EE – The Reflection and Supervision Process

Reflection in the Extended Essay
Student reflection in the extended essay is a critical evaluation of the decision-making process. It demonstrates the evolution and discovery of conceptual understandings as they relate to the research question and sources. Reflection demonstrates the rationale for decisions made and the skills and understandings developed, as well as the authenticity and intellectual initiative of the student voice. Effective reflection highlights the journey the student has taken to engage in an intellectual and personal process as well as how it has changed him or her as a learner and affected the final essay.

As a part of the EE, students will be expected to show evidence of intellectual growth, critical and personal development, intellectual initiative and creativity. This should be facilitated by the use of the Researcher’s reflection space. The most successful students will be able to show an appreciation that learning is complex and that they are able to consider their actions and ideas in response to setbacks that they may experience during the research process.

The depth of reflection will demonstrate that the student has constructively engaged with the learning process. Such engagement provides evidence that the student has grown as a learner as a result of his or her experience. More importantly, it demonstrates the skills that have been learned. These skills may include:

- Critical thinking
- Decision-making
- General research
- Planning

- Referencing and citations
- Specific research methodology
- Time management

Reflection must be documented on the Reflections on planning and progress form and is explicitly assessed under assessment criterion E (engagement).

Researcher's Reflection Space (RRS)

Student reflection in the extended essay is critical. Effective reflection highlights the engagement of the student in an intellectual and personal process and how this has changed the student as a learner and affected the completion of that individual’s essay. For those students who have completed the Middle Years Programme, the researcher’s reflection space (RRS) can be compared to the process journal. The IB considers this to be a central component of a successful research process as it:

- Supports student learning, thinking and critical analysis throughout the research process
- Helps to stimulate discussions between the student and supervisor
- Aids the reflection process.

The nature of the RRS

Use of the RRS is strongly recommended, as it will allow the student to more clearly articulate and understand their decision-making process. It supports learning, thinking, critical analysis and evaluation, and contributes not only to the development of a successful extended essay but also to skills and competencies for pathways beyond the Diploma Programme.

The RRS is a personal learning environment that can be either a physical or virtual support tool. It is a space in which students are able to record reflections on what they are reading, writing and thinking. The use of the RRS will help students to prepare for their reflection sessions with their supervisors and inform the discussions that take place. In preparing for their reflection sessions students could use their RRS to:

- Respond to artifacts, such as photos, newspaper clippings, twitter feeds, blogs, and so on
- Respond to prompts and questions that may arise in the students’ subject areas, TOK classes or other aspects of the Diploma Programme
- Create MindMaps ®;
- Record emerging questions.

The idea of the RRS is not new and many students already keep research journals in the planning, researching and writing phases of their work on the extended essay. Encouraging students to develop a RRS will provide benefits in terms of the management of their workload and focus on their extended essay.
The role of the RRS
Created by students to support their engagement in the planning and decision-making process, the RRS helps to develop critical and evaluative thinking skills. It is also a planning tool that helps to scaffold the development of approaches to learning skills and conceptual understandings that occur throughout the research process.

Additionally, the RRS tracks the evolution of thought as it relates to the development of an argument. It helps the student to personally connect to the topic and may motivate them in meaningful ways to successfully complete the extended essay. Finally, supervisors will be able to more effectively authenticate the student voice in that the RRS links directly to elements that will eventually be found in the essay itself. The RRS is intended to make the entire supervision process more meaningful.

Insights and information recorded in the RRS are expected to form the basis for and find direct expression in the essay, reflection sessions and Reflections on planning and progress form. Students are expected to share excerpts from the RRS in discussions with their supervisor. Using these reflections as a point of reference in their supervision sessions, students will be able to:
• Demonstrate their planning
• Discuss what they are learning
• Evaluate their progress.

While use of the RRS is not mandated, the IB considers the development of the RRS an essential element of good reflective practice as it will help the student to not only scaffold the extended essay process but also to build skills which transcend the task itself and prepare the student for university study and beyond.

A well-used RRS will aid the reflection sessions students have with their supervisor, as elements of it can be used to stimulate and inform discussion. This will help students to move towards a more evaluative understanding of the research process and the choices they make as part of this. Finally, the RRS will contribute to a richer and more personally rewarding experience with the extended essay overall.

