Internal assessment

Purpose of internal assessment

Internal assessment is an integral part of the course and is compulsory for both SL and HL students. It enables students to demonstrate the application of their skills and knowledge, and to pursue their personal interests without the time limitations and other constraints that are associated with written examinations. The internal assessment should, as far as possible, be woven into normal classroom teaching and not be a separate activity conducted after the course has been taught.

The internal assessment requirements at SL and at HL are the same. Students will investigate a published study, theory or model relevant to their learning in psychology by conducting an experimental investigation and reporting the findings. The requirements will be explained in more detail in the internal assessment details.

Group work

Students are required to work as part of a group to plan and conduct the investigation. The research method, subjects and materials, as well as the operationalization of the Independent and Dependent Variables, will be the result of the group working together. Once the data has been generated the collaboration is complete. Each student will write up the report independently of other group members. The data will be analysed and conclusions drawn independently. Students should not discuss the results with other members of the group. Likewise, the evaluation should be carried out independently. While there will be some similarities (as the students are drawing on the same data), it is important that they are reminded of the requirements for academic honesty and the consequences of academic malpractice. The report must adhere to the ethical guidelines in all aspects.

The group must consist of a minimum of two students and a maximum of four students. SL and HL students may work together. Students may also choose to collaborate virtually with another student or students in other IB World Schools. Alternatively, students may work with another student who is not studying DP psychology. This may be a student studying a psychology course with another provider, or a student studying a related course such as an experimental science or social science course. Students may choose group members who share a common interest or they may join a group and then decide on an area for study within that group.

Assessing group work

Collaboration represents an authentic way of working in the field of research, but as it is difficult to assess a team member's contribution completely objectively, the reporting of the method will be awarded fewer marks than the other sections. A student's evaluation of the method (including protocols, participants and materials) is where a clear understanding of the exploration will be rewarded, as this is carried out independently of the group. It is expected that a student will point out the strengths as well as the limitations of the method as part of their evaluation—a good design will generate as much opportunity for comment as a less effective design, but it is anticipated that a student will only gain the higher marks for their evaluation if they are fully engaged in the thinking behind the design of the investigation.

The difference between collaboration and collusion must be made clear to all students.

Time allocation

Internal assessment is an integral part of the psychology course, contributing 25% to the final assessment at SL and 20% at HL. This weighting should be reflected in the time that is allocated to teaching the knowledge, skills and understanding required to undertake the work, as well as the total time allocated to carry out the work.

It is recommended that a total of approximately 20 hours of teaching time should be allocated to the work for both SL and HL students.

This should include time to:

- explain to students the requirements of the internal assessment task
- review the ethical guidelines for the course
- work on the internal assessment component and ask questions
- collaborate in groups
- consult with the groups (and individual students as necessary)
- review and monitor progress, checking authenticity.

Guidance and authenticity

The report submitted for internal assessment must be the student's own work. However, the teacher should play an important role during both the planning stage and the period when the student is working on the internally assessed work. It is the responsibility of the teacher to ensure that students are familiar with:

- the requirements of the type of work to be internally assessed
- the psychology course ethical guidelines and the IB guidelines on academic honesty
- the assessment criteria—students must understand that the work is being submitted for assessment and must address the criteria effectively.

Teachers and students must discuss the internally assessed work. Students should be encouraged to initiate discussions with the teacher to obtain advice and information, and students must not be penalized for seeking guidance. As part of the learning process, teachers should read and give advice to students on **one** draft of the work. The teacher should provide oral or written advice on how the work could be improved, but not edit the draft. The next version handed to the teacher must be the final version for submission.

Once a student has officially submitted the final version of the work it cannot be retracted. It is the teacher's responsibility to ensure that all students understand the basic meaning and significance of concepts that relate to academic honesty, especially authenticity and intellectual property. The requirement to confirm the authenticity of work applies to the work of all students, not just the sample work that will be submitted to the IB for the purpose of moderation. For further details refer to the IB publications *Academic honesty in the IB educational context*, *Diploma Programme: From principles into practice* and *General regulations: Diploma Programme*.

