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CSRI: Effects on the Orchestration of Writing Process and its Relationship with Text Quality

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Scientific Report

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Objectives

This Short Term Scientific Mission involved a four way meeting between Raquel Fidalgo (University of Leon, Spain), Gert Rijlaarsdam (University of Amsterdam), Huub van den Bergh (University of Utrecht), and myself (Nottingham Trent University, UK). We came together to discuss data from an intervention study exploring the effects of strategy-focussed writing instruction planned collectively by all parties and conducted under the guidance of Fidalgo in Spain. Fidalgo and Torrance have collaborated extensively in the past. Collaboration with the Amsterdam / Utrecht team is a new venture.

Collectively we had the following objectives

- Analyse and draw conclusions from the data
- Discuss theoretical and practical implications of the findings
- Plan write up and dissemination

My personal objectives, in addition to these were

- To learn about the use of multilevel modelling techniques as an alternative to ANOVA methods for analysing the effects of intervention in pre-post designs with control groups.
- To develop my understanding of educationally-focussed writing research, drawing on the expertise of other participants
- To allow face to face discussion with Fidalgo, after extensive previous email collaboration.

Strategy

We combined individual work with extensive group discussion. For two of the days of my visit a central focus was an extended tutorial session delivered by van den Burgh during which we analysed data from the study.

The intervention study

The intervention study that we discussed was planned and conducted specifically with this STSM in mind (i.e. we started from position that we were going to meet to discuss data from a study at the STSM, and then designed the study on this basis). The aim of the research was to explore which components of Cognitive Self Regulation Instruction (CSRI) are effective. The rationale, in brief summary, was as follows: CSRI involves four components, teacher modelling of effective writing strategies, declarative teaching about these strategies, student emulation in pairs, and individual student emulation. Our previous studies have indicated that when combined these components result in substantial improvements in sixth grade students writing. Our aim was to explore whether all components are essential.

The study involved a complex lagged and then cross-panel design. In the first phase two groups of students received each of the four CSRI components, in the order indicated above, with the intervention lagging one component behind in the second group. The third group was a normal curriculum control. At intervals corresponding to the end of each component all three groups were tested. In the second phase the first two groups received normal curriculum instruction and the third group received the same four components, but focussing on a different textual genre. In all this yielded writing-ability scores at eleven different time points for each of three groups of students.

Findings from the study suggest (a) clear benefits for CSRI (as found previously) and (b) clear and very substantial benefits just for the initial modelling component. This may suggest that, at least for sixth grade students in Spanish schools, teacher modelling of explicit cognitive strategies is all that is needed to see improvement in text quality.

STSM outcomes

During the STSM we managed to

1. Analyse data from the study. As can be seen, the study is complex and benefits from methods that go beyond traditional ANOVA approaches. The multilevel modelling methods introduced by van den Bergh allow assumptions about equal growth in all students to be relaxed and, importantly, a model-fitting approach to exploring the data that makes drawing inferences much more straightforward than would be the case if we were to rely on multiple pairwise contrasts.
2. We discussed in detail, and reached agreement, about the theoretical implications of the findings.
3. We developed a dissemination strategy, involving both a main paper and papers drawing on various other dependent variables collected during the study.
4. We discussed analysis of writing timecourse data, again using multilevel methods and planned future analyses of existing data.
5. Analysed and planned dissemination of findings from a previous intervention study (Fidalgo and Torrance).

On a personal level I managed to gain sufficient confidence with multilevel methods to use them in my own research.

Acknowledgements

I am very grateful to our hosts in Amsterdam for making this STSM possible, for the research team in Leon for putting so much time and effort into collecting the data, and for all present at the meeting for sharing their expertise with me.

Mark Torrance, 30/06/2010