Use of ICT in primary teacher training: Findings of Monitoring Survey and Interviews

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content

- Monitoring Plan

- Monitoring Survey Findings

- Findings of Interviews and Focus Group Discussions

The Project: main interventions

The scope of the project:

(i)   an assessment of ICT use in education;

(ii)   development and production of training materials for primary school teachers;

(iii)   analysis of Web-based teacher development; and

(iv)   introduction of ICT-assisted educational tools for teacher training

Main deliverables:

- Produced and distributed 6 VCDs together with teacher guide for primary teacher professional development to over 700 primary schools of Mongolia (in average one set of VCDs and 4 copies of teacher guide per each rural school) by April 2011

- Produced and distributed 5 additional VCDs and teacher guide to all primary schools of Mongolia in January, 2012

Sites covered by monitoring missions

Ulaanbaator

Tuv

Bayankhongor

Dornogobi
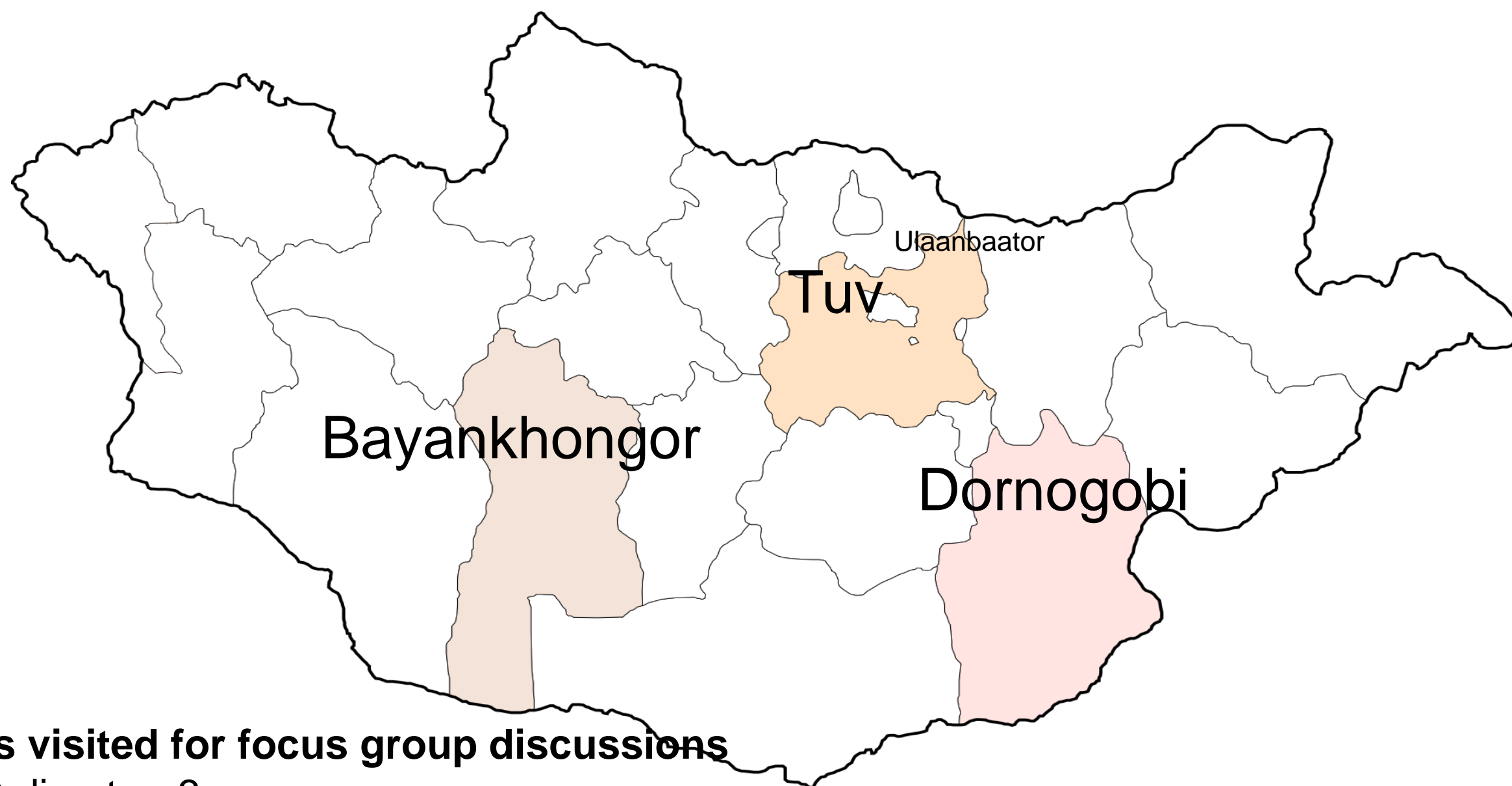
Sites visited for focus group discussions
ECD director: 3
Methodologist : 3
Training Manager : 12
School Principal : 7
Teachers : 150