Authenticity may be checked by discussion with the student on the content of the work, and scrutiny of one or more of the following:

- the student's initial proposal
- the first draft of the written work
- the references cited
- the style of writing compared with other work known to be that of the student
- the analysis of the work by a web-based plagiarism detection service such as www.turnitin.com.

The same piece of work cannot be submitted to meet the requirements of both the internal assessment and the extended essay.

Requirements and recommendations

Approaches to research in the core covers some of the main methods students are likely to encounter during their studies in psychology, however, for the purposes of the internal assessment, students are required to work exclusively using the experimental method.

Choice of topic

The experiment is an opportunity for students to investigate an area of interest to them, to enrich their studies and stimulate their curiosity. The following points will serve as a guide to the choice of topic.

- The topic can be from any area of psychology.
- The theory or model on which the investigation is based must appear in a peer-reviewed publication.
- The link between the study or model used and the students' aims and objectives for their experiment must be made clear.
- The relevance of the experiment, that is the reason for carrying out the experiment, must be made clear.

Approaches to experimentation

The experimental method looks for a relationship between two variables to support a hypothesis of cause and effect. The two variables are:

- the Independent Variable which is the variable manipulated by the experimenters
- the Dependent Variable which is the variable measured

All other factors which could affect the Dependent Variable should be controlled as far as possible. The study used may guide the students towards appropriate controls, but it may be adapted to suit the context in which the students are working.

Approaches to the Independent Variable (IV)

It is important that there is only one Independent Variable in the experiment.

The Independent Variable is the variable that is manipulated by the experimenters. Students should base their choice of the number of conditions and the nature of the conditions on the study used to inform their experiment.

Students may wish to conduct a simple experiment, in which case the Independent Variable would have two conditions.

The study on which the experiment is based may have several conditions for the Independent Variable. Students may choose to replicate all the conditions or choose to simplify the experiment and choose two conditions for their own experiment.

Details of how the Independent Variable is operationalized may also differ from the study. As an example, students may choose different words for a word list, or a different type of music to the study to suit their own circumstances, provided the link between the study and their own experiment remains clear.

Variables that are based upon pre-existing characteristics of the participants are not suitable for the internal assessment. Variables that are not acceptable Independent Variables include, but are not limited to:

- gender (for example, comparing the results of female and male participants)
- age (for example, comparing the performance of 10-year-old participants and 18-year-old participants)
- native language (for example, comparing native French speakers and native Mandarin speakers)
- culture (for example, comparing the results of Afro-Caribbean participants and Swedish participants)

- education level (for example, comparing the performance of students in grade 5 and grade 11)
- socio-economic status (for example, poor participants and rich participants)
- handedness (for example, left-handed and right-handed participants).

While these variables might be of interest to students, they cannot be manipulated within the framework of the internal assessment. If such a variable is defined as the Independent Variable, the experiment will not meet the requirements and will not earn marks.

In addition, experiments involving the following elements are not acceptable and will not earn marks.

- placebos
- ingestion or inhalation (for example, food, drink, smoking, drugs)
- deprivation (for example, sleep, food).

Approaches to the Dependent Variable (DV)

The Dependent Variable is the variable measured. There are a number of approaches here too.

- Students may replicate the operationalization of the Dependent Variable used in the study on which they base their experiment.
- Students may adapt the operationalization of the Dependent Variable to suit their own circumstances or resources. They may, for example, alter the number of measurements taken, the type of measurements taken or use a different Dependent Variable altogether, provided that the link between the study and their own experiment remains clear and can be justified.

In addition, students may choose to alter the method of the study in a variety of different ways to better suit the context in which they are working. Students may for example alter:

- the nature of the participants as the most feasible participants for a school experiment would be other students
- the number of participants involved. The study may have had access to participant numbers that are impossible to replicate in a school. Alternatively, the study may have used a matched pairs design which cannot be replicated in school as there are too few participants to choose from, making matching problematic.

