooms, subject to further experimentation in Grades Four and Five. The GBEP experience of piloting the use of non-standard furniture also has relevance for many other countries in the world where traditional furniture is still used without question.

## 2.2 CUPBOARDS AND SHELVES

In some GBEP classrooms a small storage cupboard was built into the front corner of the classroom, on the plinth (see the photograph on the right).

The advantages of permanent, built-in, cupboards made out of bricks and cement, compared with moveable cupboards include:

- Low maintenance
- Longevity and robustness
- Low cost, relative to life expectancy
- No risk of theft of the cupboards



A storage cupboard built into the front corner of the classroom. There are some important design and usage issues associated with the provision of this cupboard that are discussed in the text.

The main potential drawback of a permanent, built-in, cupboard is no flexibility to reposition the cupboard according to teaching needs and the preferred layout of the classroom. This is less of an issue for traditional classroom arrangements, but may be more problematic in support of participative teaching.

In a participatory classroom, a teacher may want to encourage students to help themselves to learning materials from cupboards., and use of storage facilities (even though the teacher will

maintain ultimate security responsibility for the resources - checking that everything is back where it should be at the end of the lesson). Encouraging students to move around the classroom to help themselves to reference material and worksheets, and to generally play a role in the management of learning resources (which can reduce the burden on the teacher freeing him or her to do other educational tasks) is an important part of the process of creating independent learners with life-long learning skills. There may thus have been a better location for the storage facilities. In further discussion, in **Annex 2**, three classroom layouts are presented. It is worth taking particular note of the way cupboards have been positioned in different ways in support of their use by students and also, in one example, to help define classroom areas.

During a review of the GBEP learning environment, all teachers interviewed said that a storage cupboard was a classroom feature that they valued. It was also something to which high priority was attached. For instance, given the choice of a classroom that featured either a plinth or a storage cupboard every teacher interviewed said he/she would choose a cupboard.

It should be acknowledged that the need for classroom storage space may not be quite as acute in some Gansu classrooms as it would be in many other international contexts, especially where teachers live on campus in dormitories. Dormitories often double as a teacher's office and many teachers store their resources there. Many schools also have additional lockable resource rooms and stores.

On the rear wall of some classrooms, GBEP has also built permanent, brick and cement, display shelves, as shown in the adjacent photograph. These facilities have also been appreciated by teachers.

The same advantages and disadvantages in relation to permanent and non-permanent solutions, discussed above with regard to cupboards, also apply to shelving arrangements. Again, the issues are potentially more acute when planning to promote modern methods of teaching.



A display shelf built onto the rear wall of a classroom and put to good use.

The provision of storage and display space within the classroom undoubtedly supports the learning process and enhances the learning environment. Education authorities are therefore encouraged to try to provide classroom storage and display solutions where they are affordable. The choice between permanent or non permanent solutions is not a straightforward one and the advantages and disadvantages of each kind need to be appraised with regard to the context of use and affordability. In making choices about the most suitable forms and designs of storage and display facilities, policy makers should remember to take into consideration the implications for modern methods of teaching and thus judge suitability not only in terms of potential teacher use, but also potential student use.

One of the GBEP's achievements is that, through a process of experimentation, it has helped to highlight these issues and some educators, planners, and policy makers have now begun to think more about them.

The GBEP provided schools with a selection of teaching resources, ranging from classroom books, to reference books, to teaching aids such as globes and anatomical models, to musical instruments. The provision of teaching and learning material of this kind was a direct intervention strategy to help raise the quality of the learning environment and the quality and effectiveness of teaching, including in support of new participatory methods.

What may be of especial interest to a wider audience is what was learned about patterns of resource usage. It was not an unexpected finding that some schools have used their resources more frequently and more effectively than others. This is a pattern found throughout the educational world. The reasons why some schools do not make quite such good use of their materials are also well understood from international experience and seem just as relevant to the circumstances in GBEP counties, and elsewhere in China.



Examples of teaching aids and resource books provided by the GBEP. The centre photograph shows books supplied to a school more than two years ago that are still in pristine condition. This suggests that the school may have been too cautious in making good use of them. The photo on the right, in contrast, shows books in another school that have clearly had a lot of use.