The student–supervisor relationship
Students can use the RRS to prepare for their reflection sessions with their supervisors.

<table>
<thead>
<tr>
<th>Reflection session</th>
<th>Description</th>
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<tbody>
<tr>
<td>The first reflection session</td>
<td>Students are encouraged to include in their RRS examples of initial topic exploration, possible sources and methods, preliminary research questions and their personal reactions to the issues. In attending their first reflection session with their supervisor, students can use notes made in the RRS as the basis for discussion as well as to demonstrate the progress students have made in the research process.</td>
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<tr>
<td>The interim reflection session</td>
<td>As their RRS develops, students can demonstrate the progress of their thinking, the development of their argument and raise any questions they may have with their supervisor. At this stage the RRS may include reactions to readings, progress in the timeline for completion of the extended essay, a possible outline of arguments, setbacks encountered and the strategies used to overcome them.</td>
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<tr>
<td>The final reflection session—viva voce</td>
<td>During the viva voce, which takes place at the completion of the extended essay process, the RRS can form the basis for discussion about the process of completing the essay. Students can show what they have learned about the topic, the research process followed, their own learning, as well as outlining new questions they have uncovered. Most importantly, during the viva voce the RRS may help to highlight the personal significance of the work to the student and ultimately contribute to the supervisor's report.</td>
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The supervision process
In order for students to be successful in the completion of the extended essay, the process needs to be structured and must incorporate a supervision process of 3–5 recommended hours to include three formal reflection sessions between the student and the supervisor as well as supervision sessions called check-in sessions. The recording of reflections on the Reflections on planning and progress form is mandatory and must be submitted with the completed extended essay for assessment under criterion E (engagement). To prepare for these sessions and ensure that they are meaningful and purposeful, the student needs to undertake a number of preparatory steps which are outlined in the following section.

Distinguishing between a supervision session and a reflection session
To support students through the process of undertaking independent research they must have a supervisor.

Check-in sessions
Students are encouraged to meet with their supervisor in between (and in addition to) the formal reflection sessions. Supervision time should meet the needs of the individual student; therefore, the frequency and duration of these meetings will depend on the needs of the student and the supervisor’s requirements. Supervision time may consist of an occasional 10-minute check-in to discuss a timeline or clarification of a comment made by the supervisor. It may also include a more lengthy discussion about particular issues, for example, regarding access to resources. These supervision sessions do not form part of the formal reflection process and do not, therefore, need to be reported on the Reflections on planning and progress form. However, they nevertheless form an important part of the supervision process.

Formal reflection sessions
These are the mandatory sessions that must be recorded on the Reflections on planning and progress form. It is recommended that these sessions last 20–30 minutes. During these sessions students should share excerpts from their Researcher’s reflection space with their supervisor. These sessions should focus on progress made so far and set clear objectives for moving forward in the research process. Students should be prepared for these sessions and the meetings should be a dialogue guided by questions posed by the supervisor. Examples of these are given in the document Guiding student reflection.

Supporting the mandatory reflection sessions
There are three mandatory reflection sessions that are a formal part of the extended essay and should be recorded on the Reflections on planning and progress form. Following each session, students are required to complete the relevant comment section on the form and submit it to their supervisor. The supervisor must then sign and date the form and after the final reflection session, the viva voce, add their own comment. For more information on the protocols for completing and submitting the Reflections on planning and progress form please refer to the section “Protocols on completing and submitting the Reflections on planning and progress form”.

Following the completion of all three sessions, the form will be submitted to the International Baccalaureate along with the completed extended essay. An incomplete form will impact the examiner’s ability to apply assessment criterion E (engagement) and will result in the student receiving a lower mark for this criterion.

Reflection sessions
The following sections provide guidance with regard to preparing for and undertaking the three mandatory reflection sessions.

1. Preparation for the first reflection session
2. First formal reflection session
3. Preparation for the interim reflection session
4. The interim reflection session
5. Accommodating a change of direction
6. Commenting on a draft version of the extended essay
7. Submission requirements
8. Preparation for the final reflection session (viva voce)
9. Final reflection session (viva voce)
1. Preparation for the first reflection session
As preparation for their first reflection session, students should do the following.