Survey participants:
aimags   21
Schools
Teachers : 965

Map from Wikimedia

Monitoring Methodology

Assessment of the use of teacher guide and six VCDs for teacher development in:
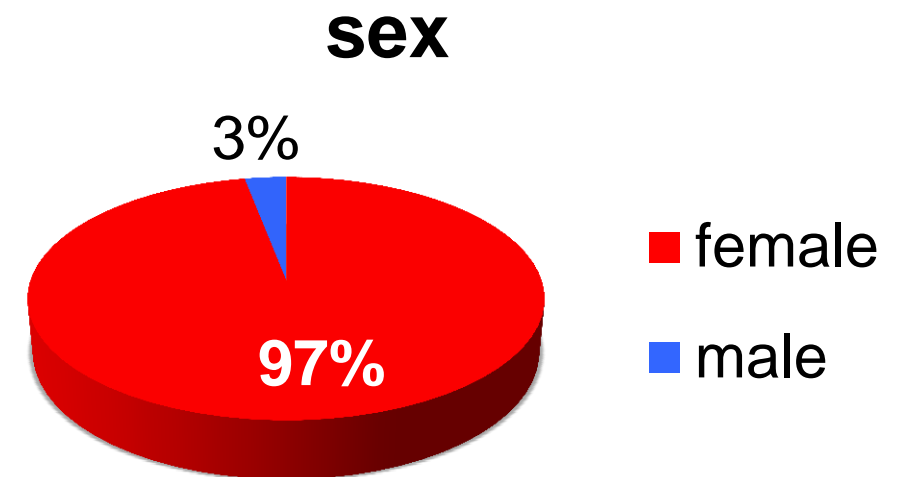- Mongolian Language,
- Mathematics,
- Human and Environment,
- Human and Society,
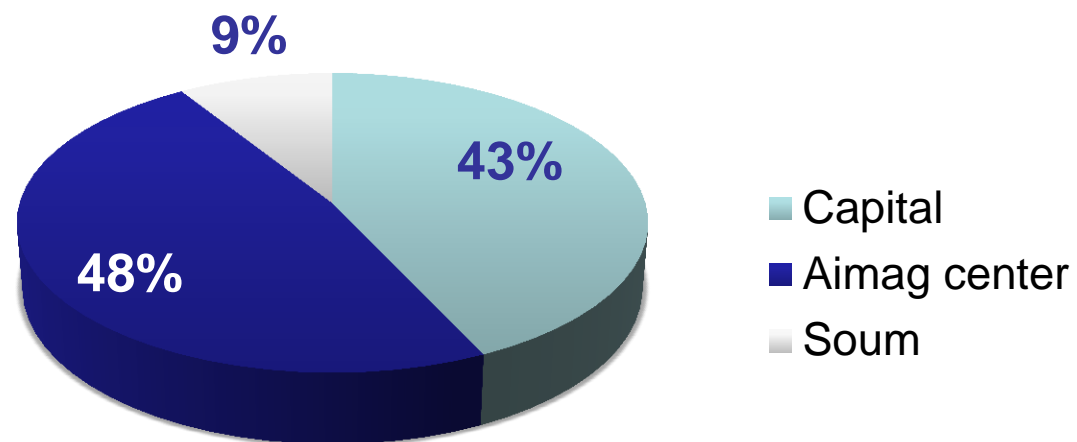- Art and Technology and
- Communication

Methodology:
- Sample survey: especially designed questionnaires for teachers covering:
  - (i) demographics of respondents,
  - (ii) the use of VCDs including frequency and mode of use,
  - (iii) things teachers learned and used for teaching from VCDs,
  - (iv) training related to the use of VCDs, if any,
  - (v) the appropriateness of content and methodology,
  - (vi) the technical quality of VCDs (duration, audio/sound and visual), and
  - (vii) topics/themes should be covered in future VCDs.

- Focus group discussions with teachers, training managers, school principals and primary education methodologists of provincial Education and Culture Department.

Respondents: Teachers - 965

	min	21
Age	max	62
	mean	38
	min	1
Years of service	max	42
	mean	15

sex

3%

97%

- female
- male

School location

9%

43%

48%

- Capital
- Aimag center
- Soum

School type

24%

3%

73%

- grades 1-5
- grades 1-9
- grades 1-11/12
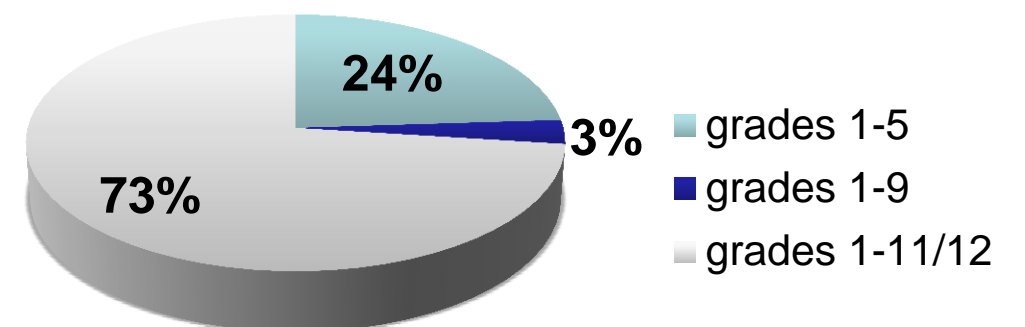
ICT proficiency and use

Total of respondents 965 (Questionnaire)

proficiency in using ICT

Legend: ■ very good ■ good ■ poor ■ very poor

use of ICT in teaching

Device	everyday	few times a week	few times a month	not at all
internet	28	34	28	10
PPP	11	34	46	9
movie-making program	2	8	36	54
DVD/VCD	4	25	46	25
LCD projector	2	24	61	13
PC or laptop	43	34	21	2

