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| **Learning Table 2: Experiments** | | | |
| The common features of an experiment include:   * The allocation of participants to either a control or experimental group. * The manipulation of an independent variable. * The measurement of a dependent variable. | | | |
| **Laboratory Experiments** | | **Field Experiments** | |
| Laboratory experiments are experiments that take place in a highly controlled, artificial setting. They involve the strict control over extraneous variables and therefore result in highly valid data being yielded. | | Field experiments are experiments that take place in the participants natural environment. They are more reflective of a realistic real life setting, however the internal validity of these studies may be weakened due to less control over extraneous variables. | |
| **Advantages** | **Disadvantages** | **Advantages** | **Disadvantages** |
| * Positivists favour lab experiments in principle because they achieve their main goal of reliability. * They also involve careful control over experimental conditions which means the results are easily replicated and so reliability to be established. * Lab experiments also involve experimenter detachment which would result in objective results being collected. | * However, positivists also point out it is sometimes impossible or unethical to control the variables. * Lab experiments occur on a small scale and therefore may not be representative. * Interpretivists reject lab experiments because they fail to achieve their main goal of validity. * It is an artificial situation producing unnatural behaviour. * A major flaw of laboratory experiments is the Hawthorne Effect. This refers to participants being aware that they are taking part in research (even if they don’t know the aim) and changing their behaviour in some way. They may deliberately sabotage the experiment or the very presence of an observer may produce an effect in behaviour. | * Interpretivists favour field experiments because they are more realistic and therefore valid. | * However, positivists argue that the more realistic the situation, the less control we have over extraneous variables that may be effecting the experiment. * Participants are often unaware they are taking part in a field experiment. Therefore several ethical issues are breached. For example, deception, lack of informed consent and right to withdraw. |
| **The Comparative Method** | | | |
| The comparative method rests on the same principles as the experiment and is an alternative to it. However, instead of setting up an artificial experiment or situation, the researcher collects data about different societies or social groups in the real world. The researcher then compared one society to another or one group to another in an attempt to identify the conditions that are present in one society but lacking in the other, as a way to explain the causes of some social event. This approach is most commonly used by positivists and is concerned with trying to isolate and identify the causes of social events and behaviour. | | | |

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| **Methods in Context: Using Experiments to Study Education** | | | |
| **Laboratory Experiments** | | **Field Experiments** | |
| **PRACTICAL** | ☹ Schools are large complex institutions in which many variables may affect teacher expectations. For example, their expectations may be influenced by a wide range of variables such as class size, streaming, type of school etc. In practice, it is impossible even to identify let alone control all the variables that might exert an influence on teachers’ expectations. | **PRACTICAL** | ☹ Schools are large complex institutions in which many variables may affect teacher expectations. For example, their expectations may be influenced by a wide range of variables such as class size, streaming, type of school etc. In practice, it is impossible even to identify let alone control all the variables that might exert an influence on teachers’ expectations. |
| **ETHICAL** | ☹ Some research such has used real pupils which raise ethical concerns. Young people’s vulnerability and their more limited ability to understand what is happening mean that there are greater problems of deception, lack of informed consent and psychological damage. | **ETHICAL** | ☹ Field experiments also pose ethical issues. For example, if real pupils are used they may be disadvantages one group of pupils. For example, testing the effectiveness of a new reading scheme may result in a group of pupils receiving an inadequate reading scheme and therefore putting them at a disadvantage in something as important as the skill of reading. |
| **RELIABILITY** | ☺ Lab experiments often involve clear manipulation of an IV whilst measuring an effect on the DV. This allows research to be replicated and reliability to be established. | **RELIABILITY** | ☺ Field experiments often involve clear manipulation of an IV whilst measuring an effect on the DV. This allows research to be replicated (Rosenthal and Jacobson’s research has been replicated 242 times). However because of the realistic nature of field experiments, they are not as reliable as lab experiments. |
| **VALIDITY** | ☺ Lab experiments involve strong control over extraneous variables which allows this research to be high in internal validity. | **VALIDITY** | ☺ Field experiments cannot exert the same amount of control over extraneous variables and so are somewhat lower in internal validity. |
| **EXAMPLE** | Mason (1973) looked at whether negative or positive expectations had the greater effect. Teachers were given positive, negative and neutral reports on a pupil. The teachers then observed video recording of the pupil taking a test, watching to see if any errors were made. Finally, they were asked to predict the pupils end of year attainment. Mason found that negative reports had a much greater impact than positive ones on the teachers’ expectations. | **EXAMPLE** | Pygmalion in the Classroom (1968) by Rosenthal and Jacobson wanted to test the hypothesis that teacher expectations had an important effect on pupil’s academic performance. The researchers identified 20% of pupils who were likely to make rapid progress in the next year. The pupils were chosen at random. They found that on average all pupils gained an average of 8 IQ points, however this 20% identified gained an average of 12. This shows the self-fulfilling prophecy in action in Education. |
| **REPRES’NESS** | ☹ Experiments are only ever carried out on a small selection of participants, therefore findings are often not representative of the target population. | **REPRES’NESS** | ☹ Experiments are only ever carried out on a small selection of participants, therefore findings are often not representative of the target population. |
| **THEORETICAL** | *What do positivists and interpretivists think of this method?* | **THEORETICAL** | *What do positivists and interpretivists think of this method?* |