

Subject Matter Knowledge: Sources and tools for Teacher Education

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Knowing Differently

Discussion Question 1

See the following problem:

$$\begin{array}{r} 0.3 \\ \times 0.7 \\ \hline 0.21 \end{array}$$

$$\begin{array}{r} 0.3 \\ + 0.7 \\ \hline 1.0 \end{array}$$

Explain why the number of places after decimal point are different in both the above examples?

What teachers need to know?

Discussion Q 2

Which of the following method can be used for multiplication of any two whole numbers-

$$\begin{array}{r} 35 \\ \times 25 \\ \hline 125 \\ + 75 \\ \hline 875 \end{array}$$

$$\begin{array}{r} 35 \\ \times 25 \\ \hline 175 \\ + 700 \\ \hline 875 \end{array}$$

$$\begin{array}{r} 35 \\ \times 25 \\ \hline 25 \\ + 150 \\ + 100 \\ + \underline{600} \\ \hline 875 \end{array}$$

What teachers need to know?

Do they need to know more Mathematics
or to know Mathematics differently?

Subject Matter Knowledge

Mathematical Knowledge required for teaching is also known as Subject Matter knowledge (SMK)

Worksheet 1

Developing SMK

- Does pre-service Teacher Education programmes address acquisition of this knowledge?
- What are the sources of SMK for in-service teachers

Tools for teacher Education

Classroom Snapshot # 1

Classroom Snapshot # 2

Classroom scenarios

- Teacher participation
- Sensitise teachers towards students views
- An opportunity to learn from other teachers' teaching
- Reflection
- Circular in action

Tools for Teacher Education

Using Students' work in teacher education programmes

Resources for SMK

- Students' errors
- Students have alternative ideas – asking reasons for their actions enriches teachers knowledge
- Learning multiple approaches to solve/understand the problems
- Discussing your classroom experiences with other teachers
- Reflection on their own teaching

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