

Student Experiences of International Internships: A Report from the GeoInternInternational Project 2023–2026



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Disclosure of AI-use

ChatUiT was used to correct errors, condense the text, and refine the language during the finalisation of the report.

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1 Introduction

1.1 The GeoInternInternational project



GeoInternInternational was implemented as an HKDir funded project from January 2023 to December 2026. It was built on the established and HK-dir-funded GeoIntern project, which had focused on strengthening the relevance of geoscience education to working life at Norwegian universities. GeoInternInternational extended this work by developing and testing a reciprocal model for international internships. Its purpose was to give geoscience students experience of academic and professional work in other countries and cultures, while strengthening collaboration between Norwegian geoscience departments and international partner institutions.

1.1.1 Project rationale, organisation and objectives

The project description linked the initiative to demographic changes in the Norwegian labour market for geoscience graduates. The proportion of candidates from geoscience entering the petroleum sector had fallen from more than 70 per cent about a decade earlier to 10-15 per cent when the project was developed. As graduates increasingly entered a wider range of sectors and worked across national

and organisational contexts, the project argued that geoscience programmes needed to give greater attention to international experience, internships and relevance to working life. This rationale was also connected to Norwegian policy expectations that higher education should strengthen work-related learning and internationalisation (UiT The Arctic University of Norway, n.d.).

The project website summarised the intended opportunity for students as follows:

"The GeoInternInternational project will provide an arena for Bachelor and Master students in geoscience to obtain international work life experience during their studies" (UiT - The Arctic University of Norway, n.d., para. 1).

GeoInternInternational was hosted and led by the Department of Geosciences at UiT The Arctic University of Norway. Iver Martens, Associate Professor and project leader, and Helge Alexander Vogt, project coordinator, had central roles in its management and implementation. The close relationship with the preceding GeoIntern project allowed the new project to draw on established networks, administrative routines and experience.

The project also worked in close connection with iEarth, the Diku/HK-dir-funded Norwegian Centre for Excellence in Education. iEarth brings together the geoscience departments at the University of Bergen, the University of Oslo, UiT the Arctic University of Norway and the University Centre in Svalbard. UiT led the consortium's focus area on Alumni and Outreach, which included strengthening the relevance of geoscience education to working life. This connection placed GeoInternInternational within a wider national effort to improve the quality and relevance of Norwegian geoscience education.

The main objectives of GeoInternInternational were to:

- establish a systematic and reciprocal model for international internships in the geoscience sector;
- enable students to apply and develop their geoscientific knowledge and skills in international working and research environments;

- give students insight into geoscientific practices, institutions and labour markets in other countries;
- strengthen transferable skills in communication and dissemination across cultures, networking and collaboration;
- develop students' understanding of how geoscientific work is organised in different institutional and cultural contexts; and
- strengthen international partnerships and the exchange of knowledge about the design and implementation of internships.

The expected outcomes were correspondingly formulated at both student and institutional levels. They included broader international networks for students, mentors and staff; stronger scientific and transferable skills; greater career competence and readiness for national and international employment; and increased shared knowledge about internships and relevance to working life across national and international learning communities.

The project was also aligned with the UTFORSK goal of strengthening international partnerships in areas of mutual and strategic interest. Its institutional ambition was to improve the quality and relevance of study programmes at the participating institutions and to develop models that could support systematic international internships beyond individual exchanges (UiT The Arctic University of Norway, n.d.).

GeoInternInternational can therefore be understood as both an educational development initiative and an international partnership project. The student internships were the principal means through which these aims were pursued.

1.1.2 Internship programme and implementation

The programme followed a reciprocal model. Bachelor's and master's students from Norwegian geoscience departments undertook internships at international partner institutions and associated organisations. Students from partner institutions were, in turn, offered internships at Norwegian geoscience departments and associated public- and private-sector organisations. The project collaborated with institutions in Brazil, Canada, China, India, Japan, South Africa, South Korea and the United

States. Internship activities included field campaigns, laboratory work and other research- and education-related tasks.

The programme comprised 29 internships completed between January 2023 and December 2026. The participants included 13 women and 16 men, and the internships lasted between six and eight weeks. The opportunities were advertised through the participating institutions' communication channels and the project website. They were not organised as a separate credit-bearing course and did not award ECTS credits.

Fifteen students from international partner institutions completed internships in Norway. They came from Université de Montréal (four students), the Indian Institute of Technology (Indian School of Mines) Dhanbad (two), the University of Johannesburg (three), the Federal University of Rio Grande do Sul (two), Tokyo Institute of Technology, now Institute of Science Tokyo (one), China University of Petroleum (Beijing) (two) and Michigan State University (one). Of these students, three were placed at the University of Bergen, five at the University of Oslo and seven at UiT The Arctic University of Norway.

Fourteen students based at Norwegian universities completed internships abroad: six from the University of Bergen, three from the University of Oslo and five from UiT The Arctic University of Norway. They were placed at the University of Manitoba in Canada (three students), IIT Roorkee in India (two), the University of Johannesburg in South Africa (three), the Federal University of Rio Grande do Sul in Brazil (two), Tokyo Institute of Technology in Japan (one), China University of Petroleum (Beijing) (two) and the IBS Center for Climate Physics at Pusan National University in South Korea (one).

Formal statements of intent to collaborate with partner institutions were established as part of the project application, and further partnerships were developed through contacts facilitated by third parties. Before each internship was advertised, the project administration agreed with the partner institution and mentor on the scope, timing and content of the placement. These arrangements were set out in a written placement description and call for applications. Students applied

for the advertised opportunities and were matched to placements on the basis of their academic background and qualifications. Each internship was then formalised through a tripartite agreement and a learning agreement.

Preparation before departure varied between placements. Some mentors provided students with advance training in relevant software or subject areas, whereas others introduced the necessary knowledge and skills during the internship. The written agreements provided a common framework, but the timing and extent of subject-specific preparation were adapted to each placement.

The placement description and agreements specified the framework and requirements for the internship, including three compulsory assignments. The host institution was expected to provide a mentor with sufficient time and capacity to support the student, as well as suitable workspace and the equipment required to complete the agreed tasks. The agreements also proposed forms and a regular schedule for mentoring and follow-up during the placement.

Throughout the internship, students had weekly contact with the GeoIntern project administration at UiT. When particular needs or challenges arose, the project administration also arranged meetings with mentors and, where relevant, the international offices at the participating institutions. The assignments were provided before the internship so that students could collect relevant material during the placement; the completed work was submitted afterwards.

Following the placement period, students submitted travel reports and reflective notes and participated in the accompanying research conducted by RESULT at UiT. Some also contributed material about their experiences through social media. The implementation thus combined a common written and contractual framework with local flexibility in how host institutions and mentors prepared for and conducted the internships.

1.2 Background: Internationalization in Geoscience



Over the past five decades, internationalisation has developed from a relatively marginal activity into a central strategic priority for higher education institutions. It encompasses not only the international mobility of students and staff, but also research and educational partnerships, internationalised curricula, joint programmes and digitally mediated collaboration across national borders (de Wit & Altbach, 2021). Internationalisation may give students access to new academic perspectives, working methods and professional networks, while also supporting the development of intercultural competence and an understanding of how knowledge and professional practices are shaped by different national and cultural contexts.

However, international exposure does not automatically result in meaningful learning. A scoping review of 967 studies found that much of the literature on internationalisation is descriptive and that relatively few studies directly demonstrate effects on students. The most effective initiatives appear to be those that are integrated into the curriculum, promote active participation and inclusion, provide opportunities for reflection, and explicitly support the development of intercultural skills. Important challenges include unequal access, as physical mobility is generally more available to students with sufficient financial and social resources, as well as linguistic barriers, differing expectations and the risk of internationalisation becoming an isolated activity rather than an integrated part of students' education (Mittelmeier et al., 2024).

International internships represent one way of combining internationalisation with work-integrated learning. A systematic review of 31 studies found that students

particularly reported developing intrapersonal skills, including self-confidence, independence and openness to new experiences, as well as practical knowledge and language proficiency. However, the evidence for cognitive and leadership development was less consistent, and many of the studies had methodological limitations. These findings underline the importance of clear learning objectives, appropriate workplace tasks, qualified supervision and opportunities for structured reflection (Di Pietro, 2022).

There are particularly strong reasons for internationalisation within geoscience. Earth processes and many of the societal challenges addressed by geoscientists—including climate change, natural hazards, access to natural resources and environmental change—extend across national borders. Understanding these processes requires collaboration across countries, geological settings and scientific traditions. In an editorial in the *Journal of Geoscience Education*, Locke et al. (2012, p. 199) nevertheless observed that:

Given that a global approach to the study of Earth processes is the norm, it is unfortunate that the field of geoscience education remained relatively segregated by country for most of the last century.

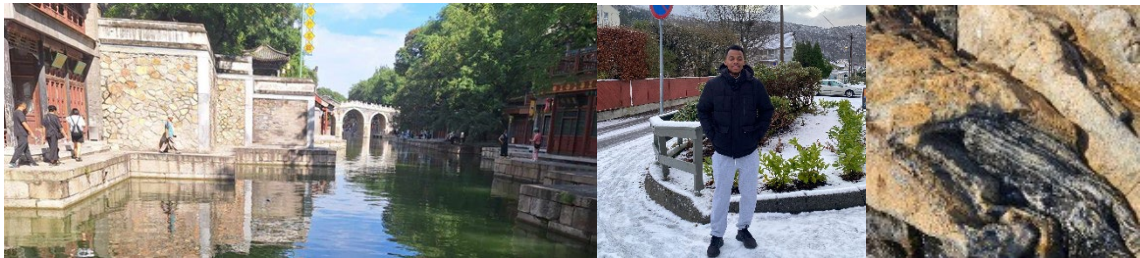
The authors argued that the national separation of geoscience education had restricted the exchange of ideas and experiences across educational contexts. Although international collaboration in geoscience education had increased, they also noted that early collaborations were concentrated largely among developed countries and that institutions and educators in developing countries were less well represented (Locke et al., 2012).

