

## Teaching Guide

### Chapter 10: Approaches to researching behaviour

#### Topic map

Section number and name	Learning outcome	Number of hours (suggested)	Relevant material
10.1 Introduction to research methods in psychology	A clear basic understanding of the scope and limitations of the different types of quantitative and qualitative methods used in psychology.	HL: 60 for all topics* SL: 20 for all topics*	Activity 10.1
10.2 Elements of researching behaviour	The systematic ways in which investigations are framed into a series of coherent and logical stages, apropos that which is being researched.	*These represent the total number of hours used in methodology as recommended by the IB. Typically, you will have used most of them already as you presented the methodology in the context and content of the preceding chapters.	
10.3 Analysing data	Data analysis involves the researcher processing the data (which can exist in many different forms) in a way that suits the possible discovery of trends and relationships.		Figures 10.1–10.3 Table 10.1
10.4 Evaluating research	This involves assessing the evidence used in the research in terms of validity, credibility and possibilities of bias.		
10.5 Drawing conclusions	Good practice in psychology considers not only the basis on which conclusions may be drawn, but how far the study can be made more robust through replication and triangulation. It is also likely to consider the degree that the findings of the study can be generalised/transferred.		Self-assessment questions 10.1 (on whole chapter)  Short-answer questions at the end of the chapter (on whole chapter)

Approaches to researching behaviour form the final chapter of the coursebook. This position is due to their being directly examined in Paper 3, the last examination paper. Paper 3 is taken by HL students only, and forms 20% of the HL final IB assessment.

However, approaches to researching behaviour form a vital, integral part of the course, without which psychology would have little or no credibility. Methods used to study behaviour, including the design of the investigation, the methods of analysis, the drawing of conclusions and the critical analysis of the results, are essential elements within the theories and research studies occurring throughout the chapter's text. Suitable responses to exam questions in Papers 1 and 2, as well as Paper 3, will tend to incorporate research methods and critical analysis of their use in various depths. This applies equally to HL and SL students. For this reason, SL students as well as HL students will need to be familiar with the content of this chapter.

As a teacher, you will find yourself constantly dealing with research methods as your students encounter the materials in their progress through the course. Your students will have also grappled with research designs, hypotheses, methods of analysis and evaluation of evidence in the experimental investigation that forms their internal assessment (IA).

Teachers vary in the rate that they feed in the methodology as they progress through the topics. For example, if one of the first pieces of research encountered by the class is Bandura et al.'s (1961) 'Bobo' doll experimental study on social learning theory, you will almost certainly emphasise the experimental nature of the study, and that it uses statistical data obtained through observation. You may want to use this study as an opportunity to introduce independent and dependent variables. However, at this early stage in the course you are unlikely to present every detailed aspect of the methodology used in this study. You will probably allow students to gradually build up their repertoire of methodological items, delaying the possible over-use of terms such as true laboratory experiment or quasi-experiment, or the merits and limitations of independent measures and repeated measures, until the student has advanced further into the course. Of course, Bandura's study could – and should – be revisited later to exemplify and reinforce the more complex methodological dimensions.

This final chapter in the coursebook, directly examined at HL only, is short. Its brevity should not deceive the students. The tools that are used by researchers in psychology form its content. The chapter exemplifies their application, making references to studies already encountered. As the final chapter of the coursebook, it draws together the methods used (which should be familiar to the students), adding to them where necessary, and presenting the whole as a coherent framework for investigation in psychology.

## 10.1 Introduction to research methods in psychology

### Overview

This topic seeks to match the behaviour under investigation with the most suitable set of tools to research it, which may be quantitative, qualitative or both.

### Suggested activities

#### Possible starter

A worksheet, [Qualitative and quantitative data](#), on the Psychotron website introduces a series of research scenarios that require the student to consider whether each is more suited for a quantitative or qualitative approach. This item ideally would be tackled in pairs, with their recommendations discussed in class. The worksheet contains follow-up material suitable for an introductory homework task.