1. Think about subjects and areas of particular personal interest and do some initial background reading into a subject and topic of their choice.
2. Using this as a starting point, explore a variety of possible research topics.
3. Read the subject-specific section of the Extended essay guide for the subject they are interested in, paying particular attention to the nature of the subject and the treatment of the topic.
4. Undertake further background reading and begin to gather information around their area of interest. This exploration should give rise to a variety of topics and questions that students can consider for further research. At this stage it is important that students consider the availability of reliable and valid sources for the topic under consideration. All of this should be recorded in their Researcher’s reflection space.
5. Begin developing a research proposal which might include a MindMap® of ideas, an annotated article or preliminary bibliography. Additionally, students must already be thinking in terms of the following questions.
   - Is my topic appropriate for the subject I am considering?
   - Why am I interested in this area and why is it important?
   - What possible questions have emerged from my initial reading?
   - Are there any ethical issues that I need to consider?
   - What possible methods or approaches might be used for research in this area and why?

It is recommended at this point that the student–supervisor relationship is formalized and the student can consider himself or herself prepared for the first formal reflection session.

2. First formal reflection session
This initial reflection session should be a dialogue between the student and the supervisor based on the student’s initial explorations. It is recommended that the student send their supervisor an outline of their research proposal ahead of the meeting in order to give the supervisor the opportunity to review their work. This will ensure that the reflection session is focused and productive.
Topics of discussion that should arise during this session include:

- a review of the requirements and assessment criteria for the subject
- a review of ethical and legal implications, if applicable
- a dialogue about possible approaches and any potential problems that might arise
- a discussion of strategies for developing the student’s ideas for the essay and expanding the research so that the essay starts to take form
- probing and challenging questions that will help the student focus their thinking; this should lead to the development of the student’s working research question
- an outline of the next steps that the student should undertake in order to refine their question; this should take the form of a research and writing timeline.

Following this first session, the student is required to complete the first student comment section of the Reflections on planning and progress form and submit it to their supervisor who must then sign and date the form. Please refer to the section “Protocols for completing and submitting the Reflections on planning and progress form” for more information.

3. Preparation for the interim reflection session
Between the first and second reflection session, students can engage in informal conversations with other people, such as subject teachers, the extended essay coordinator, the librarian or their supervisor. They must also ensure that they are progressing with their research plan.

In preparation for the interim reflection session, students should have:

- Attempted to refine a focused and appropriate research question
- Significantly deepened their research and recorded pertinent evidence, information or data in the Researcher’s reflection space
- Reviewed and consolidated the methodologies they are using
- Formulated arguments based on the evidence that they have collected
- Added to the working bibliography for their research.
4. The interim reflection session
This session is a continuation of the dialogue between supervisor and student in which the student must demonstrate the progress they have made in their research. They must also be able to discuss any challenges they have encountered, offer their own potential solutions and seek advice as necessary.
During this session the supervisor might discuss:
• A completed piece of sustained writing from the student in order to ensure that they understand the academic writing requirements, including referencing formats
• Whether an appropriate range of sources has been accessed and how the student is critically evaluating the origin of those sources
• What the student now has to do in order to produce the full draft of their essay, and ways and means of breaking down the task into manageable steps.
• By the end of the interim reflection session both student and supervisor should feel satisfied that there is:
  • A clear and refined research question
  • A viable argument on which to base the essay
  • A sufficient range of appropriate sources
  • A clear vision for the final steps in the writing process.

Between the interim session and the completion of the extended essay, students should continue to see their supervisor as appropriate to their needs, although the third and final reflection session should not take place until after the extended essay has been completed and uploaded for submission.

Following this interim session, the student is required to complete the second student comment section of the Reflections on planning and progress form and submit it to their supervisor who must then sign and date the form. Please refer to the section “Protocols for completing and submitting the Reflections on planning and progress form” for more information.

5. Accommodating a change of direction
If the student or supervisor is not satisfied that the goals of the research are being met, further supervision sessions may be appropriate. Students who find that they need to change direction in their research or adjust the formulation of their research question should demonstrate the thinking that led them to these decisions in their second reflection on the Reflections on planning and progress form. They must not go back and adjust their initial reflections, as the purpose of the form is to demonstrate the evolution of their thinking in the research process.
6. Commenting on a draft version of the extended essay

Commenting on one completed draft of the essay is a very important aspect of the latter stages in the process, and the last point at which the supervisor sees the essay before it is finally uploaded for submission. It is therefore vital that the level of support given is appropriate—too little support and the ability of the student to meet their potential is compromised; too much help and it will not be the work of an independent learner.