More recent evidence indicates that this challenge is not confined to education. Based on a quantitative bibliometric analysis of publications in Nature Index journals over two decades, Ye et al. (2024) found that international research collaboration in geoscience was less extensive than in other natural science disciplines. This analysis concerns scientific co-authorship rather than education or student mobility and should therefore not be interpreted as direct evidence about internationalisation in geoscience programmes. Nevertheless, it indicates that

further development of international networks remains relevant within the discipline.

GeoInternInternational was designed as a contribution to this development by providing bachelor's and master's students with international work-life experience during their geoscience education. Through reciprocal internships involving Norwegian and international partner institutions, the project sought to expose students to different geological settings, research practices, organisational contexts and professional cultures. Such arrangements also involve challenges, including financing, travel and visa requirements, health and safety considerations, language differences, variation in supervision and the need to ensure that partnerships are reciprocal rather than one-sided. Consequently, the educational value of international internships depends not only on mobility itself, but on careful preparation, equitable access, relevant tasks, effective supervision and systematic reflection after the experience.

1.3 Background: Research on internship as a way of learning



An internship can be understood as a time-limited, supervised period of work experience that forms part of, or is academically linked to, a programme of study. Across disciplines, research indicates that such arrangements can provide students with access to authentic workplace tasks and opportunities to apply theoretical knowledge in complex situations. Reported learning outcomes include subject-specific and technical skills, communication, collaboration, independence and problem-solving, as well as enhanced self-efficacy, career awareness and an emerging professional identity. A recent systematic review also indicates that internship experiences involve cognitive, emotional, attitudinal and behavioural

learning processes and should therefore not be evaluated solely in terms of subsequent employment outcomes (Billett, 2009; Jackson, 2015; Visser & Grosemans, 2026).

However, the research does not suggest that participation guarantees learning. The outcomes depend particularly on relevant and sufficiently challenging tasks, clearly defined learning objectives, participation in the workplace community, competent supervision and regular feedback. Students must also be supported in making sense of their experiences and connecting them to the academic content of their programme, for example through reflective assignments, seminars and dialogue with academic staff. Poorly designed arrangements may instead result in routine tasks, unclear roles, inadequate follow-up and little alignment between workplace tasks and learning objectives. Unpaid or inadequately funded placements may also create unequal access and less favourable learning conditions. Overall, the research findings are positive, but the evidence base is heterogeneous and remains dominated by students' self-reported outcomes and studies with limited capacity to support causal inferences (Inceoglu et al., 2019; McHugh, 2017).

Internships may serve a particularly important function in discipline-oriented degree programmes, where the relationship between the programme of study and particular occupations is often less explicit than in professional programmes. Studies from fields including biology and the social sciences indicate that work placements can make students aware of the breadth of possible career pathways, strengthen their motivation and help them translate disciplinary knowledge into the tasks and language of the workplace (Ho et al., 2026; Velle et al., 2017). A systematic review of voluntary work placements outside professional programmes found small but consistently positive effects on the transition into employment, as well as changes in knowledge, skills, attitudes and self-efficacy. The effects on more subjective career outcomes were less conclusive (Inceoglu et al., 2019).

At the same time, such programmes often lack established traditions of work placement, standardised workplace tasks and workplace supervisors with clearly defined educational roles. The relevance and quality of the experience may therefore vary considerably between placement providers. The longitudinal study by Ho et al. (2026) shows that learning outcomes depend on genuine tripartite

collaboration between the student, the university and the workplace, and that differences in the quality of tasks, supervision and financial support can produce unequal learning conditions. Universities must therefore take clear responsibility for selecting placement providers, clarifying expectations, supporting supervisors, facilitating reflection and conducting assessments.

The direct evidence base specifically addressing internships in geology remains limited. A systematic review of situated learning in the geosciences identified only ten relevant studies and focused primarily on field-based and other practice-related forms of learning, rather than internships alone. Nevertheless, its findings support the importance of authentic contexts, participation in professional communities of practice and supervised engagement with real geoscientific problems (Donaldson et al., 2020). This research should therefore be regarded as relevant background knowledge rather than as direct evidence of the effects of internships.

The few direct studies point to several potential geology-specific benefits. Students participating in an integrated geoscience programme reported developing a broader understanding of geoscience careers, experience of science communication, increased confidence, professional networks and skills relevant to working life. However, they also reported challenges related to communication, time demands and combining the placement with their studies and paid employment (Stofer et al., 2021). Research on GIS internships further indicates that employers, academic staff and students do not always prioritise the same skills; employers placed greater emphasis on practical data management and adaptability, among other areas (Craig & Wikle, 2016). A larger study from the closely related field of environmental science found particular development in communication, report writing, organisation, information acquisition, independence and the ability to address complex environmental problems (Scholz et al., 2004).

The Norwegian study most directly relevant to this context included workplace supervisors involved in internship schemes in biology and geology at three universities. The supervisors highlighted challenges in adapting tasks to individual students' competence, working within universities' time-related and administrative constraints, and ensuring effective communication between the student, the workplace and the university. They called for clearer roles, more support and training

for supervisors, the collaborative development of learning objectives and structured feedback processes (Schneider et al., 2024). For geology programmes, therefore, the research indicates that internships have considerable learning potential, but that this potential is realised only when authentic disciplinary tasks are combined with active supervision, clear coordination and planned reflection.

1.4 The external evaluation report



RESULT, The Centre for Teaching, Learning and Technology at UiT The Arctic University of Norway, represented by researchers Cato Bjørndal and Øystein Lund, was commissioned to conduct an independent external evaluation of the project. The evaluation team followed the project over time and collected data from students after they had completed their internships.

The evaluation was aligned with the stated objectives of the project. As outlined in Section 1.1, the overall aim of GeoInternInternational was to strengthen the relevance, international orientation and work-life dimension of geoscience education by developing systematic models for reciprocal internships across national and institutional contexts. Building on the earlier GeoIntern project, it sought to provide bachelor's and master's students with authentic geoscience work experience abroad and in Norway, thereby supporting disciplinary competence, transferable skills, intercultural communication, networking and career awareness. At the same time, the project aimed to build sustainable international partnerships and strengthen the relationship between academic study programmes and the changing professional contexts in which geoscientists work.

In order to assess how far these aims were realised, it was crucial to examine the participating students' experiences, perspectives and assessments. The evaluation therefore focuses on how students understood the value of the internship, how they experienced its organisation and support structures, and how they perceived its contribution to their learning, professional development and future career orientation. This student perspective also provides an important basis for identifying possible areas for further development.

The evaluation does not seek to address every aspect of the project's broader purpose directly. Rather, it is limited to evidence generated from the students' perspectives. On this basis, the overarching research question for the evaluation report was formulated as follows:

How did the students experience the internship?

The following seven sub-questions were developed to guide data collection and analysis:

- 1. What motivation and expectations did the students have for the internship?*
- 2. How did the students experience the preparations for the internship?*
- 3. How did the students experience the follow-up from the mentor and the workplace?*
- 4. How did the students experience the work tasks in the workplace and their relevance?*
- 5. How did students perceive the contribution of assignments to their learning outcomes?*
- 6. How did students rate the internship and its learning outcomes overall?*
- 7. How can organising the international internship in the field of geoscience be further developed?*

2 Methods and data

2.1 Mixed methods design

The evaluation employed a mixed methods design, understood as the intentional combination of quantitative and qualitative forms of data within the same study in order to develop a more comprehensive understanding of a research problem (Creswell & Plano Clark, 2018). This approach was appropriate because the aim of the evaluation was not only to describe how students rated different aspects of GeoInternInternational, but also to understand how they interpreted and explained their experiences of the internship.

The study combined three sources of empirical material:

- survey items with five-point Likert-type response scales;
- open-ended survey responses in which students could justify and elaborate their ratings; and
- semi-structured focus group interviews with open-ended questions.

The design followed a complementary mixed methods logic. The quantitative survey data provided an overview of response patterns across the participating students, while the qualitative material offered depth, examples and explanation. This combination was particularly relevant in an evaluation of international internships, where students shared a common programme structure but completed their placements in different institutional, disciplinary and national contexts.

The survey and the focus group guide were organised around overlapping evaluation domains, but they did not mirror each other item by item. For this reason, the different data sources were not treated as interchangeable. Instead, the quantitative survey items, open-ended survey responses and focus group interviews were aligned with the evaluation questions according to what each source could contribute analytically.

2.2 The survey

The survey included both quantitative and qualitative components. The quantitative component consisted of statements to which respondents indicated their level of agreement on a five-point Likert-type scale. For each item, respondents were also given the opportunity to justify their response and elaborate in free text. These open-ended responses provided short individual explanations of the ratings and were used as qualitative data when they addressed the same evaluation question as the focus group interview material.

The Likert-type items were analysed descriptively. Frequencies, percentages and average scores were used to summarise the distribution of responses for each item. This approach was suitable because the survey was designed as an evaluative instrument rather than as a psychometric scale or as a basis for inferential statistical testing. Descriptive analysis of Likert-type responses is appropriate when the purpose is to identify tendencies, variation and response distributions within a defined group of respondents (Sullivan & Artino, 2013).

The survey consisted of 17 Likert-type items (Appendix 1) focusing on students' experiences of the international internship. These items addressed, among other things, information before departure, how students were received at the internship workplace, contact with mentors, management and colleagues, the work tasks they were given, and how they assessed their learning outcomes. The full survey instrument is included as Appendix 1, and the numbering of the survey items used in the findings and in Table 1 refers to this appendix.

Students received a link to the anonymous survey immediately after completing their internship. In total, 21 students responded (8 women and 13 men), out of the 29 students who participated in the project. The survey was completed anonymously through Nettskjema.no.

2.3 Semi-structured focus group interviews

Semi-structured focus group interviews were conducted to elicit richer and more nuanced accounts of students' experiences than could be captured through survey responses alone. A total of 23 students participated in six online interviews conducted via Microsoft Teams by the Result researchers. Each interview lasted between 45 and 90 minutes and typically included four to six students; in one exceptional case, only one student participated.