## Main lesson content

- A clear summary of the strengths and limits of quantitative and qualitative research methods is delivered in the video [AS Psychology qualitative and quantitative](#), on YouTube. It covers the ground systematically. The exercise suggested at the end of the presentation is suitable for other studies as well as Piliavin et al. (1969), which is referred to in that talk.
- The activity [Choosing the best method](#) on the IB Psychology InThinking website opens a variety of possibilities, some of which involve the whole class in weighing up the merits of the different approaches in the context of real-life investigations.
- Both Activity 10.1 and the Research Idea in the coursebook can be profitably used to review quantitative and qualitative methodologies in contexts that should already be well known to the students.

## Common misunderstandings and misconceptions

Quantitative data is often thought to be superior to qualitative data because it lends itself to mathematical analysis. However, content-rich and depth-laden narratives and descriptions of detailed personal experiences and feelings tend to be beyond the easy reach of quantitative methods, requiring different tools such as content analysis to interpret the data. In addition, not all studies are designed for the large number of participants necessary for statistical analysis.

Qualitative analysis is not a second-best option to be employed when quantification does not work. Rather, like quantitative analysis, it contains a set of tools specific to the handling of particular types of data.

## Supporting your students

The scaffolded structure of the worksheets in both the possible starter and the homework suggestion below break down the concepts so that they are accessible to a very wide range of ability levels.

## Challenging your students

The quantitative-based research of Deborah Tannen on how different genders communicate with each other, [Observations of conversations](#), is presented with follow-up exercises on the IB Psychology InThinking website. Students can suggest and discuss the ways that this research process might be enhanced by using qualitative methods, for example by interviewing a small sample of those that took part.

## Homework suggestion

- The worksheet, [Two descriptions of a person](#), on the Psychlotron website presents two types of data from the same individual, with a series of well-scaffolded exercises which enable the students to appreciate the strengths and limitations of quantitative and qualitative data.

## Cross-references with other topics

This topic is relevant to all other topics where quantitative and/or qualitative data is used to investigate theories and carry out research.

## 10.2 Elements of researching behaviour

### Overview

This topic closely considers the details of how the investigation should be structured in terms of the phenomenon being studied and the objective of the inquiry. The elements of researching behaviour include the research design, the hypotheses (if any), the independent and independent variables, the sampling techniques and the ethical considerations.

### Suggested activities

#### Possible starter

As this entire topic is likely to be taught towards the end of the programme, students should already have basic experience in researching behaviour from their course study materials and from their IA. At this stage, the aim of the starter can be to consolidate the terms and concepts already encountered, with view to further developments in these topics. One suggestion is [Binge drinking research](#) on the InThinking website, whose follow-up exercise also enables the student to discover the problems of operationalising particular variables under study. Another possibility is a closer focus on formulating research questions: there is a suitable supporting information/worksheet called [Research questions & aims](#) on the Psychlotron website.

#### Main lesson content

- [Designing research studies](#) on the Psychlotron website summarises key practical elements in researching behaviour. It also contains a series of follow-up exercises, including items that can stretch the inquiring student.
- The use of hypotheses in research is supported by the worksheet [Experimental hypotheses](#), on the Psychlotron website: questions 2 and 3 being suitable at this stage. A robust guide to [hypothesis writing](#) with special attention to the hypothesis's operational and directional aspects is found on the IB Psychology InThinking website. There is a downloadable worksheet, with a teacher-viewable set of possible responses.
- Although students should be experienced in handling independent and independent variables, these need to be operationalised: failure to do so is a common IA-examiner complaint. [Operationalizing variables](#) on the IB Psychology InThinking website supports this, with an 'Applying new skills' exercise that includes a teacher-viewable set of possible responses. Additional opportunities for students to explore operationalisation may be found on the resource/worksheet [Operational definitions](#) on the Psychlotron website.
- Some key issues in sampling are introduced in the video [Sampling](#) on the Psychology Hacked website. This can be followed up with the sampling sections II and III in the [Hypotheses and sampling quiz](#) on the InThinking website. Section III tackles sample bias. This whole item includes a downloadable worksheet, with a teacher-viewable set of possible responses.
- Of the many resources focusing on this dimension of psychological research, ethics could be introduced by feeding in the video-supported article on the Mental Floss website: [10 psychological experiments that could never happen today](#). Students should be able to consider this item more knowledgeably than at the beginning of the course. Aspects of ethics in psychology research are briefly reviewed on the video [Ethical guidelines for psychological research](#) on the Psych Exam Review website, and these can be followed up on the worksheet [Research methods: Ethical issues](#) on the Psychlotron website. It can be finally consolidated with the series of exercises on the IB Psychology InThinking website, [Judging ethics of research proposals](#), which presents a series of research scenarios for critical evaluation of the ethics involved.