The marking criteria are designed to allow for a degree of flexibility and full marks can be achieved if the variations outlined above are applied. Exemplars of student work and further assistance in conducting the experiment for internal assessment is available in the teacher support material.

Analysis

The data collected should be appropriately displayed. Raw data should be available in an appendix. The data should be analysed in terms of:

- descriptive statistics to highlight the variability and spread of the data
- inferential statistics to draw conclusions about the significance of the data generated in terms of supporting a hypothesis. Cause and effect should be treated with caution and conclusions should be tentative.

The evaluation

The evaluation of the experiment should focus on:

- the limitations of the method—those factors which are likely to have had an influence on the outcome of the experiment but could not have been avoided (human error or accidents and omissions that could easily have been avoided with a little foresight and planning are not acceptable as limitations)

- suggestions for improving the method to generate more data or more effective data in order to arrive at a firmer conclusion. These may be based on the limitations identified or proposed on the basis of a fresh consideration of the experimental design.

Presentation

The following details should be stated in the header of the report.

- Title of the investigation
- IB candidate code (alphanumeric, eg XYZ123)
- IB candidate code for all group members
- Date, month and year of submission
- Number of words

The report should be between 1,800 and 2,200 words in length and consist of the following components:

- Introduction
- Exploration
- Analysis
- Evaluation
- References
    - The references are not assessed but must be included to meet the requirements of honest academic practice. Not attributing ideas of others included in your work amounts to academic misconduct. If academic misconduct is discovered in any work you submit for IB assessment, you will not be awarded a grade for the subject.

The appendices do not count towards the word count but should be kept to a minimum. Appendices should include:

- raw data tables
- print-outs of calculations and/or results from statistics software **or** calculations made for analytical purposes
- consent form pro forma (unfilled)
- copy of standardized instructions and debriefing notes
- supplementary materials.

Ethical guidelines should be adhered to throughout the planning, conducting and reporting of the experimental work for internal assessment.

Using assessment criteria for internal assessment

For internal assessment, a number of assessment criteria have been identified. Each assessment criterion has level descriptors describing specific achievement levels, together with an appropriate range of marks. The level descriptors concentrate on positive achievement, although for the lower levels failure to achieve may be included in the description.

Teachers must judge the internally assessed work at SL and at HL against the criteria using the level descriptors.

- The same assessment criteria are provided for SL and HL.
- The aim is to find, for each criterion, the descriptor that conveys most accurately the level attained by the student, using the best-fit model. A best-fit approach means that compensation should be made when a piece of work matches different aspects of a criterion at different levels. The mark awarded should be one that most fairly reflects the balance of achievement against the criterion. It is not necessary for every single aspect of a level descriptor to be met for that mark to be awarded.
- When assessing a student's work, teachers should read the level descriptors for each criterion until they reach a descriptor that most appropriately describes the level of the work being assessed. If a piece of work seems to fall between two descriptors, both descriptors should be read again and the one that more appropriately describes the student's work should be chosen.
- Where there are two or more marks available within a level, teachers should award the upper marks if the student's work demonstrates the qualities described to a great extent; the work may be close to achieving marks in the level above. Teachers should award the lower marks if the student's work demonstrates the qualities described to a lesser extent; the work may be close to achieving marks in the level below.
- Only whole numbers should be recorded; partial marks, (fractions and decimals) are not acceptable.
- Teachers should not think in terms of a pass or fail boundary, but should concentrate on identifying the appropriate descriptor for each assessment criterion.
- The highest level descriptors do not imply faultless performance but should be achievable by a student. Teachers should not hesitate to use the extremes if they are appropriate descriptions of the work being assessed.
- A student who attains a high achievement level in relation to one criterion will not necessarily attain high achievement levels in relation to the other criteria. Similarly, a student who attains a low achievement level for one criterion will not necessarily attain low achievement levels for the other criteria. Teachers should not assume that the overall assessment of the students will produce any particular distribution of marks.
- It is recommended that the assessment criteria be made available to students.