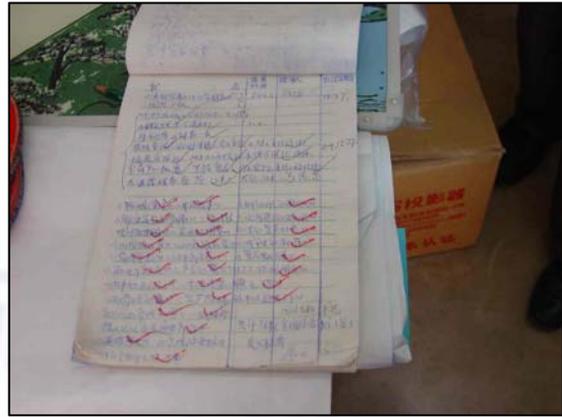
Many, if not all, schools received, through the project, a package of resources of a quality and range that they have never experienced before. It is also quite possible that it might be many years, even a professional lifetime, before the same schools receive resources of this "richness" (in range and value) again.

It is very understandable, therefore, why schools will do their best to preserve these precious resources. There are also equally understandable reasons why principals and teachers will be fearful of damage and loss, and be concerned about being held personally accountable.

There are thus in GBEP counties, and many other developing areas of the world, very real tensions between trying to keep materials safe and in new condition and actually using them and incurring normal wear and tear, which will eventually lead to the materials reaching an end of their useful life. Of course, if materials are not used, and kept locked away, they serve no useful purpose and children and teachers do not benefit from them.

Schools need to be encouraged continuously to use their materials, while at the same time taking precautions to make sure they are looked after carefully to prolong their life. The GBEP endeavoured to communicate such messages.

What may be a very important finding is that there seems to be a strong correlation between schools that have used their resources frequently and well, and schools that have kept records of resource usage. (See the photograph on the right).



An effective education policy, therefore, to enhance effective resource use may be to oblige or encourage all schools to keep records of the use of their resources. This very simple intervention could possibly have a very big impact in helping to ensure that teaching and learning resources are used even more effectively than at present. It may also be helpful if school inspectors play a role. Inspectors can encourage schools to keep records of resource use, or insist on this practice. They can also monitor school compliance, and intervene when they judge that resources are not being used sufficiently well.

A record of resource use. In the GBPEP there appeared to be a strong correlation between the keeping of records and the frequency of resource usage - as evidenced by normal wear and tear.

## AN EXAMPLE OF EXCELLENT PRACTICE:

A School Library operating in a Jishishan County primary school



In this excellent example, a school operates a "supermarket" library system, immediately after afternoon classes. Ten students at a time are allowed into the library to choose a book, which they can take home for up to three days. During opening times, the library is supervised by a teacher who records the loan details, at a checkout desk, as students exit.

Even this school may not have got things quite right yet! As the smaller photo on the right shows, students form large queues to wait their turn to enter the library. This may be discouraging. There is a challenge for the school to try to find a more-efficient way of allowing smaller groups of children to use the library at different times, perhaps on different days.



In GBEP civil works classrooms three wooden display rails were fitted with the purpose, of providing hanging space for teaching aids and for students work. Two rails run at approximately waist height and the third is positioned near the ceiling. (See the photograph on the following page).

The transformation in the use of display, when comparing pre-project photographs and current practice, is one of the strongest visible differences an observer notices when entering the great majority of GBEP classrooms. The difference is little short of revolutionary. Considering the importance that good display has as a key party of quality teaching, the amount of display in GBEP classrooms deserves to be seen as a crucial indicator of success in raising the quality of the learning environment.

Because GBEP has so obviously been successful in promoting the use of display in classrooms, it seems reasonable to assume that the project's promotion of display rails must have played a very significant part. However, somewhat surprisingly, review evidence did not support such a conclusion:

- Some of the best evidence of high quality displays was collected in classrooms with no display rails (i.e. in classrooms not built or refurbished by the project).
- Where there was very high quality display in classrooms built by GBEP, the display rails provided by the project played only a very small part of the display.
- Many teachers seem even more disposed to attach display items to the walls than they do to the display rails.