## Common misunderstandings and misconceptions

Deciding whether a research proposal is ethically acceptable and therefore may be carried out is often difficult. The balance between society's need to understand human behaviour but protect the interests of the participants is a delicate one, whose weighing has tended to shift towards the latter over the last half-century. This point can help to place the research that students have viewed into a more ethically consistent framework.

## Supporting your students

The flowchart showing the experimental design called [Doing experiments](#) on the Psychlotron website should help students focus on its different stages. In addition, sampling is well scaffolded in the activity on the IB Psychology InThinking website, [Identify the sample](#).

In addition, reference could be made in class to the students' experiences of conducting their own research in their IA.

## Challenging your students

Students could review the video-supported material on [10 psychological experiments that could never happen today](#) (above), and then select any three studies and redesign them using the principles in this topic. They could present them to a class-constituted ethics committee, whose members would debate and report back as to whether their proposals are academically acceptable.

## Homework suggestion

- The InThinking worksheet, [Identify the sample](#) (above), should consolidate the understanding of students' relative scope and limitations, and also give them the opportunity to apply them critically.
- Most of the non-video resources listed above contain exercises suitable for homework purposes.

## Cross-references with other topics

This topic is relevant to all other topics, wherever research is used to investigate scenarios and relationships within the field of human behaviour.

## 10.3 Analysing data

### Overview

This topic considers various ways that the raw data collected in an investigation may be processed so that trends can be observed and their degree of significance may be judged.

Bear in mind that the only statistical calculations that are assessed as part of the course are those that the student uses in the IA investigation.

### Suggested activities

#### Possible starter

Are the relationships indicated in the raw data causal or correlational? The question is crucial for deciding which statistical tests should be used in the data analysis. This issue may be introduced and supported with the worksheet [Vita exercise](#). This activity uses a range of popular newspaper articles on Jon Mueller's webpage,

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[Correlation or causation](#). These provide considerable scope for class discussion. The problems of making this distinction in less clear-cut studies on this site should engage the more able students.

## Main lesson content

- The use of inductive content analysis is video-presented in the video [An inductive approach for qualitative analysis and examples of newspaper content analysis](#), available on YouTube. Teacher previewing for class suitability is strongly advised. Inductive content analysis is well supported in a one-lesson group activity on the IB Psychology InThinking website, [The race to nowhere](#).
- The principles of statistical testing in psychology are clearly video-presented in [AQA Psychology Year 2 research methods – inferential statistics](#) on YouTube. Despite the specification, they should fit IB requirements as well.
- The [Data-analysis quiz](#) on the InThinking website solidly reviews and supports the use of both descriptive and inferential statistics.
- The thought-provoking [Interpreting correlations](#) exercise on the Psychlotron website should help students to identify underlying relationships between the variables, as well as consider the possible presence of any additional variables that have not been considered within the study.

## Common misunderstandings and misconceptions

There are many types of content analysis, of which the inductive content analysis specified on the syllabus is just one. In addition, students need to be clear about which types of data are summarised by a bar chart, and which by a histogram. Furthermore, there are frequent errors when matching the form of the data to the specific inferential statistics that may be suitably applied.

## Supporting your students

Expect a considerable range of mathematical skills in the class. For those needing support in the use of inferential statistics, the well-scaffolded activity, [Statistical tests on data](#), on the Psychlotron website may be profitably used to consolidate skills and also as suitable preparation for the statistical skills applied in the IA.

## Challenging your students

Critically minded students should enjoy the [Third variable problem](#) worksheet on J. F. Mueller's website. This could also provide practice for critical assessment before students assess their own findings within their IA research project.