The best way of conducting this last stage is for the student to submit the essay prior to a supervision session to allow the supervisor to add their comments. This should be followed by a one-to-one discussion between the supervisor and the student in which they go through the comments together as these become a starting point for a dialogue about the essay. This advice should be in terms of the way the work could be improved, but this first draft must not be heavily annotated or edited by the supervisor.

What supervisors can do?
Comments can be added that indicate that the essay could be improved. These comments should be open-ended and not involve editing the text, for example:

• Issue: the research question is expressed differently in three places (the title page, the introduction and the conclusion).
  Comment: is your research question consistent through the essay, including on the title page?
• Issue: the essay rambles and the argument is not clear.
  Comment: your essay lacks clarity here. How might you make it clearer?
• Issue: the student has made a mistake in their calculations.
  Comment: check this page carefully.
• Issue: the student has left out a section of the essay.
  Comment: you are missing something here. What is it? Check the essay against the requirements.
• Issue: the essay places something in the appendix that should be in the body of the essay.
  Comment: are you sure this belongs here?
• Issue: the conclusion is weak.
  Comment: what is it that you are trying to say here? Have you included all your relevant findings? Have you looked at unanswered questions?
• Issue: the essay has an incomplete citation.
  Comment: you need to check this page for accuracy of referencing.

What supervisors cannot do:
• Correct spelling and punctuation.
• Correct experimental work or mathematics.
• Re-write any of the essay.
• Indicate where whole sections of the essay would be better placed.
• Proofread the essay for errors.
• Correct bibliographies or citations.

If students give their supervisor sections of their extended essay to read, this is permissible but the same section of work should not be looked at repeatedly by the supervisor, nor should it be heavily annotated or edited. Students and supervisors must be clear that only one complete draft of the essay is permitted to be looked at by the supervisor.

7. Submission requirements

The next version of the essay that the supervisor sees must be the final one. The supervisor gains access to this version once the student has uploaded it onto the e-coursework system. This version of the extended essay must be clean; in other words, it must not contain any comments from the supervisor, or any other person. Once this version has been uploaded to the system by the student they are not permitted to make any further changes to it, unless deemed appropriate by the supervisor because of an administrative error. For this reason, it is important that students are advised to ensure that it meets all formatting and submission requirements before they upload it.
8. Preparation for the final reflection session (viva voce)
Supervisors must have already read the final version of the essay, available to them on the e-coursework system, before this session takes place.
Students should bring the following to this session:
• extracts from their RRS that illustrate how they have grown as learners through the process of reflection
• a willingness to share their personal experience and to discuss the skills and development of conceptual
• understandings that they have acquired through the completion of the extended essay.

It is important to note that students must not be allowed to make any changes to their extended essay after this meeting. Once they have uploaded the essay onto the e-coursework system the essay is no longer available to them and no changes are permitted.

9. Final reflection session (viva voce)
The viva voce is a short interview between the student and the supervisor, and is the mandatory conclusion to the extended essay process. Students who do not attend the viva voce will be disadvantaged under criterion E (engagement) as the Reflections on planning and progress form will be incomplete.
The viva voce is conducted once the student has uploaded the final version of their extended essay to the IB for assessment. At this point in the process no further changes can be made to the essay. The viva voce is a celebration of the completion of the essay and a reflection on what the student has learned from the process.
The viva voce is:
• an opportunity to ask the student a variety of open-ended questions to elicit holistic evidence of the student’s learning experience.
• an opportunity for the supervisor to confirm the authenticity of the student’s ideas and sources
• an opportunity to reflect on successes and difficulties encountered in the research process
• an aid to the supervisor’s comments on the Reflections on planning and progress form.

The viva voce should last 20–30 minutes. This is included in the recommended amount of time a supervisor should spend with the student.