Legend: ■ *everyday* ■ *few times a week* ■ *few times a month* ■ *not at all*
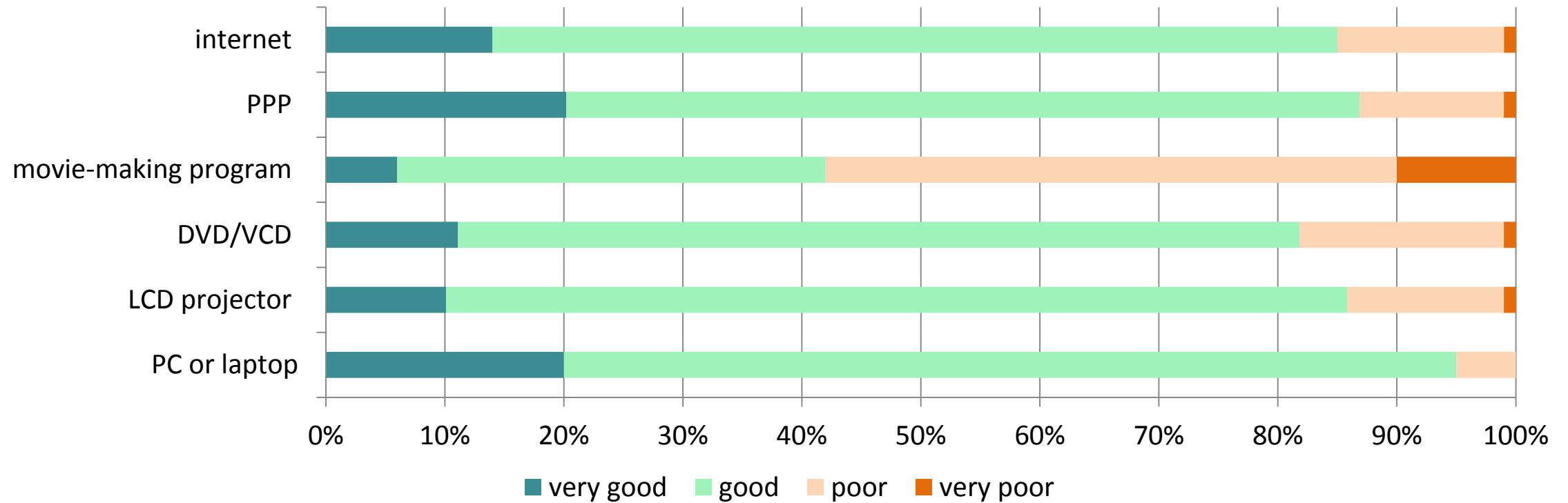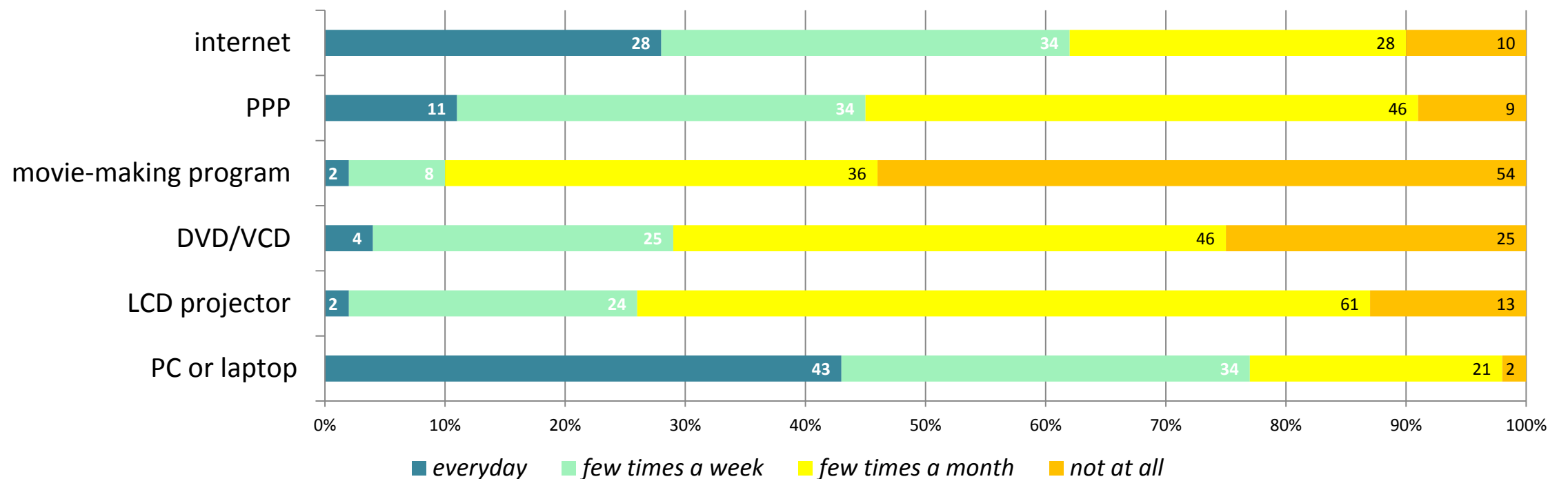
General usage of VCDs & Guideline

frequency of refer to the content VCDs & guideline

Category	very often	sometimes	seldom	not at all
Teacher Guide	26	38	25	10