In this report, focus group interviews are understood as a form of group interview in which participants' accounts are explored not only through responses to the interviewer's questions, but also through the interaction, comparisons and elaborations that arise between participants. The focus group format was appropriate because focus groups are particularly useful when researchers want to examine how participants confirm, contrast, develop or nuance one another's accounts (Morgan, 1997). In this evaluation, such interaction was relevant because students had taken part in the same overall project but had completed internships in different workplaces and countries.

The interviews followed a semi-structured interview guide, in line with qualitative interview approaches that combine a prepared thematic structure with openness to participants' own meanings and priorities (Brinkmann & Kvale, 2015). The full focus group interview guide is included as Appendix 2. The guide consisted of ten broad, open questions or themes. These overlapped with the themes covered in the survey at the level of evaluation domains, including preparation, workplace experience, mentoring, learning processes, learning outcomes and possible improvements. The guide provided the broad thematic structure for the interviews, while the use of follow-up questions allowed participants to elaborate on issues that were particularly relevant to their own internship experiences.

During the interviews, the researchers emphasised follow-up questions and an open conversational form. Participants were not required to answer questions in the exact order of the guide; instead, the interviewer followed up the issues students themselves considered important. One researcher facilitated the interview, while the other followed the discussion and ensured that central themes in the guide that

had not been sufficiently addressed were returned to towards the end of the interview.

The interviews were conducted digitally in Teams, with participants located in different parts of the world. Nettskjema.no, a Norwegian public-sector digital solution used for secure data collection, was used to record and transcribe the interviews. Most interviews lasted approximately one hour.

2.4 Qualitative thematic analysis

The qualitative data were analysed through thematic analysis. Braun and Clarke (2022) describe thematic analysis as a theoretically flexible method for developing themes as patterned meanings across a qualitative dataset, guided by the research question and the analyst's interpretative work. This understanding informed the decision to analyse focus group interview material and open-ended survey responses within shared thematic analyses when they addressed the same subordinate evaluation question (Table 1).

In this evaluation, the qualitative dataset for each thematic analysis was therefore defined analytically rather than by source alone. It consisted of the qualitative material that was substantively relevant to the specific research question, whether that material came from a focus group transcript or from an open-ended survey response. This is consistent with a thematic analytic logic in which the boundaries of the dataset are established in relation to the purpose of the analysis and the patterns of meaning being examined.

At the same time, the two qualitative sources were not treated as interchangeable. Focus group interviews provided extended, contextualised and interactional accounts of students' experiences, whereas open-ended survey responses provided shorter individual justifications and elaborations linked to specific survey ratings. The two sources were analysed within a shared thematic framework only when they addressed the same subordinate research question. This made it possible to examine whether survey comments confirmed, nuanced or problematised patterns in the focus group material, while also allowing the focus group interviews to explain and contextualise patterns indicated in the survey. In the

findings, illustrative quotations are identified by data source in order to preserve this distinction.

Familiarisation (analytic stage 1) began during the focus group interviews, where both researchers were present, made notes and discussed initial impressions after each interview. All Norwegian data were translated into English so that the analysis could be carried out in one working language. The qualitative data were then sorted into separate working documents according to the research question and the thematic analysis for which they were substantively relevant. In total, ten qualitative working documents were prepared, including the nine thematic analysis documents (TA1-TA9) and the survey material used to identify relevant open-ended responses.

Coding (stage 2) was inductive and iterative, and included both semantic and latent coding. In line with Braun and Clarke's emphasis on themes as analytically developed patterns of meaning rather than simple topic categories, candidate themes were not derived mechanically from the survey items or the interview guide. Codes were written in the margins of the working documents and reformulated through several revisions. Candidate themes were then developed by clustering codes around patterned meanings relevant to each research question (stage 3). This process involved visual mapping and repeated regrouping of codes in Word tables, later expanded with supporting extracts.

The candidate themes were reviewed against coded extracts, code clusters and the full qualitative material relevant to each analysis (stage 4). In this review, the researchers considered whether each theme had a coherent central organising concept, whether the themes were sufficiently distinct, and whether, taken together, they provided a convincing response to the research question. The material was subsequently reread in relation to the thematic structure, and theme boundaries, names and analytical adequacy were discussed and refined (stage 5).

Writing was treated as part of the analysis (stage 6). Drafting the findings involved further clarification of themes, refinement of the relationships between themes and selection of extracts that could illustrate the analysis in a concise and relevant way.

2.5 Analytical structure and use of data

Table 1 should be read in light of this methodological logic. It summarises how the different data sources were aligned with the evaluation questions, and displays an analytical alignment rather than an item-by-item merging of data. It also links the subordinate evaluation questions to the numbered survey items in Appendix 1 and to the focus group interview material generated through the guide in Appendix 2. The quantitative survey items were analysed descriptively and used to identify overall response patterns. The open-ended survey responses and the focus group interview material were analysed thematically where they were substantively relevant to the same research question.

In several analyses, the survey provided the most direct item-specific evidence, while the focus group interviews contributed broader and more contextualised accounts. Conversely, in analyses where no corresponding survey item existed, the thematic analysis relied on focus group material alone. The final question concerning further development was addressed through a cross-cutting evaluative synthesis of the descriptive survey results and the qualitative analyses, rather than as a separate thematic analysis equivalent to TA1-TA9.

To further clarify the analytical structure, Appendix 3 provides an overview of the final qualitative themes generated for each thematic analysis (TA1-TA9). The appendix should be read as a navigational overview rather than as an additional analysis: it links the subordinate research questions, the analytical questions and the final theme structure that is elaborated in Chapter 3.

Table 1: Alignment between evaluation questions, survey items (Appx. 1), focus group interview material generated through the guide (Appx. 2) and qualitative analyses.

Subordinate research question	Quantitative survey items reported descriptively (cf. Appx. 1)	Qualitative analysis or synthesis	Focus group interview material relevant to the research question (cf. Appx. 2)	Open-ended survey responses included in the thematic analysis (cf. Appx. 1)
RQ1: What motivation and expectations did the students have for the internship?	-	TA1: What motivation and expectations did the students have for the internship?	Accounts of motivation, expectations and anticipated learning.	-
RQ2: How did the students experience the preparations for the internship?	2.1 Information from university 2.3 Felt prepared 2.5 Information on workplace	TA2: How did the students experience their own preparations for the internship?	Accounts of students' own preparation, information, uncertainty and pre-departure expectations.	2.2 Good information from university 2.4 Felt well prepared 2.6 Good information on workplace
-II-	3.1 Mentor prepared	TA3: How did the students experience the mentors' preparations for the internship?	Accounts of mentor contact, expectations of mentoring and perceived mentor readiness.	3.2 Mentor well prepared
-II-	3.5 Management and staff prepared	TA4: How did the students experience the management and other staff preparations for the internship?	Accounts of workplace organisation, management, staff and the local reception of the internship.	3.6 Management and staff well prepared
RQ3: How did the students experience the follow-up from the mentor and the workplace?	3.3 Opportunity to see mentor	TA5: How did the students experience the follow-up from the mentor?	Accounts of access to mentors, mentoring practices and support during the internship.	3.4 Opportunity to see mentor
-II-	3.7 Reception at workplace 3.9 Opportunity to see managers and employees	TA6: How did the students experience the follow-up from management, staff and others?	Accounts of reception, inclusion and interaction with management, staff, colleagues and others at the workplace.	3.8 Well received at workplace 3.10 Opportunities to talk to managers/employees
RQ4: How did the students experience the work tasks in the workplace and their relevance?	4.1 Relevance of work tasks 4.3 Interest in work tasks	TA7: How did the students experience the workplace tasks and their relevance?	Accounts of assigned tasks, role, disciplinary relevance and interest.	4.2 Relevance of work tasks 4.4 Interest in work tasks
RQ5: How did students perceive the contribution of assignments to their learning outcomes?	5.1 Assignment 1 and learning outcome 5.3 Assignment 2 and learning outcome 5.5 Assignment 3 and learning outcome	TA8: How did the reflection and presentation assignments contribute to the learning outcome?	Accounts of reflection, presentation and assignment-related learning, where addressed.	5.2 Assignment 1 contribution to learning outcome 5.4 Assignment 2 contribution to learning outcome 5.6 Assignment 3 contribution to learning outcome
RQ6: How did students rate the internship and its learning outcomes overall?	4.5 Satisfaction with learning outcome 6.1 Satisfaction with internship experience 6.3 Recommendation of internship to others	TA9: How did students rate the internship and its learning outcomes overall?	Accounts of overall learning, satisfaction, value and recommendation.	4.6 Satisfaction with learning outcome 6.2 Satisfaction with internship experience 6.4 Recommend internship to others
RQ7: How can organising the international internship in the field of geoscience be further developed?	All quantitative items, except background questions	Cross-cutting evaluative synthesis across descriptive survey results and TA1-TA9	Cross-cutting interview material on strengths, limitations and areas for development.	Relevant open-ended survey responses across the survey

2.6 Ethics

The processing of research data in the evaluation was assessed by Sikt - Norwegian Agency for Shared Services in Education and Research (reference number 275011). For an international reader, Sikt is a Norwegian government agency that provides shared services for education and research, including services that support responsible research data management and compliance with data-protection requirements (Sikt, n.d.). The Sikt assessment indicates that the processing of personal data was considered in relation to Norwegian and European data-protection regulations, including the General Data Protection Regulation (GDPR).

The students received written information about the study in line with current ethical and legal requirements, and they consented to participate. Participation was voluntary. Survey responses were collected anonymously through Nettskjema.no, and the recording and transcription of the focus group interviews were handled through Nettskjema.no in accordance with the project's data-protection procedures.

3 Findings

The findings chapter brings together descriptive survey results and qualitative thematic analyses. The survey figures show how responses were distributed across the participating students, while the qualitative material clarifies what students meant when they described the internship as more or less well prepared, supported, relevant and educationally valuable.

The chapter is organised around the main evaluation questions. Section 3.1 presents qualitative findings on students' motivation and expectations, while sections 3.2-3.6 combine quantitative and qualitative evidence on preparation, follow-up, workplace tasks, assignments and students' overall assessment of the internship.

