

3. Researcher's Comments (English)

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The first minute of the lesson, as students continue to filter into the room, is considered to be non-mathematical activity. Non-mathematical activity accounted for two percent of the lesson time, on average, in the Netherlands (Hiebert et al., 2003, *Teaching Mathematics in Seven Countries: Results from the TIMSS 1999 Video Study* [hereafter Video Report], figure 3.2).

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At this point students take out materials and begin to work on their study plans. Because students know their long-term assignment (i.e., to finish the chapter by the end of the week), no instruction is necessary for work to begin. A large number of problems (151) are considered to be "open," in order to accommodate students' varied pace as they work through the chapter.

Several of the problems assigned are set in a real-life context. These problems include:

- A roll of wallpaper is 50 cm wide. You always cut a roll in strips that are 15 cm longer than the height of the room. How much excess do you cut (in square cm)?
- What is the surface area of a strip of wallpaper for a room that is 240 cm in height?
- The surface area of a strip of wallpaper for a room that is h cm high can be calculated in various ways. Which equations below are correct?
 - A. $\text{Surface} = 750 + 50h$;
 - B. $\text{Surface} = 50 \times (15 + h)$;
 - C. $\text{Surface} = 800h$;
 - D. $\text{Surface} = 50 + 15h$.
- Calculate with the correct equations the surface area of a strip for a room that is 265 cm in height.

The use of real-life connections within problems was relatively frequent in the Dutch data set (42% of problems, Video Report, figure 5.1).

The problems on which students are working are intended to be worked on as homework as well. Across the Dutch data set, there were on average 10 problems begun in class to be completed as homework and 10 minutes were spent on those problems (Video Report, table 3.8).

The assigned problems are considered to be a mix of repeating previously learned procedures and something other than repeating procedures. On average, 12% of private work time per Dutch lesson was spent doing something other than repeating procedures, or was a mix of repeating and something other than repeating (Video Report, figure 5.13).

The time spent working privately on this set of problems (84% of the lesson) is

considered working on new material. On average, 32% of time per Dutch lesson was spent on new material (Video Report, figure 3.8).

Roughly 10 minutes of this 45-minute lesson (22%) is characterized by public interaction. The remainder of the time (78%) is spent privately, with students working individually. On average across the Dutch lessons, 44% of lesson time was public and 55% was private (Video Report, table 3.6). It was common for Dutch students to work individually during periods of private interaction. Individual work accounted for 90% of private work time per lesson on average (Video Report, figure 3.10).

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There are six shifts between public and private interaction in this lesson. Across the Dutch data set, there were on average three shifts per lesson (Video Report, table 3.7).

The lesson ends without a public discussion of the problems students were assigned to work on. It was common in Dutch lessons not to publicly discuss the answers to problems assigned as a set ("concurrent problems"). Answers to only 16% of the concurrent problems per lesson were shared publicly in the Dutch data set (Video Report, figure 5.7).