Communication VCD	7	35	40	18
Art & Technology VCD	10	39	37	15
Human & Society VCD	7	36	39	18
Human & Environment VCD	9	40	39	13
Math VCD	12	44	33	11
Mongolian Language VCD	14	46	29	11
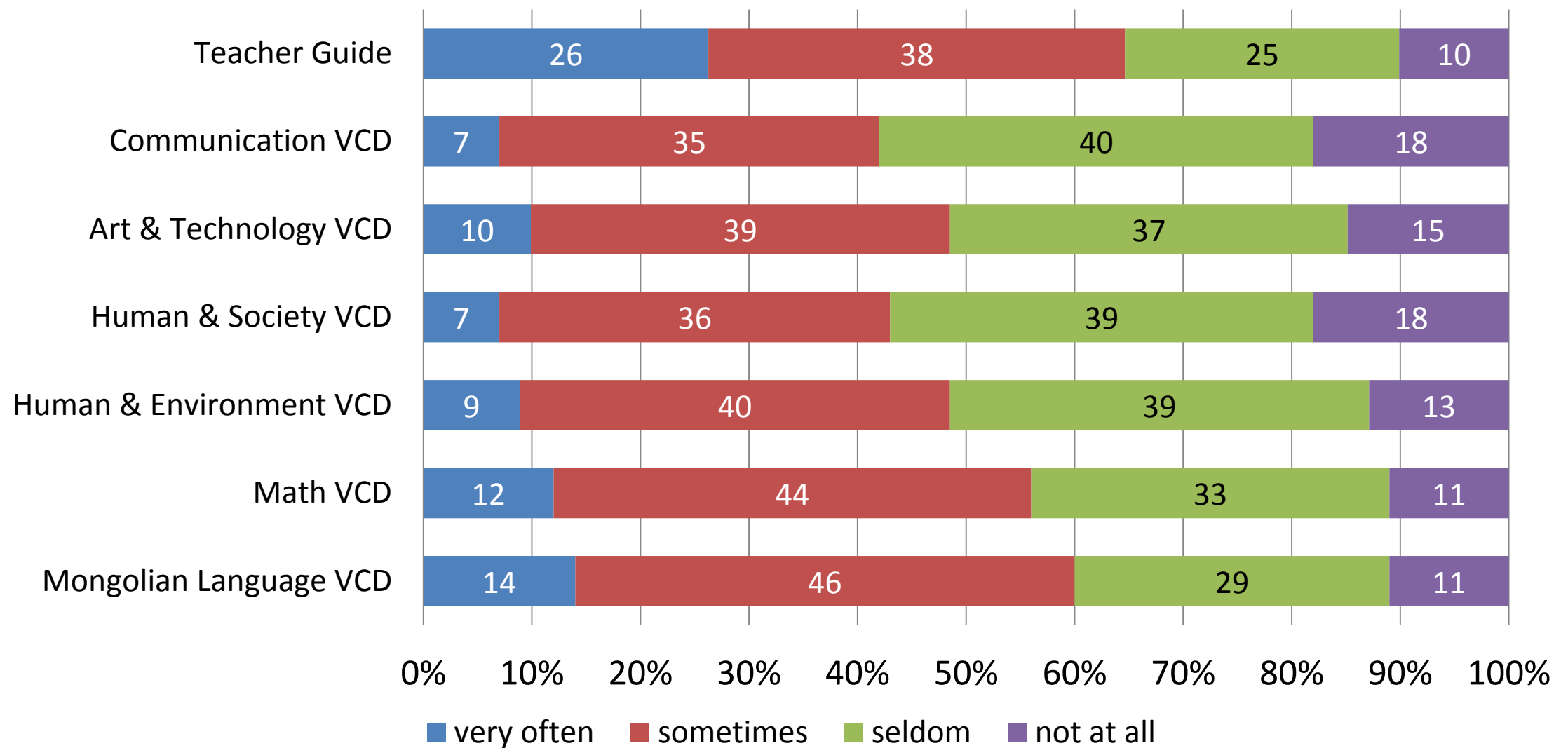
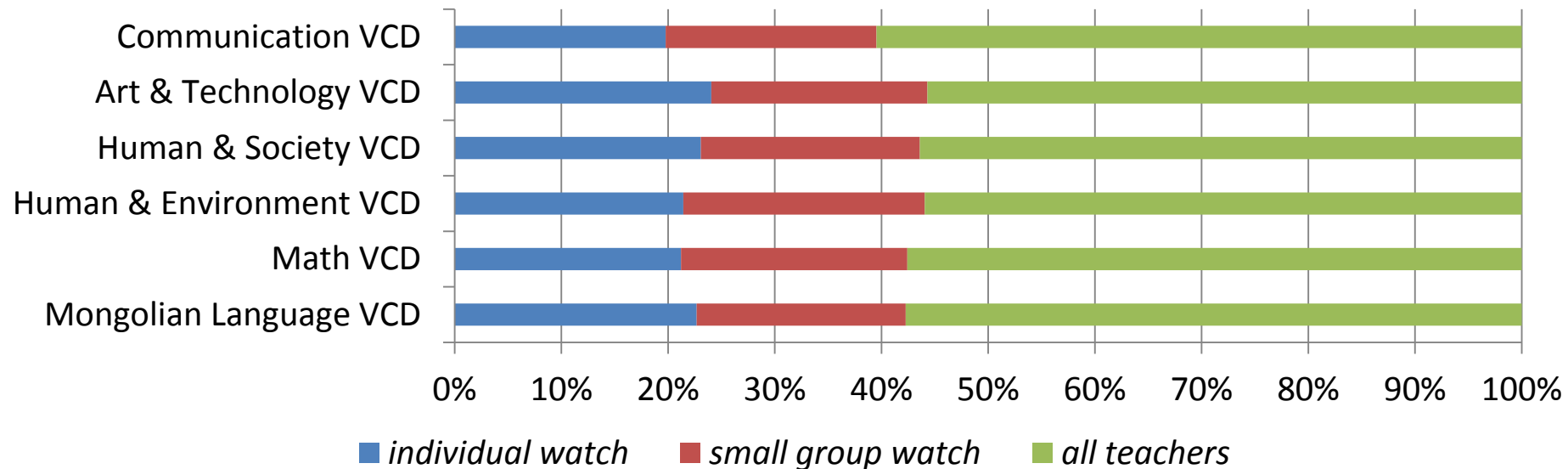Majority of the teachers referenced the VCDs at numbers of times.

