THE EFFECT OF THE APPLICATION OF PREDEFINED MESSAGES ON COLLABORATIVE PROBLEM SOLVING BEHAVIOUR IN A COMPUTER-BASED TEST ENVIRONMENT

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Collaborative Problem Solving (ColPS) is one of the skills which are essential for a productive employee in the 21st century (Binkley et al., 2012). To follow its development efficiently, technology-based testing can be a reasonable choice from many aspects. However, we are faced with many methodological problems and open questions in this case. For instance, when using automating coding, which is one of the greatest advantages of computer-based testing, the only option so far is to restrict the dialogue to the exchange of predefined messages. This method has become widely applied in ColPS measurement tools (Hsieh & O'Neil, 2002; Krkovic et al, 2016; OECD, 2013; Rosen & Foltz, 2014). Nonetheless, the questions of how this kind of determined communication affects achievement and whether this communication can be treated as valid and equal to real, non-restricted dialogue has not been investigated so far. In this comparative study we (1) examine whether giving the option of open chat in addition to exchanging predefined messages influences problem solving achievement; (2) analyse the content of open chat to identify if there are communicational aspects which cannot be replaced by predefined messages (3) explore whether it is possible to create a user-friendly ColPS test context which minimizes the need of using open chat. Fourteen year old pupils participate in our study. We appl Human-to-Human design, so pupils need to collaborate in dyads via the eDia online diagnostic platform. Participants need to work on dynamic problem solving tasks based on the MicroDYN model (Greiff & Funke, 2010; Greiff et al., 2013). These tasks have already been adapted to the eDia system in Hungarian (Molnar et al., 2017). By hiding different variables from given members of the group and adding numerous options of communication, we have made the items suitable for collaborative instead of individual problem solving. The resulting ColPS tasks are interdependent, and participants can only solve them by collaboration. To avoid cognitive overload, first an individual test version is registered. Then pupils solve two equivalent ColPS tests (A and B). In one condition, they can only talk through predefined messages and other function buttons serving communication. In the other condition, in addition to these they also have the opportunity to use open chat. Using a mixed design, we the halve sample and register the two tests in opposite condition orders. If performances and the communicational patterns in to the two conditions do not differ significantly, we justify empirically that the exchange of predefined messages is a valid way for assessing ColPS competence. Also, we provide a new ColPS testing platform which eliminates the need of open chat for collaboration. However, if our results indicate great differences between the two conditions, we can suggest the reconsideration of applying predefined messages as the validity of this method will be shown to be highly questionable.