A consolidated overview of the qualitative themes is provided in Appendix 3.

To guide the reader through this combined presentation, the relevant survey figures are used as descriptive entry points in each subsection. They should be read as an orientation to response patterns, while the subsequent qualitative analyses explain the meanings, examples and tensions behind those patterns.

3.1 Motivation and expectations for the internship



The analysis of qualitative material suggests three themes regarding the students' motivation and expectations for the internship: **testing possible academic and professional futures, seeking international exposure and networks, and expecting authentic learning through meaningful project work.** Across the interviews, students' motivation was rarely limited to one aim. They often combined disciplinary curiosity, career exploration, travel, networking and a wish to experience geology in unfamiliar institutional and cultural settings.

The first theme, **testing possible academic and professional futures**, captures how several students saw the internship as a way to explore what they might want to do next. Some hoped to clarify whether research, a master's degree or a specific subfield of geology was something they wished to pursue. One student explained that the internship was partly motivated by uncertainty about further study: "I was a little unsure if I really wanted to apply for a master's degree" and wanted it to "give a little extra motivation" (Group interview 1). Others were drawn by the possibility of testing their existing competence in more applied or research-oriented environments.

I applied because I find research and science quite interesting and I wanted to explore my possibilities in that field and I wanted to look into the window and see a bit of what it was about in practice. Luckily for me, I was able to do that in this project. (Group interview 5)

A second theme was **seeking international exposure and networks.** Students were strongly motivated by the chance to experience geology outside their own national and institutional context. This included curiosity about other academic

systems, research cultures, work-life patterns and everyday life abroad. For some, the international dimension made the opportunity qualitatively different from an internship at home. One student stated that it became “a little extra tempting to apply when you can travel to a new country” (Group interview 1). Another emphasised the professional value of contacts made abroad, noting that they had already used “a reference from Canada in a job” application (Group interview 1).

There is a desire to see geology out into the world and how it takes place there (...) and not least, the opportunity to use geology to travel around the world and see larger parts of the world through the eyes of geology. (Group interview 1)

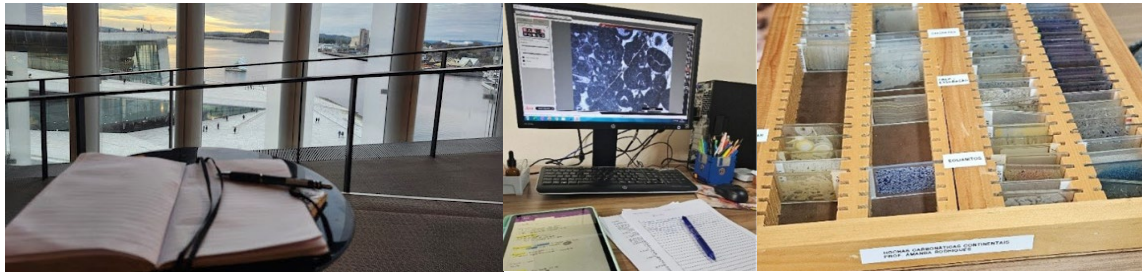
The third theme, **expecting authentic learning through meaningful project work**, concerns students’ hopes for concrete disciplinary and methodological development. Several expected to work with unfamiliar methods, equipment, fieldwork, data or research processes. These expectations were often ambitious but varied in how clear they were defined. One student expected “to learn more about the scientific methods” and “the general process of starting a scientific venture to figure out something that people don't already know” (Group interview 5). Others expected to apply existing knowledge in a new context rather than acquire extensive new theory. However, the material also shows that expectations were not always met, especially when projects changed, equipment was unavailable or the work differed from what had been described.

Like I didn't have too many expectations in getting that much more new sort of theoretical knowledge, but mainly just sort of applying what I already had (...) I think what I was mainly expecting to learn, which I did learn, was sort of carrying out a research project in this really short timeframe (...) And here you sort of have to hit the ground going (...) So that was my main expectations. And it all sort of ended up coming true. (Group interview 6)

Summary: Overall, students entered the internship with layered motivations: they wanted to learn geology in practice, experience another country, build networks and test future academic or professional directions. Their expectations were strongest when the internship was imagined as authentic participation in research or professional work. At the same time, the accounts indicate that such expectations depended on the quality of project planning, the match between advertised and

actual tasks, and the extent to which students were given access to meaningful work.

3.2 Preparation and information before the internship



Section 3.2 examines the preparatory phase of the internship. It considers preparation as a shared responsibility involving the student's own work, information from the home university, mentor readiness, and the practical and social preparedness of the workplace.

The section therefore moves cumulatively from students' own preparation to mentor preparation and then to the preparedness of management and staff at the host workplace.

3.2.1 The student's own preparation and information before the internship

This subsection focuses on students' own preparation before departure and at the point of arrival. It includes their assessment of university information, their personal sense of readiness and the extent to which they had received useful information about the workplace.

Figures 1-3 should be read together because they capture three connected dimensions of preparation: information from the university, students' own sense of readiness and information about the workplace.

Figure 1: Information prior to the internship from my university

☒ I had good information prior to my international internship from my university

Antall svar: 21

Svar	Antall	% av svar	Diagram
Strongly agree	12	57.1 %	 57.1 %
Partly agree	4	19 %	 19 %
Nor agree or disagree	3	14.3 %	 14.3 %
Partly disagree	2	9.5 %	 9.5 %
Strongly disagree	0	0 %	0 %

Figure 2: On feeling well prepared for the internship

☒ I felt well prepared for my international internship

Antall svar: 21

Svar	Antall	% av svar	Diagram
Strongly agree	11	52.4 %	 52.4 %
Partly agree	5	23.8 %	 23.8 %
Nor agree or disagree	3	14.3 %	 14.3 %
Partly disagree	2	9.5 %	 9.5 %
Strongly disagree	0	0 %	0 %

Figure 3: Information on the workplace

☒ I had good information on the workplace where I should do my internship

Antall svar: 21

Svar	Antall	% av svar	Diagram
Strongly agree	7	33.3%	 33.3%
Partly agree	10	47.6%	 47.6%
Nor agree or disagree	2	9.5%	 9.5%
Partly disagree	1	4.8%	 4.8%
Stromngly disagree	1	4.8%	 4.8%

As shown in figures 1-3, students generally saw the preparatory information as adequate. The average scores for information from the university and for feeling well prepared were both 4.2, while information about the workplace was slightly lower at 4.0. This pattern provides a positive quantitative backdrop, but the qualitative accounts below nuance it by showing that preparation was often sufficient at a general level while still uneven in timing, detail and workplace specificity.

Three themes were identified: **being sufficiently prepared, but often only at a general level, self-directed academic preparation for unfamiliar work**, and **the limits of preparation when information, timing or expectations were unclear**. Overall, students tended to experience themselves as reasonably prepared, but preparedness was often provisional. They could organize travel, read background material and draw on prior studies, yet several felt that important details about tasks, workplace conditions or expectations only became clear after arrival.

The first theme, **being sufficiently prepared, but often only at a general level**, captures students' sense that they had enough information to travel and begin the internship, but not always enough to form a precise understanding of what awaited them. Survey responses reflected this balance. One student wrote, "I had all the information it was reasonable to have" (Survey, Q2.2), while another noted that

“things remained a bit blurry on the details” (Survey, Q2.2). Several had a general overview of the project, host institution or travel arrangements, but still lacked more concrete knowledge about everyday work, office space, methods or local procedures.

I had decent information prehand about the workplace. I didn't research it a lot prehand, but I knew the name, the plan and who I was working with.
(Survey, Q2.6)

The second theme was **self-directed academic preparation for unfamiliar work**. Students often described preparation as something they actively did themselves, by reading papers, researching the field, reviewing relevant methods or trying to anticipate what knowledge they would need. This was particularly important when the internship involved a new subfield or unfamiliar research environment. One respondent wrote that they “felt well prepared coming off my studies,” but were uncertain about “the level of knowledge or technical expertise” expected in the international context (Survey, Q2.4). Another emphasised that preparatory materials helped them become “up to speed with the internship” (Survey, Q2.4).

There was like a lot of uh sort of papers to to read off on to sort of get get more versed in the field (...) jumping into an unfamiliar area was also possible (...) I ran into and had to think about how I'm going to supplement this knowledge.
(Group interview 2)

The third theme concerns **the limits of preparation when information, timing or expectations were unclear**. Students' own preparation could be constrained by late materials, unclear communication, logistical issues or differences between what they had been told and what they encountered. One survey respondent wrote that “the preparation material was relevant and useful,” but was provided “relatively late” (Survey, Q2.4). Another noted that what they were told before travelling “did not match what I was met with during the internship” (Survey, Q2.4). In the interviews, students similarly pointed to cases where the absence of a plan, unclear workplace arrangements or unavailable equipment made it difficult to prepare meaningfully.

I got my preparation material only some days before I arrived (...) it was not a good time to sit down and read many hundred pages of preparation material. So I think

to save some time, it would be a great thing to have gotten this a great amount of time before I did. (Group interview 5)

Taken together, the findings suggest that students generally experienced their own preparations as adequate enough to enter the internship, but not always as deep or specific enough to feel fully ready. Preparedness was strongest when students had early access to relevant information, contact with supervisors, clear expectations and time to read or practise. Where information was late, general or poorly aligned with the actual internship, students had to rely more on improvisation and learning after arrival.

3.2.2 The mentor's preparation and information before the internship

This subsection turns to mentor preparation before the internship. It examines whether students experienced the mentor as having a clear academic plan, relevant preparatory material and sufficient practical readiness to receive them.

Figure 4 provides the quantitative entry point for this discussion; the qualitative material then specifies what students meant by a well-prepared mentor.