This photo clearly shows the three GBEP display rails. Note how the top rail is proving useful for hanging display and how the lower rail is not used: experience confirmed that it is located too low - any work hung from the bottom rail will be obscured by students and easily torn as students move in and out of their desks.

Furthermore, it seems that the project did not succeed in placing the lowest rail at an ideal height. It appears to be too low. The display rail that has perhaps had the most significance for the nature of display in classrooms is the highest of the three rails. Without this, it would have been much more difficult to hang display across the room (See the photograph above).

On further analysis and reflection it would seem, therefore, that the key determinant of the amount and quality of classroom display in GBEP classrooms must have been display-relevant teacher training inputs and not the provision of the display hardware itself. What appears to be so important is the attitude of the teacher and his/her understanding of the importance of display, the reasons for it, and the role it can play. All of this is achieved through teacher training.

Display rails have some value, but the evidence suggests they are not quite as important as might have been supposed. However, the cost of providing wooden rails around walls is such a small part of the total cost of building a classroom, it is hoped display rails can still be included, where affordable; albeit with some further experimentation with regard to their ideal height.

Display rails can be one way of helping to achieve visual impact for display, in that they help to frame a display. But there are other creative ways of achieving strong visual impact that are not so resource dependant. The photographs on the following pages help to underscore this point.

Within GBEP classrooms, the display of students' work has been a major feature. Beyond this, the nature of display has been largely decorative. But there are many other reasons for, and ways of, using display, as highlighted in **Annex 3**. Taking the use of display to an even higher level is now a future challenge for additional teacher training.

The following photographs show students working from teaching material displayed on the classroom wall and a teacher using display material as a direct teaching aid. This confirms that making even better use of display can easily be achieved, provided teachers are exposed to some further new ideas.



Two excellent examples of the educational use of display: students working from display material on the classroom wall, and a teacher using a display item as a teaching aid.

## TRANSFORMATION OF CLASSROOMS THROUGH DISPLAY:

### One of the Most Striking Features of GBEP Impact

The photos on the left-hand side are from classrooms built or refurbished by GBEP. It is worth noting that, in all three of these examples, no use has been made of the lower display rail. It seems to be positioned too low. The upper rail, however, creates a special opportunity for hanging displays across the room. It is arguably the most useful rail in a primary classroom. The photos on the right-hand side are from classrooms not constructed or refurbished by GBEP, but where the teacher has benefited from GBEP teacher training. The amount and quality of display is just as impressive. Teachers in both types of classroom seem very happy to use the walls themselves on which to put up displays.



## The Power of Borders to Enhance Visual Display and Add Impact and Contrast



In the photo shown at the top left, a teacher has made a very attractive display along the wall of the classroom. Unfortunately the impact of the display is lost completely as a result of white paper being displayed on white walls. The display is hardly visible from a distance.

In the photo shown at the top right, the display rails provided by GBEP have been used effectively to provide a frame in which to set off displays attractively.

However, as the six examples shown below confirm, wonderful contrasts can also be achieved by using brightly coloured borders and without display rails. It is not even necessary to mount work on expensive coloured card.



"Happy Campus" has embraced the provision of sports and play facilities and equipment - including basketball stands, ping-pong tables, climbing frames, see-saws, and smaller items of equipment such as balls and skipping ropes. (See the photographs on the next page). Happy Campus has promoted the decoration of boundary walls, and the provision of gable-end and other display features. It has also strongly encouraged the "greening" of school grounds, through planting of flowers and trees. Other features of the Happy Campus initiative have included providing seats and tables for students to socialise and relax. Some tables have included features for playing outdoor versions of chess and other games.

Making the wider schools grounds a more-attractive, stimulating and enjoyable place for children to spend their time has been part of a very important GBEP strategy aimed at enhancing the learning environment and creating more child-friendly schools. Furthermore, the *process* of achieving these improvements has been equally important - especially in the way that strengthened school and community links have been fostered.

Project planners and implementers believed that a more-attractive environment would draw children to schools, thus increasing enrolment. It was also believed that access to sports and play facilities would mean that children would enjoy school more and thus stay in school. In other words, it was also an intervention that might help to reduce dropout. Happier children may also learn more. There is now strong empirical evidence emerging that all of these assumptions and expectations have been correct.

