Chapter 2.01.24

Supporting Children in Improving Their Presentation of School Reports

Hans van der Meij

Students from all school levels in the Netherlands must write reports as the outcome from an inquiry (usually on the internet). In elementary schools reports are made for language as well as for history, biology, geography and the like. There tends to be very little teacher guidance and guidelines for doing so. The children can often select a topic of their own choice and they are expected to work on their own and at home.

In the absence of clear guidelines, reports vary considerably in quality, both for content and presentation. This study set out to advance a set of criteria for presentation and to train children in their application. It did so by engaging children in a hands-on training for developing their knowledge and skills on formatting their report. During the training the children worked independently with a tutorial about Word’s formatting options. The tutorial acquainted the children with the following concepts: paragraphs, enumerations, citations, headings and a table of contents. These concepts were explained in a just-in-time fashion, namely immediately before the instructions on how to format a paragraph, enumeration and so on. Unlike the fancy stuff that children typically employ to spice up their reports (e.g. various colors, fonts, font sizes and pictures), the formatting guidelines in the tutorial concentrate on their functional nature. Paragraph formatting helps identify these as such, headings are formatted so that they appear in an automatically created table of contents and so on.

One of the tutorials in the study paid special attention to student motivation by including a virtual person, a pedagogical agent (PA) that shared motivation and feelings with the user. The PA in that tutorial was presented as a boy from the same age as the target group. On various places in the tutorial the PA visually and verbally expressed his feelings and emotions about task progress. In a recent study with
elementary school favourable effects of the PA were found for motivation after training (i.e. perceived relevance and self-efficacy beliefs) as well as for presentation skills (Van der Meij, Op de Weegh, & Weber, 2009).

The present study examines Clark and Choi’s (2005) argument that PAs can tax the user beyond a level that is functional. Their complexity claim is studied by having an audience with low reading skills process the PA tutorial that was successful in the earlier study. The tested hypothesis is that this audience needs to muster all its reading skills to process the basic instructions and that, consequently, the PA distracts. The possible negative effects of the PA should be reflected in a higher cognitive load and lower motivation and learning when compared with a tutorial without PA.

Method

Participants

The 40 participants (mean age 11 years and 10 months) of grades 5 and 6 came from three different classrooms from an elementary school. This public school has a large population of disadvantaged children. Special governmental funding helps reduce the teacher-pupil ratio in these schools. Because the language skills of these children are often one or two years lower than those of their counterparts in regular schools, the funding is also used for additional language lessons. Participants were randomly distributed over the two conditions.

Procedure

One week before training users completed a motivation questionnaire (answers were given on a 10-point Likert scale with a lower score indicating lower processing demands) and a hands-on pretest for the to-be-trained tasks. Training took place in a computer room. Users were asked to work on their own using only the tutorial for support. During training users regularly answered questions about cognitive load (‘I found the task difficult’ — answers were given on a 7-point Likert scale with a lower score indicating lower processing demands). Maximum training time was 2 hours. Immediately after training users answered a motivation questionnaire and completed a post-test on trained tasks in hands-on fashion without access to the tutorial. Three weeks later users completed a retention test.

Data Analysis

The study is experimental with a control and experimental (PA) condition. Data are analysed with ANOVAs. Tests for predicted effects are one-sided with alpha set at 0.5. For effect size Cohen’s d statistic is reported.