Figure 4: Experience of mentor preparation

☒ I felt that the mentor at the workplace I visited was well prepared

Antall svar: 20

Svar	Antall	% av svar	Diagram
Strongly agree	15	75%	 75%
Partly agree	2	10%	 10%
Nor agree or disagree	1	5%	 5%
Partly disagree	2	10%	 10%
Strongly disagree	1	5%	 5%

Figure 4 points to a predominantly positive assessment of mentor preparation, with most respondents agreeing that the mentor was well prepared. The distribution nevertheless includes some less positive responses, suggesting that mentor preparation varied between placements. The qualitative analysis therefore helps specify what students understood as preparedness: clear tasks, early communication, responsiveness and the capacity to handle changes.

The students' accounts point to four themes: **structured academic preparation**, **relational and practical readiness**, **adaptive handling of unexpected changes**, and **vulnerability when mentor preparation was weak or mentors were absent**. Mentor preparation was experienced as more than having a project ready. Students also valued being welcomed, oriented, supported and given access to people, tools and tasks that made the internship workable from the start.

The first theme, **structured academic preparation**, concerns mentors' ability to provide a clear project, relevant materials and a feasible plan. Several students described mentors who had prepared tasks, background literature, documents or stepwise plans. In the survey, one student wrote: "My supervisor prepared for me a document that describes what I should do as tasks with papers and information for reference. It helped me a lot" (Survey, Q3.2). Another noted that "The mentor had a plan for the internship, and was definitely well prepared" (Survey, Q3.2).

The mentor had a very clear plan for what to do, and it really fit in nicely. It was on the edge of my skills, so I was building... some new skills in computation, but a lot of it was also super familiar. So it was the perfect fit, in my opinion. (Group interview 2)

The second theme was **relational and practical readiness**. Students often judged mentor preparation through everyday acts of hosting: being met on arrival, shown around, helped with practical matters, introduced to colleagues and reassured in an unfamiliar setting. One survey respondent wrote that the mentor was "supportive and approachable" (Survey, Q3.2), while another stated that the mentor "helped me immensely, not just for work related but also in other aspects as well" (Survey, Q3.2).

He came and picked me up at the airport the day i came he was always in contact me making sure it was all right giving me tips around the city. I could always reach him by phone or by his office. He would always make time to talk with me. (...) So we had a lot to discuss with it. And he also showed me some of his samples to compare with it. So both intellectually and on a personal level, he invited me and his other students to dinner at his home about two times. And he was always making sure I was feeling all right. (Group interview 4)

The third theme, **adaptive handling of unexpected changes**, captures how some mentors were experienced as prepared because they could respond constructively when the original plan changed. In these cases, preparedness did not mean that everything went according to plan, but that mentors had the capacity to redirect students towards meaningful work. One survey respondent described having “plans already set” while also being able “to try out different things and also change the plans” (Survey, Q3.2).

When this problem occurred, she was very quick to give us another task we could do, which was very relevant to the project still. I think she did a good job on actually guiding us through how to do this. (Group interview 3)

The fourth theme was **vulnerability when mentor preparation was weak or mentors were absent**. A smaller but important part of the material shows that students’ experiences could become fragile when mentors were not present, had unclear plans, or had not prepared enough work. One survey response stated: “It felt kind of like a surprise when I got there. Also there was no plan made before I got there and things were very much day by day, and when I got a plan it was not followed” (Survey, Q3.2).

I had a good relationship with my mentor. The only problem was that he wasn't there (...) It wasn't that he had a bad relationship with him, it was just that he wasn't there. (Group interview 1)

Overall, students experienced mentors as well prepared when they combined academic planning with availability, practical support and relational care. Clear tasks, relevant preparatory material and early communication mattered, but so did being welcomed into the workplace and having someone who could adapt when plans changed. Conversely, weak preparation became visible when students arrived to unclear expectations, absent mentors or insufficiently planned tasks. The findings therefore suggest that mentor preparation should be understood as both academic and organisational: students needed a project, but they also needed a mentor who was ready to receive them.

3.2.3 The management and staff preparation for the internship

This subsection addresses the preparation of management and staff at the host workplace. The focus is on the broader organisational setting, including access to

workspaces, equipment, administrative routines and the readiness of staff to include the student in everyday work.

Figure 5 serves as the descriptive starting point before the qualitative material adds examples of how organisational readiness was experienced in practice.

Figure 5: Management and staff preparation

☒ I felt that the management and staff at the workplace i visited were well prepared for my internship

Antall svar: 21

Svar	Antall	% av svar	Diagram
Strongly agree	12	57.1 %	 57.1 %
Partly agree	6	28.6 %	 28.6 %
Nor agree or disagree	3	14.3 %	 14.3 %
Partly disagree	0	0 %	0 %
Strongly disagree	0	0 %	0 %

Figure 5 shows a strong overall result for management and staff preparation, with respondents clustered in the positive categories and no disagreement. This supports the impression that workplaces were generally ready to receive students. The qualitative material below adds important detail by distinguishing between visible organisational readiness, social inclusion and the more fragile cases where timing or communication made preparation less convincing.

Three themes were identified: **workplace readiness through practical arrangements, being included in a prepared local community, and organisational fragility when arrangements were incomplete or poorly timed.** Students generally experienced management and staff as well prepared when the workplace had arranged access, workspaces, information and everyday support before arrival. At the same time, the accounts show that workplace preparation was not only administrative. It also concerned whether students were drawn into the social and academic life of the institution.

The first theme, **workplace readiness through practical arrangements**, concerns the concrete infrastructure that made it possible for students to begin the internship: office space, computers, access cards, emails, laboratory access, paperwork and help with local procedures. Several survey respondents described such arrangements positively. One wrote that “Keycard and office space was ready when I came” (Survey, Q3.6), while another stated that “We didn’t struggle with getting access cards to the university and they had university emails prepared for us” (Survey, Q3.6). These forms of preparation mattered because they reduced uncertainty at the beginning of the stay and signalled that the student was expected.

The environment, they gave me a place to stay with a computer, and everything prepared for me (...) And the administration was very, very professional and had everything ready. So yeah, I had all the key cards ready and stuff for me when I came. (Group interview 4)

The second theme was **being included in a prepared local community**. Students often evaluated the workplace through how they were received by staff, PhD students, master’s students and others around the project. A prepared workplace was therefore one where people knew that the students were coming, showed interest in their work and made room for them in everyday academic life. In the survey, students wrote that “Everyone was welcoming, they treated us good” (Survey, Q3.6), and that “The staff was amazing and also other students were very welcoming” (Survey, Q3.6). In several interviews, inclusion was described through small but important gestures: being invited to meals, seminars, celebrations, field activities or informal conversations.

The co-workers seemed quite tightly knit and we were made to feel like we were actually a part of the faculty. We didn't necessarily feel like students or (...) only like visitors we were always met with a smile or with a hello or asking how our projects are doing (...) We got our own little office as well, together with the post grads. (...) If we struggled with our project, we could ask whoever we wanted, it felt like, because everybody was so interested in what we were doing. (Group interview 5)

The third theme, **organisational fragility when arrangements were incomplete or poorly timed**, captures the more uneven experiences. Some students arrived during holiday periods, when few people were present. Others experienced delays, unclear

documentation, unavailable equipment or weak coordination between institutions. The survey material reflects this mixed picture: one respondent noted “confusion in regard to the SIN number” and “the Visitor Record” (Survey, Q3.6), while another wrote that “some aspects could have been communicated earlier or in more detail” (Survey, Q3.6). A further respondent stated that they had to “improvise to find other places where the work could be done” because they could not proceed at the planned facility (Survey, Q3.6).

I was slightly unlucky with the actual internship because my professor wasn't informed that I was actually gonna arrive when I arrived (...) So academically, it wasn't as what I had hoped for, but it was still a very interesting experience to experience a completely different education system. (Group interview 6)

Taken together, the qualitative findings show that management and staff preparation was strongest when practical arrangements, institutional coordination and social inclusion were in place before arrival. Where access, equipment, communication or staffing were insufficiently prepared, students' participation became more dependent on improvisation. Organisational readiness therefore involved not only administrative arrangements, but also the workplace community's capacity to make students feel expected and included.

Summary: Across Section 3.2, the survey results and qualitative accounts suggest that students were generally sufficiently prepared to begin the internship, but that the quality of preparation depended on how concrete, timely and locally anchored the information was. The strongest experiences occurred when students received early information, mentors had prepared meaningful tasks, and the workplace had practical and social arrangements in place before arrival. The more critical accounts show that preparation became fragile when expectations, logistics or responsibilities were unclear. The main implication is therefore not that preparation was weak overall, but that it should be made more consistent across placements, especially by clarifying tasks, contact points and workplace arrangements before students arrive.

These accounts are therefore treated primarily as evidence of preparation and readiness at the point of arrival; Section 3.3 turns to the continuing support students experienced after the internship had begun.

3.3 Follow-up from mentors and the workplace



Section 3.3 examines follow-up during the internship. It moves from the preparatory conditions described above to students' experiences of ongoing support, first from mentors and then from management, staff and others in the workplace.

While Section 3.2 addressed how prepared mentors and workplaces appeared before and at the beginning of the internship, this section focuses on support during the internship itself.

As in the previous section, the survey figures orient the reader to the overall response pattern, while the qualitative material describes how follow-up was actually encountered during the internship.

3.3.1 The mentor's follow-up

This subsection focuses on follow-up from the mentor during the internship. The emphasis is on the mentor's availability, academic involvement and capacity to help students sustain progress when tasks are demanding or uncertain.

Figure 6 is presented first to show the overall pattern of mentor access before the analysis turns to students' accounts of what such access involved.