Using markbands for internal assessment

For internal assessment, markbands have been identified. Each markband has level descriptors describing specific achievement levels for a piece of work in a holistic fashion, together with an appropriate range of marks. The level descriptors concentrate on positive achievement, although for the lower levels failure to achieve may be included in the description.

Teachers must judge the internally assessed work at SL and at HL using the markband level descriptors.

- The same markbands are provided for SL and HL.
- The aim is to find the descriptor that conveys most accurately the level attained by the student's work, using the best-fit model. A best-fit approach means that compensation should be made when a piece of work matches different aspects of a markband at different levels. The mark awarded should be one that most fairly reflects the balance of achievement against the markband. It is not necessary for every single aspect of a level descriptor to be met for that mark to be awarded.
- When assessing a student's work, teachers should read the level descriptors until they reach a descriptor that most appropriately describes the level of the work being assessed. If a piece of work seems to fall between two descriptors, both descriptors should be read again and the one that more appropriately describes the student's work should be chosen.
- There are a number of marks available within a level; teachers should award the upper marks if the student's work demonstrates the qualities described to a great extent; the work may be close to achieving marks in the level above. Teachers should award the lower marks if the student's work demonstrates the qualities described to a lesser extent; the work may be close to achieving marks in the level below.

- Only whole numbers should be recorded; partial marks (fractions and decimals) are not acceptable.
- Teachers should not think in terms of a pass or fail boundary, but should concentrate on identifying the appropriate level descriptor for each markband.
- The highest level descriptors do not imply faultless performance but should be achievable by a student. Teachers should not hesitate to use the extremes if they are appropriate descriptions of the work being assessed.
- It is recommended that the markbands be made available to students.

Internal assessment criteria SL and HL

The assessment of the internal assessment task is the same for both SL and HL students and uses the following rubric.

I. Introduction (6 marks)

Marks	Level descriptor
0	Does not reach the standard described by the descriptors below.
1–2	The aim of the investigation is stated but its relevance is not identified. The theory or model upon which the student's investigation is based is identified but the description is incomplete or contains errors. Null and/or research hypotheses are stated, but do not correctly identify the Independent or Dependent Variables.
3–4	The aim of the investigation is stated and its relevance is identified but not explained. The theory or model upon which the student's investigation is based is described but the link to the student's investigation is not explained. The Independent and Dependent Variables are correctly stated in the null or research hypotheses, but not operationalized.
5–6	The aim of the investigation is stated and its relevance is explained. The theory or model upon which the student's investigation is based is described and the link to the student's investigation is explained. The Independent and Dependent Variables are stated and operationalized in the null or research hypotheses.
Marks	Comments

II. Exploration (4 marks)

Marks	Level descriptor
0	Does not reach the standard described by the descriptors below.
1–2	The research design is described. The sampling technique is described.

	Characteristics of the participants are described. Controlled variables are described. The materials used are described.
3–4	The research design is explained. The sampling technique is explained. The choice of participants is explained. Controlled variables are explained. The choice of materials is explained.
Marks	Comments

III. Analysis (6 marks)

Marks	Level descriptor
0	Does not reach the standard described by the descriptors below.
1–2	Only descriptive or inferential statistics are applied. A correct graphing technique is chosen but the graph does not address the hypothesis. There is no clear statement of findings.
3–4	Appropriate descriptive and inferential statistics are applied but there are errors. The graph addresses the hypothesis but contains errors. The statistical findings are stated but either not interpreted with regard to the data or not linked to the hypothesis
5–6	Descriptive and inferential statistics are appropriately and accurately applied. The graph is correctly presented and addresses the hypothesis. The statistical findings are interpreted with regard to the data and linked to the hypothesis
Marks	Comments

IV. Evaluation (6 marks)

Marks	Level descriptor
0	Does not reach the standard described by the descriptors below.

