Critical Thinking in IB Psychology

**GRAVE**

**Generalizability:** can findings from a study be transferred to another population? Is that even the intention? This is rarely a ‘yes’ ‘no’ answer. It requires consideration of the sample characteristics. Generalizability refers to the extent to which results from a research study can be used to explain behaviour of people other than those who took part in the study. For example, if research into motivation is run on a sample of 20 DP1 students in an international school in Switzerland, we cannot automatically assume the results can be applied to all students of various ages, everywhere, because there may be important differences between those who took part in the study and those who did not. However, perhaps those results may be transferable to other DP1 students in other Swiss international schools.

**Reliable:** are findings from this study consistent? How consistently an experimental test, questionnaire, or observational procedure measures. Reliability relates to consistency in measurement, both in the study, and outside the study in different environments. Internal reliability relates to how consistently a method measures within itself.

**Applicability:** refers to whether results from a research study can actually be *useful* in a real life setting, either in understanding behaviour or in changing behaviour. For example, research findings into why people start smoking might be applied in developing prevention strategies to stop people from smoking in the first place. Applicability is different from generalizability. Whilst generalizability depends on the diversity of the people in the study, applicability depends on the relevance of the study to a certain situation.

**Validity:**

**Internal validity** This measure of validity refers to the way data is collected/analysed within the study itself, in other words, whether the researchers designed things to make sure they were actually measuring what they aimed to measure. For example, if a researcher wants to measure embarrassment, and they decide to count how many people turn red as a way of deciding who is embarrassed, they will miss out all the people who are embarrassed but don’t turn red, and they might accidentally count people who are not embarrassed but just sunburnt. Their results will lack internal validity because they did not properly define or measure this variable.

**External validity** refers to the extent to which the environment can impact results. If researchers are interested in how school pupils remember facts in a school setting, they should give the memory test in a school. If they put the participant into an fMRI machine (a type of brain scanner) and give a memory test, this is not really a natural setting in which to test memory. The results may lack **ecological validity** because they may have been affected by the participant’s response to the unnatural environment and therefore not reflect their “true” memory. There are several types of validity – please visit ‘Reliability & Validity’ slides to learn more.

In experimental methodology, psychologists manipulate an independent variable and measure a dependent variable, while trying to control extraneous variables. There are two main types of experiment:

* “Field experiments” take place in a place where the behaviour would be likely to occur naturally (not actual fields!)
* “Laboratory experiments” happen in controlled environments (not necessarily science labs, but perhaps university offices).

Therefore usually field experiments have higher **ecological validity** because the behaviour is more natural, but lower **internal validity** because it is difficult to control all the extraneous variables. Lab experiments are the opposite: they usually have **high internal validity** and **lower ecological validity**.

**Ethics:** are there any specific ethical rights that may have been violated or compromised in this study? Are there any ethical rights or considerations that need to be kept in mind in this study, or after it has been completed, or with how the findings are used?

**MAGEC**

**Methodological**: which method was used in the study? Was it qualitative or quantitative? Was the method used in isolation or in conjunction with another method (triangulation)? What are strengths and limitations to this study?

**Alternative explanation:** is there any other way the findings can be interpreted? This is not a creative writing exercise, but a chance for you to show that you understand that other variables may have influenced the result.

**Gender:** considerations must be reviewed in research. Males and females may think/behave/respond differently due to their different biology and the way they have been socialized (i.e. the things they have learnt through society’s treatment of males and females). In a small mixed-sex sample, gender could be a confounding variable and make it difficult to interpret the overall results. For this reason, some studies use all-male or all-female samples, however, researchers must then be cautious in generalizing to the opposite sex.

**Ethics**: are there any specific ethical rights that may have been violated or compromised in this study? Are there any ethical rights or considerations that need to be kept in mind in this study, or after it has been completed, or with how the findings are used?

**Culture:** is there any cross cultural support for findings? Cross cultural support is useful for external reliability and external validity. Consider - is the study emic or etic in approach?

**TEACUP (theory)**

**Testable:** is the theory testable? Does it generate a lot of support/evidence? How is the theory testable –which method?

**Evidence:** what is the nature of evidence for this theory? Is there a lot of evidence for the theory? Cross cultural evidence?

**Application:** is the theory applied anywhere in a real life situation? For example, some social theories have been applied in real life setting to increase pro social behaviour or decrease anti social behaviour.

**Constructs:** are variables difficult/clear to measure in this theory?

**Unbiased:** are findings for the theory biased in anyway? Was gender/culture represented?

**Predictive:** does this theory predict anything about behaviour that may be useful in understanding future events?