Figure 6: On opportunities to meet mentor during internship

☒ I had good opportunity to see my mentor during my international internship

Antall svar: 21

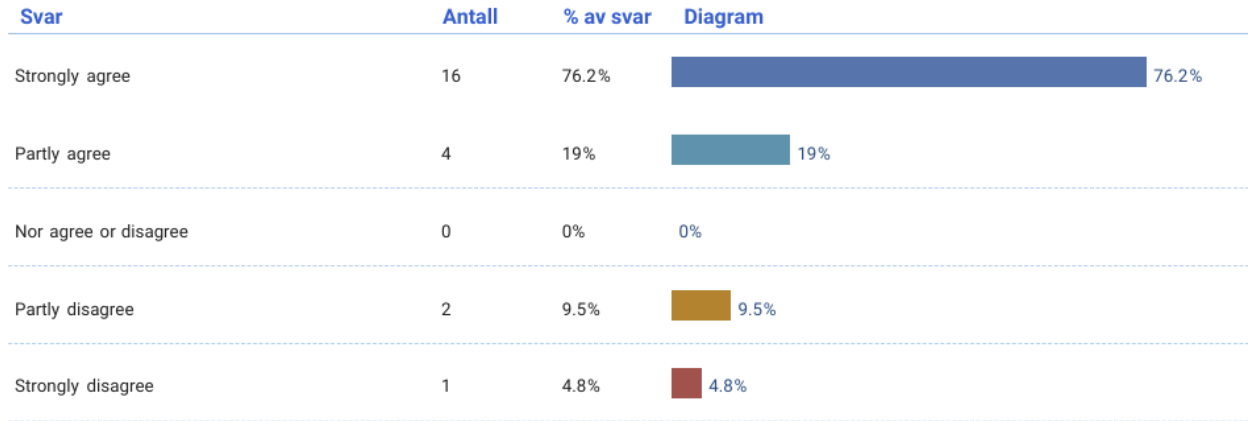


Figure 6 indicates a very positive overall experience of mentor access, with a high average score of 4.8. This suggests that most students had opportunities to meet or contact their mentor during the internship. The qualitative accounts below show why this mattered: mentor follow-up was experienced not only as scheduled supervision, but as responsive presence, feedback and help in keeping the work moving.

The students' accounts point to three main themes: **mentor follow-up as accessible and responsive presence**, **mentor follow-up as academic scaffolding and motivation**, and **the vulnerability of the internship when mentor contact was limited or delegated too heavily**. Across the material, good follow-up was not necessarily described as constant supervision, but as dependable access, clear guidance and a mentor who took responsibility for both the academic and relational dimensions of the stay.

The first theme, **mentor follow-up as accessible and responsive presence**, captures how students valued mentors who were easy to contact. Students valued mentors who were easy to contact, physically nearby, quick to respond and attentive to whether the student was progressing. This was reflected both in the interviews and survey responses. One respondent wrote that they had “frequent and easy access to my mentor throughout the internship, allowing for regular discussions,

guidance, and follow-up” (Survey, Q3.4). Others described almost daily contact, offices located close to each other, or mentors who answered quickly by email or in person.

And if I had questions, I sent an email, and then it took maybe a maximum of half an hour before I had received an answer by email, with an explanation of what to do. (...) Then it was also just a matter of sending an email shortly, and I got an answer to what I should do next. In relation to my next task. (Group interview 1)

This kind of accessibility appears to have reduced uncertainty and helped students maintain momentum. Several students also connected availability to a sense of being looked after during the stay. Mentors checked in, made themselves reachable, helped students deal with practical questions, or made sure they were comfortable. One survey respondent noted: “He checked in often” (Survey, Q3.4). Thus, follow-up was experienced as both practical and personal.

The second theme, **mentor follow-up as academic scaffolding and motivation**, concerns the importance of mentors who helped students understand the work, interpret data, organise tasks and develop new skills. In these cases, follow-up was closely tied to learning outcomes: mentors did not simply assign work, but helped students make sense of why the work mattered and how to proceed. One student described “weekly meetings with my mentor to learn the principles behind each machine I was using in the lab and to discuss the data I was generating” (Survey, Q3.4). Another described the mentor’s enthusiasm and the use of “weekly milestones” as important for motivation and structure (Group interview 2).

Marlina, she would come down to, when I was working on the ICP-MS laser, she would come down and she would look at the data and she would like, you know, this is good, this is bad. (...) And it felt just like a really synergetic flow of information where I could ask questions, both good and bad, and get essentially just quite good answers back. (Group interview 5)

Such accounts suggest that effective mentor follow-up combined expertise with responsiveness. Students learnt through iterative dialogue, feedback on concrete work and opportunities to ask questions as problems emerged. The mentor relationship could therefore resemble a form of close academic apprenticeship,

where the student was expected to contribute, but with support calibrated to the task.

The third theme, **the vulnerability of the internship when mentor contact was limited or delegated too heavily**, captures the more uneven experiences in the material. Some students experienced limited contact because the mentor was absent, located elsewhere, very busy, or had delegated much of the day-to-day support to students or other staff. Delegation could work well when it was coordinated and when other staff were prepared, but it became problematic when students felt they had no clear academic anchor. One survey respondent wrote that “The mentor was located at a different institution, which somewhat affected communication” (Survey, Q3.4), while another stated: “I was just given to the students of the mentor and did not see her a lot” (Survey, Q3.4).

I did not see my mentor until week three of my stay. (...) My mentor had only planned a four-day field excursion for me with a graduate class where everything was in Portuguese. She did not try to include me at all. (Group interview 6)

These weaker experiences point to the importance of clarifying expectations before the internship begins. Students seemed able to tolerate busy mentors, changing plans and support from wider research groups, provided that someone took active responsibility for their learning and inclusion. Where this responsibility was unclear, the internship could become fragmented, with students waiting for direction or relying on informal substitutes.

Overall, the students experienced mentor follow-up as most successful when mentors were both available and academically engaged. The strongest accounts combined quick access, structured guidance, project-related feedback and a sense of being welcomed as a temporary member of the research environment. The less successful cases underline that mentor presence cannot be assumed; it needs to be planned, communicated and sustained throughout the internship.

3.3.2 Follow-up from management, staff and others

This subsection considers follow-up from the wider workplace, including management, staff, PhD students and other colleagues. It therefore captures the more distributed forms of support that surrounded the formal mentor relationship.

Figures 7 and 8 should be considered together because they capture both the initial workplace reception and students' continuing opportunities to speak with managers and staff.

Figure 7: Reception at the workplace

☒ I was well received at the place for my internship

Antall svar: 21

Svar	Antall	% av svar	Diagram
Strongly agree	20	95.2%	 95.2%
Partly agree	0	0%	0%
Nor agree or disagree	1	4.8%	 4.8%
Partly disagree	0	0%	0%
Strongly disagree	0	0%	0%

Figure 8: Having opportunity to talk with management and staff

☒ I had good opportunities to talk with managers and employees at my internship workplace

Antall svar: 21

Svar	Antall	% av svar	Diagram
Strongly agree	18	85.7%	 85.7%
Partly agree	2	9.5%	 9.5%
Nor agree or disagree	1	4.8%	 4.8%
Partly disagree	0	0%	0%
Strongly disagree	0	0%	0%

Figures 7 and 8 show particularly strong positive patterns. Students reported being well received at the workplace and having good opportunities to talk with managers and staff. Qualitative analysis develops this finding by showing that workplace follow-up often took the form of everyday inclusion, informal conversations and access to expertise, while also depending on timing and local organisation.

The analysis of qualitative material suggests three closely related themes: students experienced follow-up from management, staff and others through **a welcoming workplace climate**; through **everyday access to a broader community of expertise**; and, more unevenly, through **organisational arrangements that either opened or restricted opportunities for participation**. Compared with mentor follow-up, this form of support was often less formal, but it mattered considerably whether students felt included, able to ask questions and able to understand the workplace as a social and professional environment.

Many students described **being well received by the wider workplace**. This included practical help on arrival, being introduced to people, access to offices and laboratories, and informal signs of recognition during the working day. In the survey, students wrote that “Everyone was welcoming and curious” (Survey, Q3.8), and that “there was no problem getting in touch with the employees and managers at the

university” (Survey, Q3.8). Several accounts suggest that being welcomed was not only a matter of friendliness, but also of being positioned as someone who belonged sufficiently to take part in ordinary workplace life.

From airport pickup at the first day to airport drop at final day, there was always someone to look after whom I could find help from. (Survey, Q3.8)

This sense of inclusion appears to have supported both well-being and learning. Students appreciated when staff and PhD students showed curiosity about their projects, invited them to presentations or social events, and helped them find their way in the local setting. Another survey respondent noted that students and staff made efforts to communicate despite language barriers and to inform them about social events they might otherwise have missed (Survey, Q3.8). These comments indicate that follow-up from the workplace was experienced through small, repeated forms of attention that made the internship feel less isolated.

A second theme concerns **access to knowledge beyond the formal mentor relationship**. In several cases, other employees, PhD students, master’s students and laboratory staff became important resources. Students learnt through conversations in offices, laboratories, meetings, lunch breaks and seminars. One survey response captures this clearly: “I had opportunities to talk with managers and employees daily during lunch, weekly in lab meetings, and whenever needed in the lab” (Survey, Q3.10). Another student wrote that managers and employees were “approachable and available, and treated us as colleagues, which made discussions open and informal while remaining professionally valuable” (Survey, Q3.10).

The office spaces in my particular section were super nice and set up, I think, in a way to really help interactions happen more often. (...) there’s much more emphasis (...) on just chatting with people (...) some new insights, ideas on my project I might not have had if it wasn’t for those conversations. (Group interview 6)

These accounts show that learning was supported by the ecology of the workplace, not only by scheduled supervision. Access to people with different forms of expertise helped students interpret their work, see how research environments functioned and gain a more concrete sense of professional practice. In one

interview, a student described how laboratory members and research students contributed with “their own insights” into how the project could be improved and carried out more efficiently (Group interview 5). In this respect, follow-up from staff and others broadened the internship from an individual project into participation in a working academic community.

At the same time, the material shows that this **broader workplace follow-up was uneven**. Some students arrived during quiet periods, when staff and students were away, while others had limited opportunities to speak with employees or managers. Survey responses included more reserved statements such as “We did not really have a chance to speak with many employees” (Survey, Q3.10) and “Didn't have many staff to see during the internship” (Survey, Q3.8). These experiences suggest that being formally placed at a workplace did not automatically lead to integration into its everyday life.

