This paper reports findings from study on students discourse in a graphical milieu from PISA 2003. This was a follow up to analysis of some items containing graphics done for 8 countries where it was found that response rate for questions requiring explanatory communication was relatively low for a paper and pen environment as well as in an environment allowing collaboration and cooperation among students.

STUDENTS’ RESPONSES

In an analysis of PISA item Robberies using the double digit code, it was observed that most students’ solution was of everyday discourse while solutions that contain element of mathematics concept and discourse were very few (see fig 2 below).

The solutions that scored full credit displayed subject knowledge at various levels, while partial scores did not follow up with appropriate arguments and mostly included use of everyday language (OECD, 2009). Some responses from video observations suggested that students were familiar with context but lacked conceptual arguments e.g. “…it is not a reasonable interpretation of the diagram…this is a classical misleading diagram…” This solution yielded only partial credit.

Conclusion

Since no clear advantage was manifest countries perceived to have epistemological advantage, more questions were raised on the merits and application of mathematical learning theories. From the results it is claimed that variation in response partly depended on the manipulation tool or discourse required for the graphical artefacts.

Reference

OECD (2009) Take the Test: Sample Questions from OECD’s PISA Assessments
OECD, Paris.