The extent to which the Happy Campus initiative has transformed the appearance of schools and captured the imagination of parents, teachers and students - seemingly in all project schools - is nothing short of sensational. There is no doubt that the Happy Campus initiative should rank among the major successes of the GBEP. What is especially important, it appears that the impact of the Happy Campus initiative is disproportionate to the cost of the initiative. In other words, it appears an extremely cost-effective intervention. However, it needs to be recognised that the success of the Happy Campus initiative has in considerable part been underpinned through integration with, and links to, other project components. The greening of school campuses, for instance, was supported by initiatives to improve water supply. The school development planning process - another project feature - assisted greatly in helping to promote the support and involvement of the community.

The photographs on the following pages provide a flavour of the ways in which school campuses have been transformed.



Community  
Parents  
Teachers  
Children



Whole School Grounds  
Improvement at its best:  
Involving everyone and as a *learning* experience.

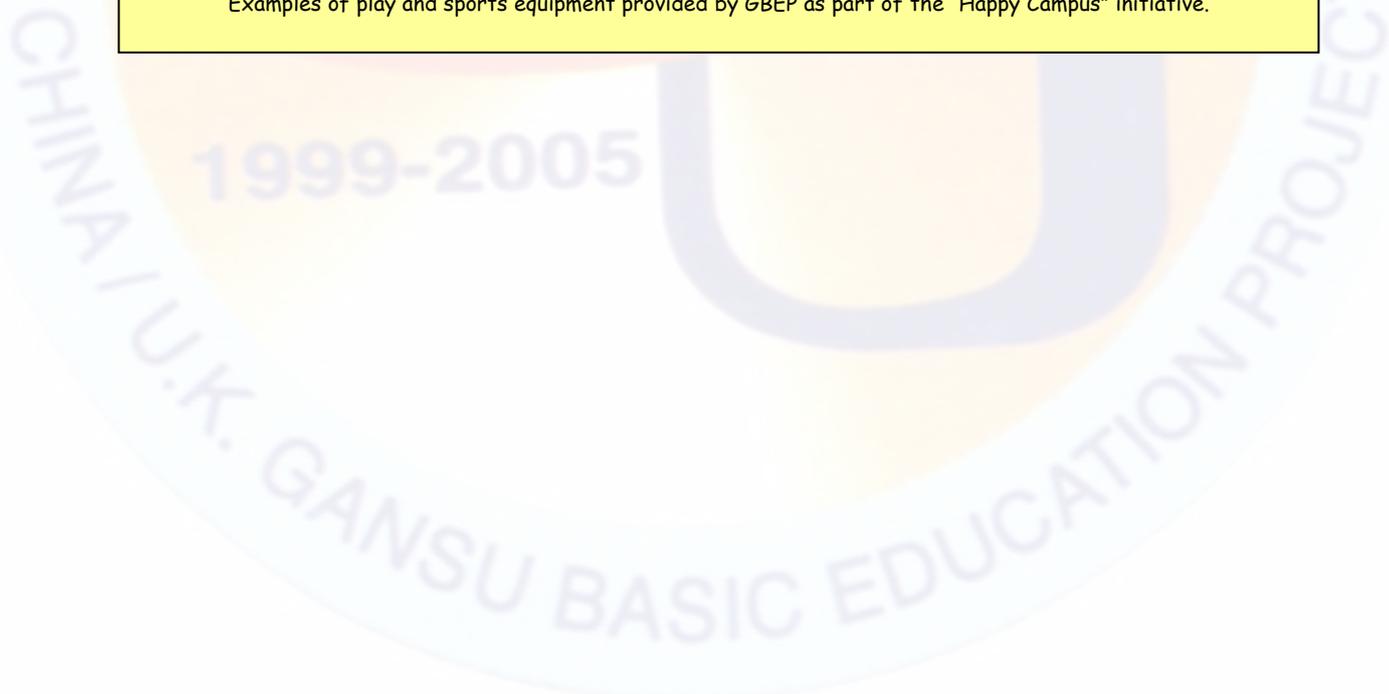


The photos left and centre show the two types of gable-end display feature provided and promoted by GBEP.