I felt we were well received in the beginning. We were picked up at the airport. (...) But beyond that, I feel that we got a bit in a bad time in a way then. The fact that we come in the middle of summer when everyone is on vacation and things like that. So, there weren't that many people to get to know in the beginning. (Group interview 1)

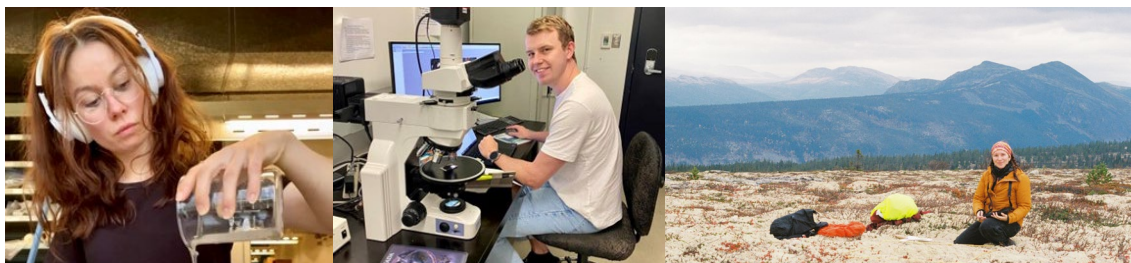
The timing and organisation of the internship therefore shaped the quality of follow-up. Students could cope with some independence, but weaker workplace presence reduced both social belonging and access to informal learning. In the more problematic cases, students described being dependent on students or staff who were not always available or being placed in settings where the planned work was difficult to carry out. One student explained that “the students didn't really follow me up as well as i think a professor who has to be there the whole day would have done” (Group interview 6). Such accounts underline that follow-up from the wider workplace needs to be actively organised, particularly when mentors are busy, absent or dependent on other staff to support the student.

Taken together, the qualitative findings show that follow-up from management, staff and others was strongest when students had regular access to a wider workplace community and were included in both professional and social activities. Weaker experiences were mainly associated with limited staff presence, unclear

responsibility and insufficiently organised support. Follow-up therefore depended not only on individual goodwill, but also on whether the host workplace actively facilitated students' participation.

Summary: Overall, Section 3.3 presents follow-up as one of the clearest strengths of the internship, while also showing why such support cannot be left implicit. The survey findings indicate high levels of mentor access and positive workplace reception, and the qualitative material explains this through students' accounts of responsive mentors, academic feedback, practical help and inclusion in the wider work environment. At the same time, the weaker experiences show that follow-up became vulnerable when mentors were absent, staff were unavailable, or responsibility was distributed without clear coordination. Strong follow-up therefore appears to require both an engaged mentor and a workplace culture where students are actively included in everyday academic and professional life.

3.4 The work tasks



Section 3.4 examines students' experiences of the work tasks themselves. This is a central part of the evaluation because the tasks formed the main arena in which students could connect their geoscience education to authentic research, professional practice and future career possibilities.

The two figures below provide the quantitative entry point to the section by distinguishing between perceived relevance and perceived interest.

Figure 9: Relevance of work tasks

☒ I think the task I had at my internship workplace were relevant for me

Antall svar: 21

Svar	Antall	% av svar	Diagram
Strongly agree	15	71.4%	 71.4%
Partly agree	4	19%	 19%
Nor agree or disagree	2	9.5%	 9.5%
Partly disagree	0	0%	0%
Strongly disagree	0	0%	0%

Figure 10: Interest in the work tasks

☒ I thing the tasks I performed at my internship were interesting

Antall svar: 21

Svar	Antall	% av svar	Diagram
Strongly agree	16	76.2%	 76.2%
Partly agree	2	9.5%	 9.5%
Nor agree or disagree	2	9.5%	 9.5%
Partly disagree	0	0%	0%
Strongly disagree	1	4.8%	 4.8%

Figures 9 and 10 show that workplace tasks were rated highly for both relevance and interest, with average scores of 4.6 and 4.5. Most students therefore experienced the tasks as meaningful and engaging. The qualitative analysis below explains this positive pattern by showing that relevance was strongest when tasks connected to

students' disciplinary interests, involved authentic methods or projects, and provided an appropriate level of challenge.

The material indicates four themes: **alignment with disciplinary interests and future trajectories, novel and practically engaging tasks, authentic participation in research processes**, and **limited or mismatched tasks**. Overall, task quality mattered not only because students wanted something to do, but because the tasks shaped whether the internship felt like relevant professional experience, meaningful academic development, or merely an interesting stay abroad.

Many students experienced the tasks as relevant because they connected directly to their studies, master's projects or possible future work. In this first theme, **alignment with disciplinary interests and future trajectories**, relevance was not only understood as a match with existing competence, but also as an opportunity to test academic and professional interests. In the survey, one student wrote that the tasks were "highly relevant to my academic background and interests" and "very engaging and rewarding" (Survey, Q4.2). Another explained: "I felt like it was relevant to know if this was something i want to perceive further. So, I learned what i liked and what i did not" (Survey, Q4.2).

(The coordinator) liked the project that I presented, it was my current project. So, he arranged it so if my supervisors could help arrange something, it could be a part of the project. (...) So it became my own project, which was just great for me. And with the added new method, my thesis will be the first to present pretty much."
(Group interview 4)

This kind of alignment gave the tasks a clear purpose. Students were especially positive when the work contributed to their own academic development, expanded an ongoing project or gave access to methods and materials they would otherwise not have encountered. The survey responses similarly emphasise continuity between internship work and future study or employment: "Building on my master's project. Got a new angle" (Survey, Q4.2), and "I am study geology, so this internship provided skills i would need going forward" (Survey, Q4.2).

The second theme, **novel and practically engaging tasks**, concerns interest and engagement. Students often described the tasks as interesting when they involved unfamiliar methods, new equipment, fieldwork or a problem that felt open-ended. One survey respondent wrote that “The task was an application of my technical skills to an exciting problem that I didn't have prior experience with” (Survey, Q4.4). Another emphasised the investigative quality of the work: “The investigative aspect of the project made it really interesting to me” (Survey, Q4.4). In these accounts, interest came from being able to do something that felt both intellectually demanding and practically concrete.

What we were doing is that we were using drone images. Then we are transforming them to DEMs, orthomosaic. Then from there, transferring them to ArcGIS. Then trying to digitize the crevices on the glacier. (...) for me, that experience from the start, at the finish was such an amazing one. (Group interview 5)

The tasks were also valued when they allowed students to encounter geology as practice rather than only as coursework. Several students described learning to use software, laboratory equipment, mapping tools, microscopes or field methods. This practical dimension seems to have made the work memorable and, in some cases, changed how students understood their own competence. One student noted in the survey that “Some of the concepts were new to me, which was an addition to my knowledge and I found them interesting” (Survey, Q4.4).

A third theme was **authentic participation in research processes**. Workplace tasks contributed most strongly to learning when students were included in real research processes, with some responsibility for producing, interpreting or presenting work. Students described tasks that required them to move between reading, fieldwork, data collection, analysis, discussion and revision. The learning was not always smooth, but it was experienced as valuable because it resembled the tempo and uncertainty of actual research work.

So, at first I got this research papers from the professors that lead this project (...) And so when we went out in the field, no one knew what to expect. We just went out there and I had to learn while working. (...) So, we were probably out for like eight to ten hours and then we did work at nighttime (...) and then we had a meeting discussing what everybody had like collected of data and showed each

other's maps and they like got my feedback and then we went back in out in field and it was like kind of a repeat after that. (Group interview 5)

This type of work gave students a sense of responsibility and progression. Some described having to learn quickly because they wanted to contribute something useful. Others valued being allowed to co-develop a project, work with their own samples or apply knowledge in a new context. One survey respondent captured this combination of fit and agency by explaining that the tasks “were perfectly suited to my expertise” because they involved coding, data visualization and co-development with the mentor (Survey, Q4.2). The strongest task experiences therefore combine relevance, autonomy and guidance.

The fourth theme, **limited or mismatched tasks**, captures the more critical experiences in the material. Some students described tasks as useful but limited; others experienced them as repetitive, too simple, or different from what had been promised. In the survey, one student wrote: “Even though tasks were somewhat limited, I feel like I learned something that will be useful in the future” (Survey, Q4.2). Others were more critical: “Did not really get a task” (Survey, Q4.2), and “just had tiny things to work on that seemed like a way to just use time” (Survey, Q4.4).

I felt like I showed up every day, and then it was like I wasn't quite sure what I'm going to do today, so I just waited to get a message, and then I'll do it. (...) often, I finished my assignments before lunch. Then it was a bit like, what should I do now? (Group interview 1)

These weaker experiences show that relevance depends on more than the general subject area. A placement could be in a relevant geological setting yet still feel less meaningful if tasks were not sufficiently developed, if equipment was unavailable, or if the planned work did not materialise. Some students also found that they mainly practiced skills they already had, rather than acquiring new knowledge. This was not always negative, as it could consolidate competence, but it made the learning outcome feel narrower.

Summary: The findings in Section 3.4 indicate that workplace tasks were central to students’ learning and overall satisfaction. The high survey ratings for task relevance and interest are supported by qualitative accounts of authentic research

participation, practical responsibility, new methods and links to students' academic trajectories. However, the more critical accounts show that relevance cannot be assumed simply because a placement is located in a relevant professional or research setting. Tasks need to be sufficiently planned, sustained and adaptable if they are to provide meaningful learning. The quality of the work tasks therefore appears to be one of the most decisive conditions for the educational value of the internship.

3.5 The assignments



Section 3.5 examines the assignments included in the internship. Unlike the workplace tasks, these assignments were designed to support documentation, reflection and dissemination of experience, and their value therefore depended on how students connected them to their learning process.

Because this section concerns three assignments, the figures are presented together before the qualitative analysis to show the comparative pattern across assignment types.