1–2	The findings of the investigation are described without reference to the background theory or model. Strengths and limitations of the design, sample or procedure are stated but are not directly relevant to the hypothesis. One or more modifications are stated.
3–4	The findings of the student's investigation are described with reference to the background theory or model. Strengths and limitations of the design, sample or procedure are stated and described and relevant to the investigation. Modifications are described but not explicitly linked to the limitations of the student's investigation.
5–6	The findings of the student's investigation are discussed with reference to the background theory or model. Strengths and limitations of the design, sample and procedure are stated and explained and relevant to the investigation. Modifications are explicitly linked to the limitations of the student's investigation and fully justified.
Marks	Comments

Ethical guidelines

The experiment for the internal assessment must adhere to the ethical guidelines outlined below.

- Any experimental study that creates anxiety, stress, pain or discomfort for participants is not permitted. Experiments involving deception, conformity, obedience, or any other form of harm are not permitted. The experiment must be appropriate to the sensitivities of the particular school, community and country.
- Any experimental study that involves unjustified deception, involuntary participation or invasion of privacy, including the inappropriate use of information and communication technology (ICT), email and the internet, must be avoided. There may be rare occasions when such infringements cannot be avoided, in which case the approval of other experienced psychologists should be sought before proceeding.
    - Partial deception may be allowed for some experiments where full knowledge of the experiment would fundamentally affect the outcome—such experiments are permissible provided they do no harm and participants are fully debriefed at the end. Participants retain their right to withdraw their data at this point. The only exception is a conformity or obedience study; these are not permitted under any circumstances. The teacher should be ready and willing to explain why conformity and obedience experiments are not appropriate for students at this level of study.
- Consent must be explicitly gained from participants through the use of a consent form. Implied consent is not acceptable.
- All participants must be informed of the aims and objectives of the experiment.
- All participants must be informed before commencing the experimental study that they have the right to withdraw at any time. Pressure must not be placed on any individual participant to continue with the investigation.
- Young children (under 12 years) must not be used as participants as they cannot give informed consent. Experimental studies involving older children (from 12 years up to 16 years) need the written consent of parent(s) or guardian(s). Students must ensure that parents are fully informed about the implications for children who take part in such research. Where an experimental study is conducted with children in a school, the written consent of the teachers concerned must also be obtained.
- Participants must be debriefed and given the right to withdraw their own personal data and responses. Anonymity for each participant must be guaranteed even after the experiment has finished.
- Participants must be shown the results of the research and if reasonable deception was involved, the participants must have the deception explained and justified to them.
- Teachers and students must exercise the greatest sensitivity to local and international cultures.
- Students must not conduct research with any participant who is not in a fit state of mind and cannot respond freely and independently.
- If any participant shows stress or pain at any stage of an experimental study, the investigation must finish immediately, and the participant must be allowed to withdraw.
- Non-human animals must not be used for the experimental study.
- All data collected must be kept in a confidential and responsible manner and not disclosed to any other person.
- Data must not be used for purposes other than that agreed to by the participants.
- Students must regard it as their duty to monitor the ways in which their peers conduct research, and to encourage public re-evaluation of any research practices that breach these guidelines.

- Experimental studies that are conducted online are subject to the same guidelines. Any data collected online must be deleted once the research is complete. Such data must not be used for any purpose other than the conduct of the experimental study.

- Teachers who feel the need for more guidance on whether an experiment is ethical should consult other teachers via the OCC who may offer additional expertise and critical distance.

For the experiment to be considered ethical, it must do no harm to anyone (also see section “Approaches to the Independent Variable” above). This includes participants, researchers, bystanders, teachers/supervisors, moderators, and eventual readers. Teachers should be prepared to discuss and explain what “harm” means. It can mean a number of things: hurt, injure, torment, tease, torture, traumatize, impair, wound, mistreat, punish, maltreat, misuse, abuse, molest, damage, or adversely affect. Harm manifests in many ways, not only in a physical sense. High standards of ethical practice are central to the IB philosophy and should therefore be promoted and supported by the entire IB community.