The photo on the right shows a gable-end blackboard being added to a non-civil works classroom, using non-project funds. This confirms the value attached to this feature. The headmaster at the school commented: "Yes, we did have blackboards like this before the project, but now we have a much better idea of their potential and how they can be used."

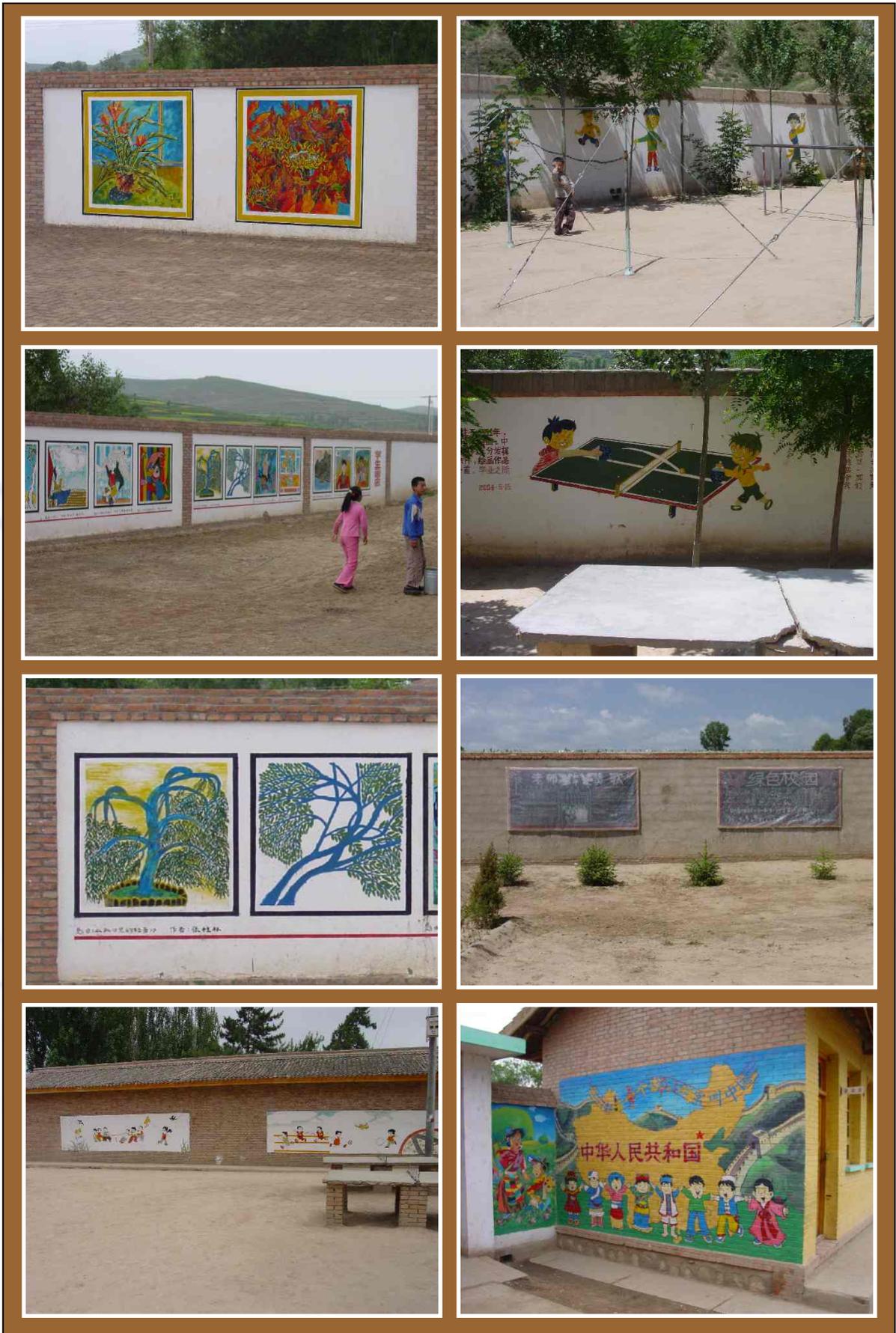


Examples of play and sports equipment provided by GBEP as part of the "Happy Campus" initiative.