In conducting the viva voce and writing their comments on the Reflections on planning and progress form, supervisors should bear in mind the following.
• The form is an assessed part of the extended essay. The form must include: comments made by the supervisor that are reflective of the discussions undertaken with the student during their supervision/ reflection sessions; the student’s comments; and the supervisor’s overall impression of the student’s engagement with the research process.
• An incomplete form resulting from supervisors not holding reflection sessions, or students not attending them, could lead to criterion E (engagement) being compromised.
• In assessing criterion E (engagement), examiners will take into account any information given on the form about unusual intellectual inventiveness. This is especially the case if the student is able to demonstrate what has been learned as a result of this process or the skills developed.
• Examiners want to know that students understand any material (which must be properly referenced) that they have included in their essays. If the way the material is used in context in the essay does not clearly establish this, the supervisor can check the student’s understanding in the viva voce and comment on this on the Reflections on planning and progress form.
• If there appear to be major shortcomings in citations or referencing, the supervisor should investigate thoroughly. No essay should be authenticated if the supervisor believes the student may be guilty of plagiarism or some other form of academic misconduct.
• The comment made by the supervisor should not attempt to do the examiner’s job. It should refer to things, largely process-related, that may not be obvious in the essay itself.
• Unless there are particular problems, the viva voce should begin and end positively. Completion of a major piece of work such as the extended essay is a great achievement for students.
Following this final session, the student is required to complete the last student comment section of the *Reflections on planning and progress form*, sign and date it and submit it to their supervisor, who must then add their own comments, sign and date the form. The supervisor must then upload the form into the e-coursework system, confirm the authenticity of both the form and essay, and submit them to the IB for assessment as one portfolio. Please refer to the section “Protocols for completing and submitting the *Reflections on planning and progress form*” for more information.

Failure to complete or sign the *Reflections on planning and progress form* may result in:

- a delay in a grade being issued for the extended essay
- criterion E being compromised; in other words, the examiner may not be able to apply criterion E due to missing or lacking information
- the essay being referred as a possible case of academic misconduct as a result of not being authenticated.

**Authenticating student work**

All extended essays submitted to the IB for assessment must be authenticated by the student and supervisor, and must not include any known instances of suspected or confirmed academic misconduct. All students and supervisors must confirm the authenticity of the work submitted when uploading work to the e-coursework system. Once a student has uploaded the final version of their extended essay to the e-coursework system for assessment, and confirmed the authenticity of it, it is submitted via the system to their supervisor. At this point the supervisor must not allow any retraction of the essay by the student for modification purposes unless there has been an administrative oversight.

The *Reflections on planning and progress form* is given to the supervisor by the student, signed and dated, and it is the responsibility of the supervisor to upload this to the e-coursework system, add their comment and authenticate it before submitting it to the IB with the already uploaded essay as one portfolio. Further guidance on this is given in the section “Protocols for completing and submitting the *Reflections on planning and progress form*”.

It is extremely important that supervisors are able to confirm that they have followed the guidance for monitoring the student’s work throughout the process and can, to the best of their knowledge, confirm the authenticity of the work upon final submission (please refer to the *Handbook of procedures for the Diploma Programme*).

If the supervisor is unable to confirm the authenticity of the work this must be brought to the attention of the Diploma Programme coordinator, who in turn should refer to the *Handbook of procedures for the Diploma Programme* for guidance. Work that is submitted but does not comply with the expectations and requirements outlined in this publication will be treated as a case of academic misconduct.

When authenticity is in doubt, the supervisor should first discuss this with the student. In addition, one or more of the following actions may be helpful:

- compare the style of writing with work known to be that of the student
- compare the final submission with the first draft of the written work
- check the references cited by the student and the original sources
- interview the student in the presence of a third party
- use one of the many websites set up to prevent plagiarism.

It is the responsibility of supervisors to ensure that all students understand the basic meaning and significance of concepts relating to academic honesty, especially authenticity and intellectual property. Supervisors must ensure that all student work to be assessed is prepared according to the stated requirements and must explain clearly to students that the extended essay must be entirely their own work.

The same piece of work cannot be submitted to meet the requirements of both the extended essay and a subject-specific assessment component.

For further guidance on this issue and the procedures for confirming authenticity please refer to the *General regulations: Diploma Programme*, as well as the *Handbook of procedures for the Diploma Programme*.