Use of VCDs: where and how

How do the teachers watch the VCDs?

Legend: ■ *individual watch* ■ *small group watch* ■ *all teachers*

Categories (top to bottom):
- Communication VCD
- Art & Technology VCD
- Human & Society VCD
- Human & Environment VCD
- Math VCD
- Mongolian Language VCD

Where do teachers watch the VCDs?

Legend: ■ teacher devt center ■ classroom ■ comp lab ■ school library ■ home

Categories (top to bottom):
- Communication VCD
- Art & Technology VCD
- Human & Society VCD
- Human & Environment VCD
- Math VCD
- Mongolian Language VCD
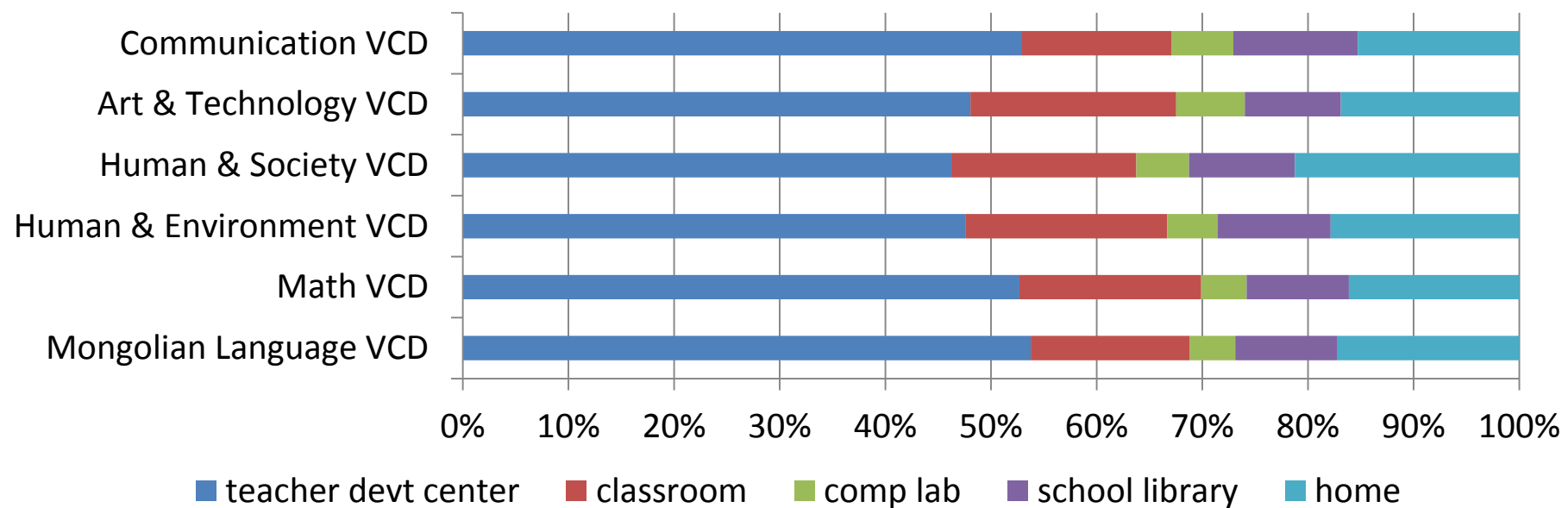
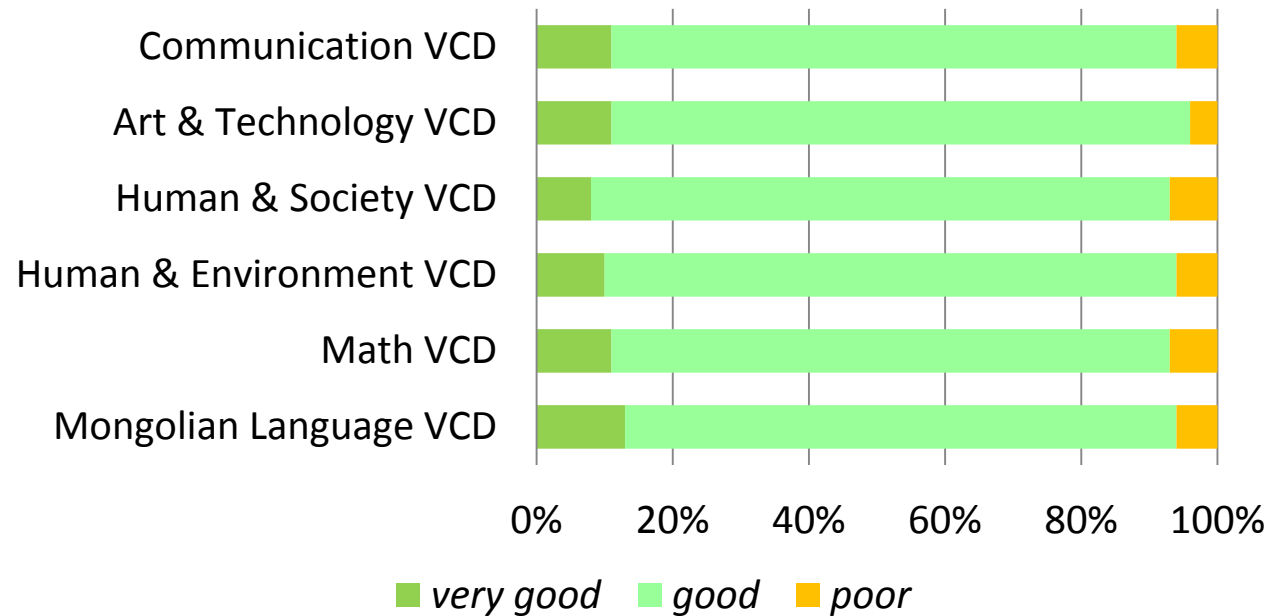Majority of the teachers watch the VCDs at school settings in company of their colleagues.
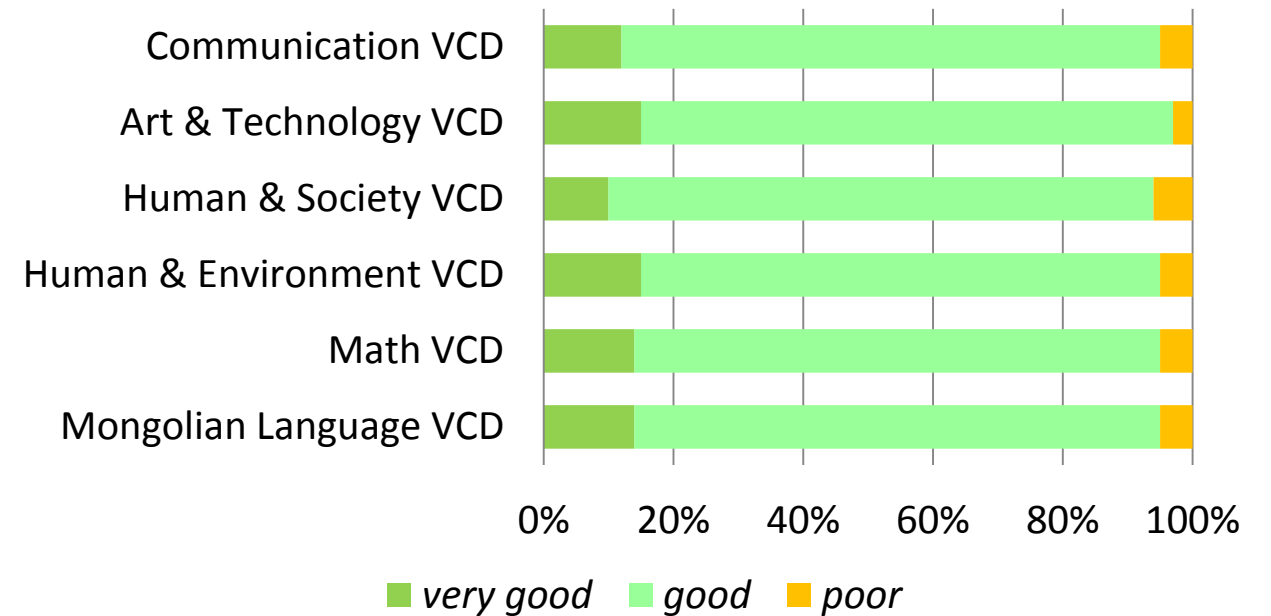
What is learned from VCDs?
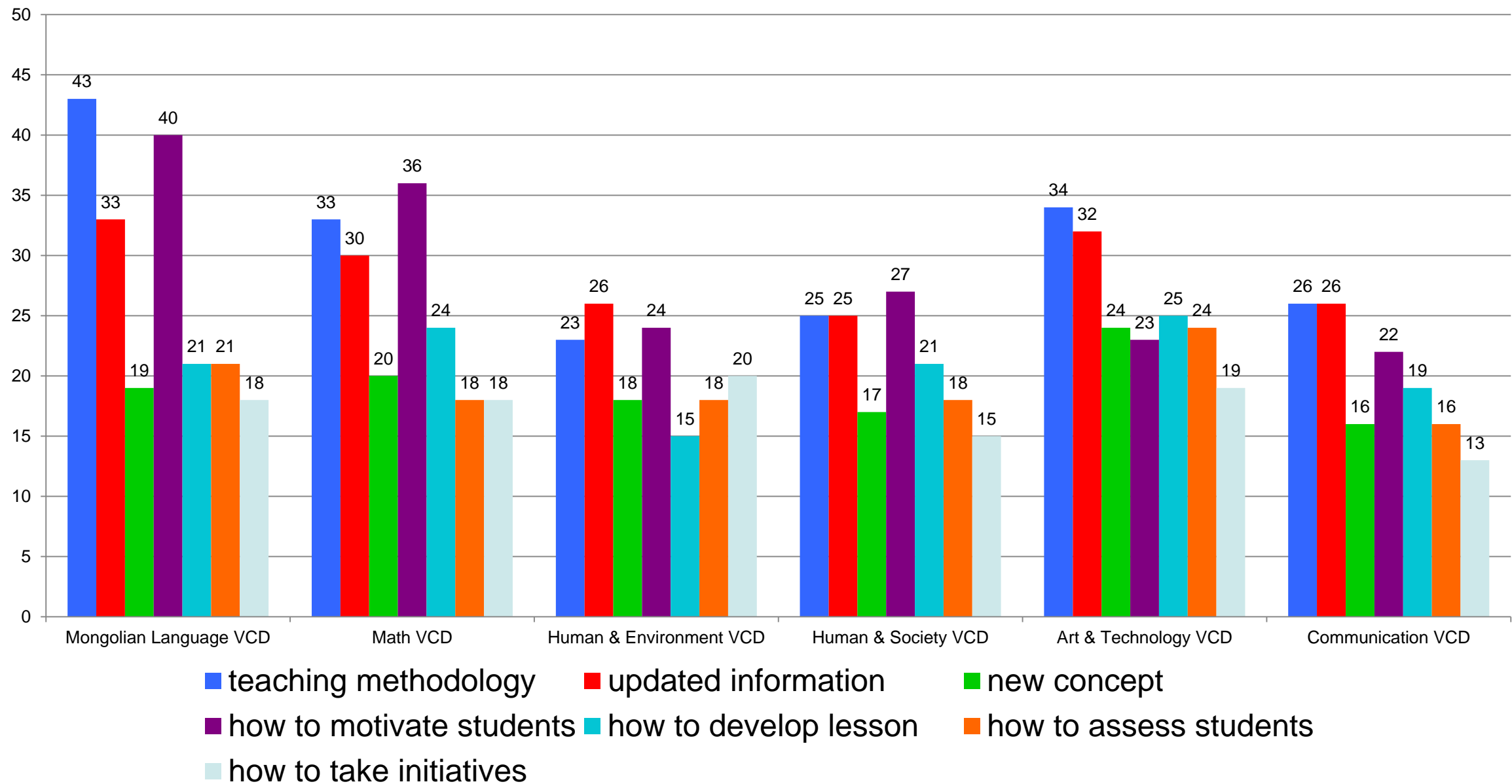
The VCDs were used as a reference for teacher training in lesson planning, content development and instructional and attitudinal change.
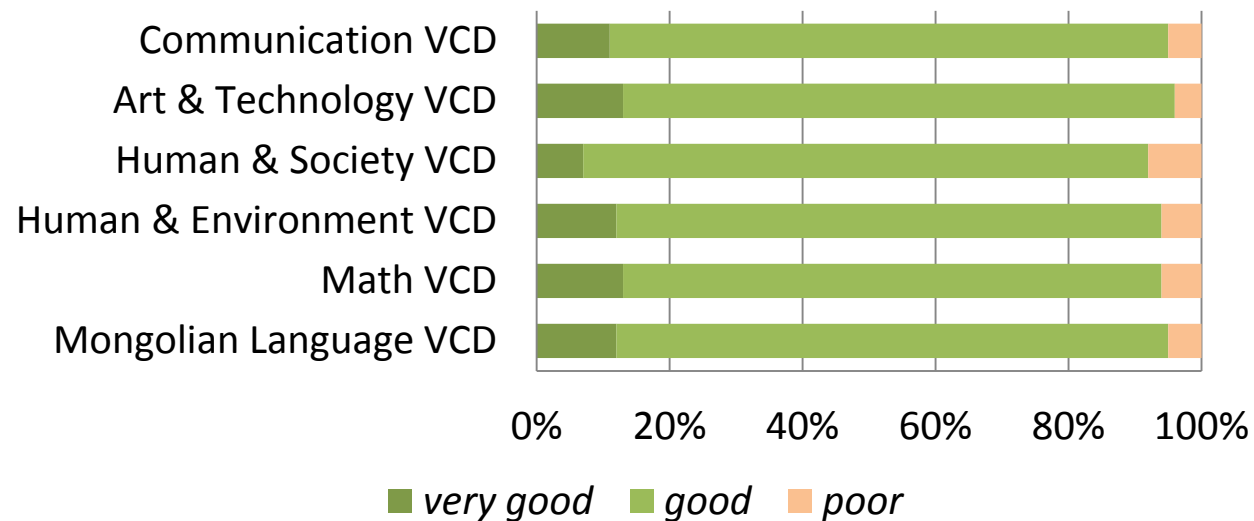
Ratings of the VCDs