Examples of more activities and features contributing to a "Happy Campus"



Examples of Boundary Wall Enhancement - contributing to a "Happy Campus" atmosphere

The kinds of sports equipment the project has provided are not typically available in the local communities from which children are drawn. There is no doubt that the equipment has proved a very attractive feature and contributed significantly towards creating a more child-friendly learning environment. In all schools the facilities appear to be used by many children at every available opportunity outside of lesson times.

A significant future challenge, however, relates to the observation that the use of almost all sports equipment is dominated by boys. This was despite efforts by the project to involve both boys and girls in choosing facilities that they would enjoy using.



Skipping ropes have appealed especially to girls. However, there is a challenge to find ways of ensuring that more play and sports facilities are enjoyed as much by girls as they are by boys.

It is only the provision of skipping ropes that appears to have appealed particularly to girls. For GBEP, there is now a challenge to give further consideration to what additional or alternative facilities could be provided in future that might have "girl appeal". It might also be worth considering locating some facilities, such as see-saws and ping-pong tables, in an area of the playground designated for the use of girls only. For planners elsewhere, who may be considering emulating the GBEP "Happy Campus" approach, it is important to be aware of how difficult it can be to ensure that the interests and needs of girls are met equitably.

Sports and play equipment can be expensive but, where resources are more-limited, it is worth considering lower-cost solutions. Illustrations on the next page provide some initial ideas of the kind of solutions that could be achieved with community involvement. Hopefully, they will also stimulate additional ideas.

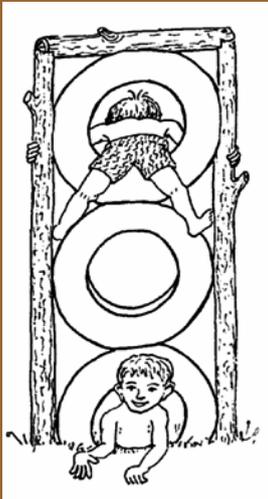


Many playground games require no resources.

It is also worth stressing that there are many active, sports-like, playground games that children can be taught and encouraged to play, that require little or no specialist equipment. There is quite a strong culture in China of playing such games. This is something that could be built on. One Gansu school provides an exceptional example in this regard (see the photograph above). Almost every child in the school is engaged in an organised game during a lesson-break for play.

In **Annex 4**, the opportunity is taken to provide some further reflections on how the Happy Campus initiative might now be taken a stage further - drawing from examples of best international practice

## Lower-Cost Solutions for Playground Equipment?



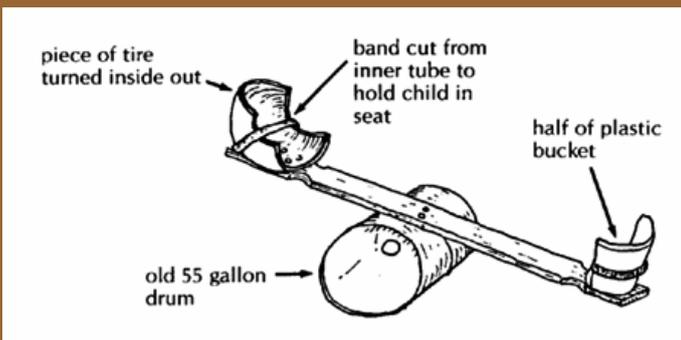
Example illustrations from WERNER, David (1996 edition) *Disabled Village Children: a guide for community health workers, rehabilitation workers, and families* (Palo Alto, Hesperian Foundation) ISBN: 0-942364-06-6. The whole book is available on the internet. Attention is drawn to Chapter 46 in particular.

One current link is as follows:

[www.dinf.ne.jp/doc/othr/dwe002/dwe00201.htm](http://www.dinf.ne.jp/doc/othr/dwe002/dwe00201.htm)

(Should this link fail, a key-word search engine trawl for "Werner Disabled Children" should easily locate the material.

Werner's book also provides construction guidelines:



Gym will be more solid if tires are bolted together.



washer or metal plate bolt

