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to hand, and also to understand their professional literature. Descriptions of 'planned' reading tasks are not numerous, but appear of interest and potential value (e.g. readings of extracts from Laplace for students at the Paris Ecole des Ponts et Chaussées, a chapter of Volterra for biologists at Orsay).

### 3.7. *Examinations, assessment and control*

In many cases examinations supply the principal motivation for students (although, as we have indicated in Section 2.5.1., this need not necessarily be the case). If the examination is outside the lecturer's control (as in Florida, and even more in the preparatory classes for the 'grandes écoles' in France), then it also provides motivation for him. Therefore, the questions 'Why?' and 'How?' should not be asked of teaching alone, but must also be asked of evaluation and assessment. If the teaching of mathematical modelling is a primary goal, then this goal is unlikely to be attained, if all that is required to pass the examination is memory of a ragbag of techniques applied in stock, purely mathematical situations. On the whole examinations tend to freeze courses, and militate against such innovations as, for example, the introduction of computers, mathematical modelling, and 'planned' reading. On the other hand, all of these innovations can be effectively examined, and examples can be given. However, their assessment is extremely time-consuming and the large numbers of students involved in service courses present particular difficulties.

How, then are we to use examinations and assessment as a means for *improving* teaching and learning? What desirable changes can be made to entrance examinations or to national examinations? Are there forms of continuous assessment which enable teachers/students to monitor the assimilation of the mathematics they teach/learn? Can this be done within the short time allocated to service teaching? Are there still examinations which contribute little and might be better abandoned? Examples of good practice will be welcomed.

## 4. CALL FOR PAPERS

In this discussion document it has been possible only briefly to indicate some questions of great interest and concern. The next step is to take a selection of these and to delve into them more deeply, to flesh arguments out with examples taken from current practice, to examine philosophical and pedagogical points more critically, to report the results of relevant research. The planning committee for the study would very much welcome papers which so develop points made in this paper, and which, in their turn, could form the bases of discussions in Udine in April, 1987. Such papers would be welcomed from all concerned with service teaching, mathematicians, specialists in other disciplines, students, recent students and employers.