ease to apply

Communication VCD
Art & Technology VCD
Human & Society VCD
Human & Environment VCD
Math VCD
Mongolian Language VCD

0% 20% 40% 60% 80% 100%

■ *very good* ■ *good* ■ *poor*

provides teaching examples

Communication VCD
Art & Technology VCD
Human & Society VCD
Human & Environment VCD
Math VCD
Mongolian Language VCD

0% 20% 40% 60% 80% 100%

■ *very good* ■ *good* ■ *poor*

inclusion of applicable exercises

Communication VCD
Art & Technology VCD
Human & Society VCD
Human & Environment VCD
Math VCD
Mongolian Language VCD

0% 20% 40% 60% 80% 100%
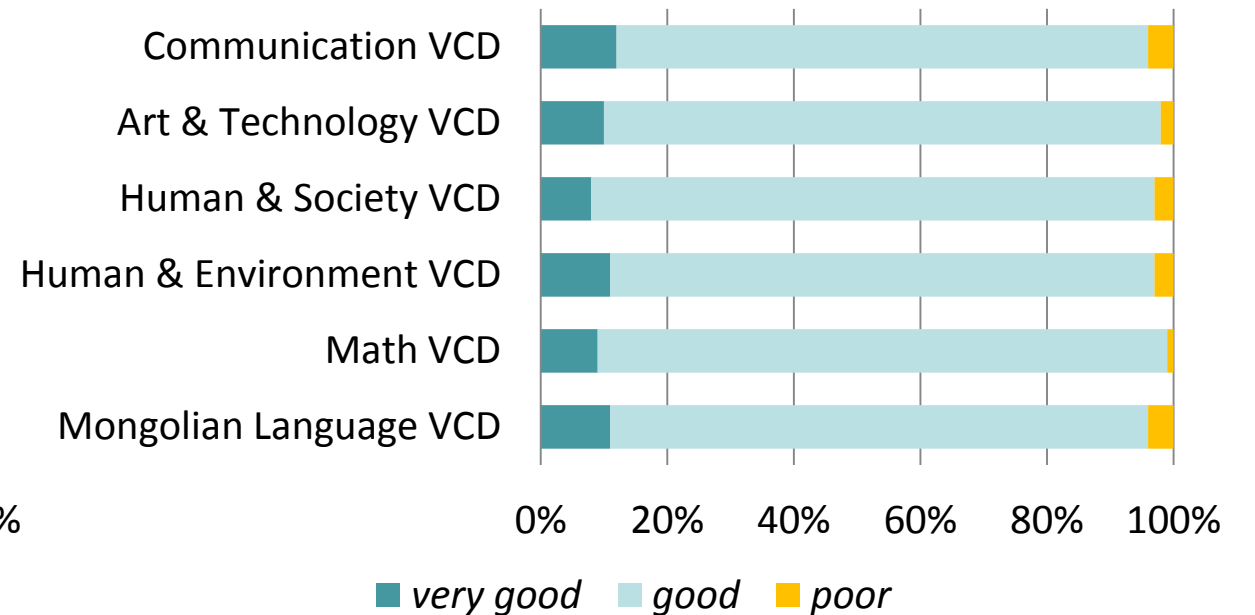
■ *very good* ■ *good* ■ *poor*

The VCDs were evaluated as a easy and applicable source for teacher development.
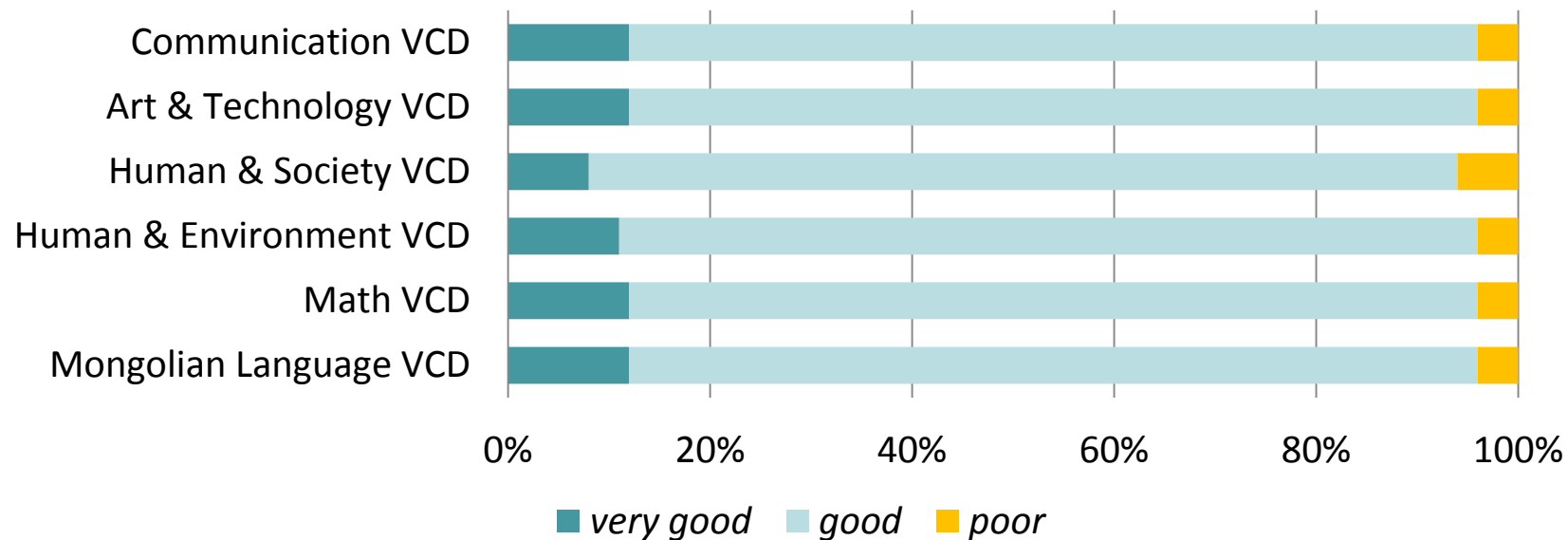
Ratings of the VCDs

content choice
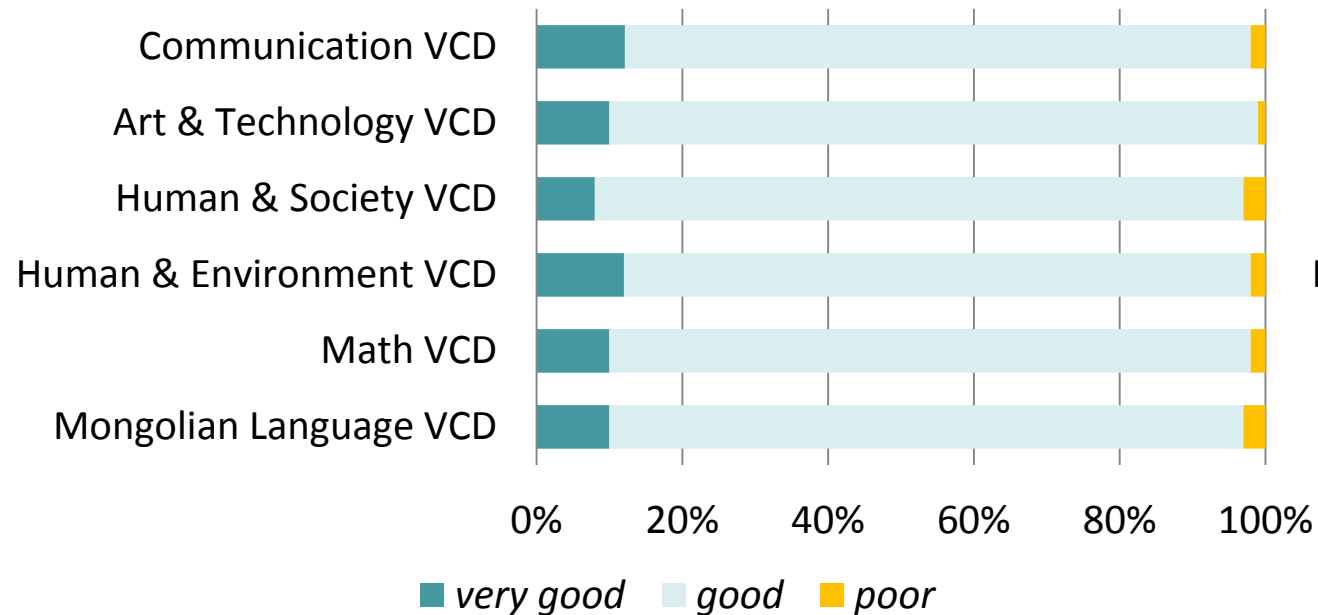
fit to education standards

ease to understand

The contents of VCDs were evaluated as a relevant source for teacher development.

