Worksheet 1.1

Guide for evaluating research: 12 important questions

Consider standard methodological issues
1 What method was used (experiment, questionnaire, observation, interview, case study, correlation, etc)? Check for strengths and weaknesses of the method in general.

Consider reliability
2 How reliable are the measurement instruments used? For example, with experiments, check how the dependent variable was measured; for questionnaires, consider whether the questions are an accurate way to collect responses from participants?
3 Was more than one researcher or observer used? Do we know if their judgements are similar?
4 Was the research done more than once with participants? Is this possible? Is the study replicable?

Consider internal validity
5 Did the researchers really measure what they wanted to measure?
6 Did the researchers try to eliminate extraneous variables or could factors such as time of day interfere with the results?
7 Are there demand characteristics: did participants know what the nature of the research was, and could they have changed their behaviour according to what they think the researcher was interested in?
8 Is there any possibility for researcher bias: did the way researchers conducted the research help them get the results they wanted?

Consider external validity
9 Was the sample used in the study appropriate? Can we generalize from this sample to the intended population? Consider culture and gender.
10 Was the location of the research artificial? Did the location affect the results obtained and can we generalize to a more natural setting?

Consider usefulness
11 Does the research tell us something useful or important? Does it add to our understanding of human behaviour or have practical applications?
Consider ethics
12 Is there any violation of BPS/APA guidelines? Can you justify any ethical concerns you have?

Use the checklist above to evaluate the two experiments summarized below.

How to detect a lie (Jeffry et al., 2005)
These researchers suggest that the physiological measures that are sometimes used to detect lies are not efficient enough and that there may be other ways to detect a lie. They conducted two experiments – the first to detect how long lying takes and if response times can be used to distinguish between people telling lies and people telling the truth, and the second to see how long it takes for a person to make the decision to lie.

Experiment 1
In the first experiment, 87 undergraduate psychology students (54 female, 12 African–American, the rest European Americans) filled out the Social Skills Inventory (SSI) to gather information about basic social skills. They were told what personal information they would be asked about during the lie tests so that thinking time would not be necessary. Questions included basic yes/no and open-ended answer types, including some possibly embarrassing information. The questions were presented in a different order to different participants, who were asked to lie in response to specific items. Answers were recorded on a computer and response times were measured by the software used. Participants were instructed not to clear their throats or make noises like ‘ah’ or ‘um’ as these would trigger the response time measurement. The room was quiet and the examiner was not aware of which items the participant had been told to lie about.

The experimenters found that for yes/no questions, response times were longer when the participant lied, with an average difference of approximately 230 ms. For open-ended questions, the lie responses were not clearly different overall from the truthful ones. Researchers were able to use response times to questions to accurately identify truth-tellers and liars between 66% and 72% of the time. They found that there was no significant relationship between this and the social skills of the participants although when information was potentially embarrassing, socially skilled participants were able to lie faster.

The researchers explain their results in terms of a cognitive model whereby telling the truth requires a person to access their long-term memory and then report it, while telling a lie also requires both the decision to lie and the construction of the lie.

Experiment 2
The second experiment compared response times within subjects rather than between them, testing whether an individual person takes longer to lie than to tell the truth. This time, 58 undergraduate psychology students (32 women, 10 African–American) were randomly assigned to lie either about
what they did on Saturday night or about their employment history. If subjects were uncomfortable telling the truth about either of these, they were told to lie plausibly and tell the experimenter afterwards which items were lies.

Participants took significantly longer to respond to questions with a lie than with the truth. Open-ended questions took longest, and the researchers were able to determine that the decision to lie adds approximately 352 ms to the time taken to answer the question.

Having found that this technology is more accurate than the polygraph in the same situation, the researchers intend that the software be used to assist employers during recruitment by identifying when job applicants are lying. However, they note that there are still too many false negatives (i.e. the software fails to identify a lie).

Reference