## Homework suggestion

- The worksheet on [Type 1 and Type 2 errors](#) on the Psychlotron website should support a critical approach to the interpretation of inferential statistics. It could also help the students to evaluate their own IA work in terms of Type 1/Type 2 error possibilities.

## Cross-references with other topics

This topic is relevant to all other topics, wherever research is used to investigate scenarios and relationships within the field of human behaviour.

## 10.4 Evaluating research

## 10.5 Drawing conclusions

### Overview

This purpose of these two sections is to present the criteria for assessing the evidence contained in a study's findings and its claims. They consider the possibilities of misinterpreting the data in drawing conclusions, and also judge the extent that the findings of the study resemble the real-world situation.

### Suggested activities

#### Possible starter

The video, [The hidden biases in WEIRD psychology research](#) (WEIRD is an acronym for Western Educated Industrialised, Rich and Democratic), on YouTube raises the all-embracing question of whether our current knowledge of human behaviour is restricted to the small minority of the world's population that satisfy all those criteria. Follow it up with another YouTube video: [This illusion might not work depending on where you're from](#), which supports the claim that the environment significantly affects the way that the brain processes information. You can then discuss how far the question in the first video is supported by the information in the second video.

#### Main lesson content

- The importance of reflexivity in perception is amusingly and yet poignantly presented in the video [Reflexivity in perception](#) on YouTube. Students can bear in mind the elephant analogy used in the video when drawing conclusions from their own IA research, or in evaluating the published research on the course. This can take the form of class discussion, especially if the IA is in progress or still fresh in their minds.
- The principles of reliability and validity in assessing research are clearly video-presented in [Revise psychology: Reliability and validity](#) on YouTube. Despite the A Level/AP specification, they should fit IB requirements as well. Bandura et al.'s study (1961) on social learning theory (Chapter 5) and Rosenhan's (1973) study on being sane in insane places (Chapter 6) are referred to, and they can be revisited in this context in follow-up class discussion.
- The exercise [Evaluating experiments](#) on the IB Psychology InThinking website, based on the fictitious study on how the consumption of alcoholic drink might affect the perception of physical attractiveness in a member of the opposite sex, should enable the students to apply the principles of this topic in assessing how far the findings of that study may be trusted. Please preview this material before the lesson to judge its suitability for your class. Please also ensure that the students are familiar with the information in the whole 'Evaluating experiments' exercise before starting this assignment.

### Common misunderstandings and misconceptions

These relatively small but very important topics use precise terminology that can easily be erroneously interchanged. Some terms, such as internal validity and credibility, generalisation and transferability are specific to either quantitative or qualitative investigative methods. Other terms, for example researcher bias and reflexivity, can be used with both.

## Supporting your students

Some students may find the terminology confusing. You could design a worksheet or a drag-and-drop exercise whereby students are given scrambled terms and definitions. They first have to match the term with the definition. Then they take the terms with the definitions and place them in one of three boxes, labelled Quantitative research, Qualitative research, and Quantitative and qualitative research.

## Challenging your students

- Able students should enjoy the Critical Thinking exercise in Section 10.5. It requires the application of the terminology and concepts in this section to consider the degree that both classical and more recent research may explain parallel phenomena in the world today.
- They can also investigate the claims of the study summarised in a popular article, [Your parents are correct, scholars report: studying pays off](#) on the Chronicle of Higher Education website, using the worksheet: [Assignment 12 \(Honors\)](#) from the J. F. Mueller website. Students may compare the popular article with the academic report of the same study by Stinebrickner and Stinebrickner (2007).

## Homework suggestion

- The [M&M fictitious study \(quiz\)](#) on the IB Psychology InThinking website goes through the steps in this chapter, including this topic. The structure is designed with Paper 3 requirements in mind. The final question: 'What is one possible implication of this study?' might be extended with 'What are the possible types of bias that could affect explaining the implication of this study?'

## Cross-references with other topics

This topic is relevant to all other topics, wherever research is used to investigate scenarios and relationships within the field of human behaviour.

## References

Bandura, A., Ross, D., and Ross, S. A. (1961). Transmission of aggression through imitation of aggressive models. *Journal of Abnormal and Social Psychology*; 63(3): 575–82.

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