Analysis of some relationships

Relationship between the use of VCDs and the frequency and proficiency of using computer or laptop

For all subjects, the use of the VCD contents was enhanced with frequency and proficiency of using computer or laptop.

Significant at o.oo1 level positive correlations (r ranges from 0.11-0.18) were observed between the use of VCD contents and frequency of using PC or laptop.

Significant at o.oo1 level positive correlations (r ranges from 0.11-0.18) were observed between the use of VCD contents and proficiency level of using PC or laptop.

Analysis of some relationships

Relationship between the frequency of using VCDs and location of schools

Aimag center teachers use the VCDs more frequently than Ulaanbaatar teachers.

t-test for independent samples means showed that there is a statistically significant (at 0.001 level) difference in frequency of using VCDs by teachers between Ulaanbaatar city and Aimag center.

However, there was no significant difference in using teacher guide.

Analysis of some relationships

Relationship between location of school and frequency of using computer

Teachers from aimag center (M=3.31) and soum (M=3.37) schools use computers more frequently than teachers of Ulaanbaatar city (M=3.03).

A one-way ANOVA test showed the frequency of using computer or laptop differs by location of school $F(2, 997) = 15.413$; $p<0.001$.

Analysis of some relationships

Relationship between location of school and proficiency of using computers

Aimag center teachers feel more proficient with computers than Ulaanbaatar teachers.

statistically significant ($p < 0.001$) difference in the proficiency of teachers using of computer or laptop between Ulaanbaatar and aimag center $F_{(2, 999)} = 15.813$.

Relationship between the use of VCDs by teachers and training manager's activity after receiving VCDs

None of activities of the training managers at the school after receiving the VCDs and teacher guide significantly affected the use of VCDs.

Summary of Survey Findings:
ICT skills of teachers

- Four out of five teachers feel quite comfortable with different ICT applications. However, the proficiency of teachers varies by different tools.
- Teachers are most proficient with computer. Teachers possess similar level of proficiency with the internet, power point presentations and LCD projectors. Teachers are the least familiar with movie-making program.
- Training managers have higher level of proficiency with ICT tools. Their advantage over teachers is about 10%.

ICT skills of teachers (cont'd)

- Teachers most frequently use PC or laptop, followed by internet: majority of teachers use these two applications every day or few times a week.
- However, power point presentations, LCD projector and DVD/VCD are used by the majority of teachers "few times a month" or "not at all".
- Over 50% of teachers indicated that they do not use movie-making and one third seems to use movie-making few times a month.

Use of project produced VCDs and teacher guide

- Three fourth of teachers watched the VCDs and 78% - read teacher guide book published by the project.
- Teachers prefer to watch VCDs together with all teachers. Two of every five teachers watched VCDs either individually or as a small group.
- A half of respondents indicated that they watched VCDs in the teacher development center of the school. The other half of teachers watched VCDs either home or classroom, or school library.
- All the VCDs and teacher guide are used by the most of the teachers. From the VCDs, Mongolian language and Math VCDs are used more frequently than others.

Use of project produced VCDs and teacher guide

- Teacher guide is used very often by 26% of respondents and 63% use it sometimes or seldom. From Mongolian language and Math VCDs, teachers learned teaching methodology, how to motivate students and updated information to greater extent than others. This was the trend across the all VCDs.
- The absolute majority of teachers found all VCDs easy to apply.
- About 80% respondents agreed that VCDs provide good teaching examples, include applicable exercises.
- VCDs were recommended to other teachers by 95-97% of respondents. Teacher guide received 97% recommendation.

Findings of

focus group discussions

and interviews

Sources of feedback

- Primary school training managers

- School principals

- Aimag (province) methodologists

- Directors of aimag Education Offices

Findings from focus group discussion (1)

1. **Increase of motivation** : Project increased teachers' motivation for ICT use and strengthened team work sprit among teachers

2. **Reflecting New Education Standard** : Content and presentation style are aligned well with education reform process, education standards and the goal of promoting student-centered learning

3. **Attitude Change** : The project contributed to changing the way of teaching with introducing new methodology and creative thinking

4. **Need for Equipment** : Gap of technological capacity among rural schools exists and more ICT equipment are needed

Findings from focus group discussion (2)

5. **Upgrading Skills** : VCDs and guidelines upgraded teachers' methodological and planning skills

6. **Student Motivation Increased** : The student-centered learning methods introduced in the materials increased students' motivation for learning

7. **New relationship between ECDs and Schools Needed** : Teachers and training managers suggest ECDs to change their way of communication with schools and teachers

8. **Increased collaboration** : Good teaching material shared among teachers promoted network and collaboration

9. **Cost Effectiveness** : Teachers appreciate VCDs as a cost effective tool for their professional development

In conclusion

- There is a positive outcome of this project: The materials contained high-quality content that allowed teachers to improve on their classroom delivery of primary education. The student-centered learning methods introduced in the book allowed teachers to create a variety of teaching methods that resulted in higher student motivation to learn. Teachers created lots of teaching material and improved their professionalism at the same time.

- In utilizing the material, teachers were seen to gather into groups because of the limited number of materials distributed. At the same time, the use of the material was further reinforced through Aimag-level teaching material competition.

In conclusion

- The findings of the survey suggested that the contents of VCDs become as a relevant source for teacher development. All the VCDs, no matter what was the subject, served as valuable resource material for teachers for learning teaching methodology, how to motivate students and new information. Teachers also found VCDs highly recommendable to others and easy to apply due to its teaching examples and applicable exercises. Project produced teacher guide meets its purpose to serve primary teacher development needs.

- Therefore, it is possible to conclude that the development of training materials for teachers using ICT can be an effective way to encourage wider use of ICT in education for the improvement of the quality of teaching and learning in primary education.