Primary Mathematics Study on Whole Numbers
June 3 - 7, 2015 in Macau / China

教育暨青年局
Direcção dos Serviços de
Educação e Juventude

ICMI Study 23

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WG3
ASPECTS THAT AFFECT
WHOLE NUMBER LEARNING

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Participants

14 participants (presentations & discussions from 10 countries, 5 continents)

+ 3 observers (CANP 3 Great Mekong Area)

Lively and rich discussion in the 4 final timeslots

June 3

June 4

Outcomes of the discussion

3 keywords were explored in small groups and/or large group

Language

Artefacts

Mathematical tasks

Language

The agreed proposal was to prepare a table comparing the different names/actions used locally to describe:

Whole numbers

Actions related to place value

Whole numbers role in fractions

The table was already filled with some examples from the countries of the participants.

Possible extension involving participants from other WG?

Artefacts
(both traditional and ICTs)

Two consecutive small group discussions.

Need to clarify the terminology:

what is a representation?

what is a model?

what is an artefact?

what is a tool?

…..

Artefacts
(both traditional and ICTs)

Need to clarify the intention:

Introduce flexibility between different modes of representation

Make mathematics more familiar

Promote insight

Address basic skill acquisition

Reconstruct (with future teachers) the basis of WNA

The importance of teacher's guidance.

Artefacts
(both traditional and ICTs)

The importance of mathematics/mathematical work in choosing/building a model, an artefact and so on

The importance of clarifying the intention:

To explore

To solve

To exemplify

To define

To prove

….

Artefacts
(both traditional and ICTs)

The importance of persevere in doing maths.

The importance of cognitively demanding tasks wiith artefacts.

The importance of teacher preparation

Mathematical tasks (large group)

Real world objects, operation, experiences
    to connect real world and mathematics
Mathematics
    Successor/predecessors (addition/subtraction)
    the structure of N (0,1,2,3, …) compared with the structure of the operator space (+1, +2, + 3, ….)
Cultural conventions
    where to stop in the first grade?
    Number line
    Number names

Conclusion

All the participants have expressed the willingness to continue to work collectively and to collaborate with the co-leaders.