Figure 11: Perceived contribution of assignment 1 to learning outcome

☒ **Assignment # 1 Internship experiences, descriptions of internship contents. the daily life in internship" contributed significant to my learning outcome**

Antall svar: 21

Svar	Antall	% av svar	Diagram
Strongly agree	7	33.3%	 33.3%
Partly agree	5	23.8%	 23.8%
Nor agree or disagree	4	19%	 19%
Partly disagree	5	23.8%	 23.8%
Strongly disagree	1	4.8%	 4.8%

Figure 12: Perceived contribution of assignment 2 to learning outcome

☒ **Assignment # 2 "Individual reflection note aligning Geoscience education applied in an international internship" contributed significant to my learning outcome**

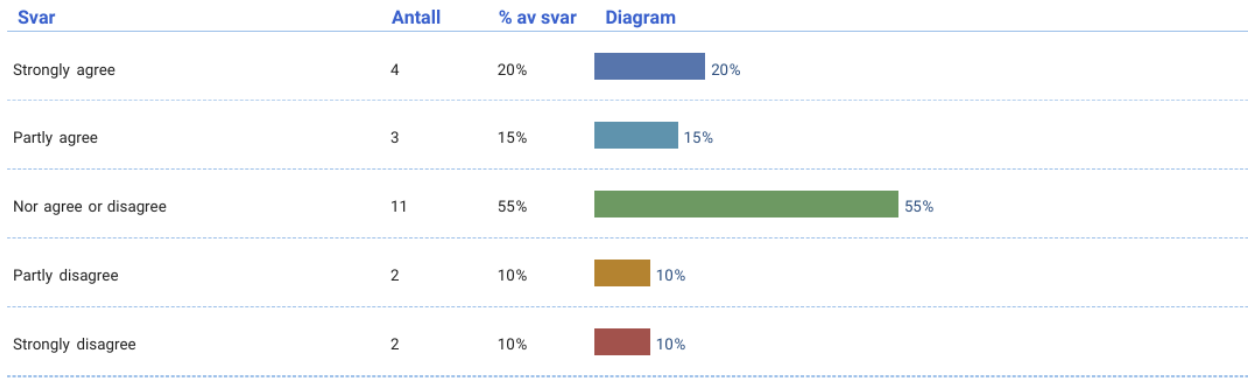
Antall svar: 21

Svar	Antall	% av svar	Diagram
Strongly agree	6	28.6%	 28.6%
Partly agree	7	33.3%	 33.3%
Nor agree or disagree	5	23.8%	 23.8%
Partly disagree	3	14.3%	 14.3%
Strongly disagree	0	0%	0%

Figure 13: Perceived contribution of assignment 3 to learning outcome

☑ **Assignment # 3 "Disseminating and communicating Geoscientific competence in an international arena" (With blogs and SoMe contributed significant to my learning outcome.**

Antall svar: 20



Figures 11-13 show a more moderate and mixed quantitative picture than the sections on follow-up and workplace tasks. Assignment 1 and assignment 2 both received average scores of 3.7, while assignment 3 received a lower average of 3.5. This suggests that students did not generally experience the assignments as the strongest contributor to learning, but the qualitative analysis below shows that they could still support reflection, consolidation and communication when their purpose was clear.

The material suggests three themes: **retrospective consolidation rather than direct learning**, **linking internship experience to geoscience education and professional practice**, and **communication and dissemination as valuable but unevenly learning-oriented**. Compared with the workplace tasks themselves, the assignments were often described as secondary to the main learning process. However, they still had value for several students by helping them revisit, organise, articulate and communicate what the internship had meant.

The first theme, **retrospective consolidation rather than direct learning**, captures a recurring distinction in the students' accounts. Many students did not experience the assignments as producing substantial new learning in themselves. Instead, they saw them as a way of documenting or revisiting learning that had already taken place during the internship. One survey respondent wrote that the assignment "felt more

like a documentation of what learning goals I had achieved rather than something that contributes to the learning outcome itself” (Survey, Q5.2). Another stated: “Because I learned almost nothing new from writing this. I did learn a lot from being there and actually doing the internship however” (Survey, Q5.2). These responses suggest that the assignments were sometimes experienced as reflective afterwork rather than as integrated learning activities.

I don't really feel like it had a huge or really any impact on my learning, but it was more often a way to reflect upon what I had already learned. (...) I wrote this when I was already back in Norway. So, to sit and reminisce about the traveling and the internship from start to finish was quite nice. (Group interview 5)

This does not mean that the assignments were viewed negatively. Several students described them as “nice” or useful for putting experiences into words, even when they were reluctant to describe them as major contributors to learning. For example, one survey respondent wrote: “It was good to be able to reflect on what I experienced and learned” (Survey, Q5.2), while another said that the assignment “probably contributed slightly to my ability to write similar texts” (Survey, Q5.2). The assignments thus appear to have supported articulation and memory, even where students separated this from the core learning outcome.

The second theme, **linking internship experience to geoscience education and professional practice**, was especially visible in responses to the individual reflection note. This assignment seems to have worked better for students when it asked them to connect what they had done abroad with their prior studies, disciplinary knowledge and emerging professional understanding. One student wrote that the task “tied things together at the end” (Survey, Q5.4), while another stated that “The reflection note strengthened my understanding of how my geoscience education can be applied in an international and professional context” (Survey, Q5.4). Here, the contribution was less about new content knowledge and more about conceptual integration.

For me, I think it was a great learning. I think to sit down, think and reflect this, It's a great way to process everything that you have done in this time. I think that you're there for, or at least for us, it was for two months and it's a lot of information and a lot of tasks all the time. (...) when I had to sit down and write this reflection note

and the travel lecture i felt like I could like put all the pieces together and I felt like it become like more a whole project. So, for me, it was a great learning. (Group interview 5)

This theme shows that the assignments could help students transform a busy and sometimes fragmented internship into a more coherent learning narrative. Several students described the internship as intense, with many tasks and impressions happening over a short period. In that context, writing became a way to pause, organise and interpret the experience. Still, the impact varied. Some students found the questions relevant and generative, while others felt they were redundant or too similar to reflective work they had already done. One survey response captures this ambivalence: “The reflection helped me link my GeoScience knowledge to the internship, but it's impact on my learning was limited” (Survey, Q5.4).

The third theme, **communication and dissemination as valuable but unevenly learning-oriented**, concerns the travel letter, blog or social media-related assignment. Students often saw this as meaningful for sharing experiences with others, making the internship visible and encouraging future applicants. In the interviews, students described writing so that others could “see that okay this is a message i i want to actually do i want to apply for this” (Group interview 5). In the survey, one respondent similarly wrote that the task did not contribute much to learning, but was “a nice way to show people what we had learned and seen” (Survey, Q5.6).

I also think I can't wait for our pieces to be published so people can read about the internship. Because I think a lot of students from our school didn't think it would happen, so for them to get the chance to read and see that it actually happened would be encouraging. (Group interview 5)

This assignment therefore seems to have been understood partly as communication work: telling the story of the internship to an audience beyond the programme itself. Some students saw this as a relevant competence, particularly because dissemination is part of research and professional geoscience practice. One survey respondent argued that “Communication is also a key aspect of the research process and as such this step was a necessary one in this internship” (Survey, Q5.2).

Another wrote that “Sharing my my work helped me communicate Geoscience skills, but only somewhat” (Survey, Q5.6). The phrasing “only somewhat” is important, because it reflects a broader pattern: dissemination was appreciated, but not always experienced as central to the learning outcome.

There were also clear limits to this assignment’s perceived value. Several respondents stated that it did not contribute significantly to learning, and some did not remember doing it or were unaware of it (Survey, Q5.6). Others were not active on social media, although one student noted that friends back home found it “interesting to follow” and that younger students later asked questions about the internship (Survey, Q5.6). This suggests that the value of dissemination depends partly on whether students saw themselves as addressing a real audience and whether they recognised communication as part of their professional learning.

Summary: Section 3.5 suggests that the reflection and presentation assignments contributed to learning in a more indirect and variable way than the workplace tasks themselves. The moderate survey ratings are consistent with the qualitative accounts, where students often described assignments as opportunities to organise, revisit and communicate learning that had already taken place, rather than as independent sources of new knowledge. Their value was strongest when they helped students connect the internship to geoscience education, professional practice and dissemination. The findings therefore suggest that such assignments should be clearly framed as tools for reflection and communication and closely integrated with the internship experience.

3.6 Overall assessment of the internship experience



Section 3.6 brings together students' overall assessment of the internship and its learning outcomes. It considers both satisfaction with what students learned and their broader judgement of the internship as an academic, professional and international experience.

Figures 14-16 are best read as an overall evaluative cluster: learning outcome, satisfaction with the internship experience and willingness to recommend the internship to others.

Figure 14: Overall satisfaction with learning outcome of internship

☒ I am satisfied with the learning outcome from my international internship

Antall svar: 21

Svar	Antall	% av svar	Diagram
Strongly agree	14	66.7%	66.7%
Partly agree	5	23.8%	23.8%
Nor agree or disagree	0	0%	0%
Partly disagree	1	4.8%	4.8%
Strongly disagree	1	4.8%	4.8%

Figure 15: Overall satisfaction with internship experience

☒ **I am satisfied with my international geoscience internship experience**

Antall svar: 21

Svar	Antall	% av svar	Diagram
Strongly agree	16	76.2%	 76.2%
Partly agree	3	14.3%	 14.3%
Nor agree or disagree	1	4.8%	 4.8%
Partly disagree	2	9.5%	 9.5%
Strongly disagree	0	0%	0%

Figure 16: Willingness to recommend international internship to fellow students

☒ **I would recommend fellow students to use the opportunity to take part in an international geoscience internship**

Antall svar: 21

Svar	Antall	% av svar	Diagram
Strongly agree	19	90.5%	 90.5%
Partly agree	2	9.5%	 9.5%
Nor agree or disagree	0	0%	0%
Partly disagree	0	0%	0%
Strongly disagree	0	0%	0%

Figures 14-16 show a strongly positive overall evaluation. Students reported high satisfaction with the learning outcome, even higher overall satisfaction with the internship experience, and a particularly strong willingness to recommend the internship to fellow students. These survey results provide an important backdrop for the qualitative analysis, which shows that students' overall endorsement rested

on a combination of academic learning, international exposure, professional networks, support and personal development.

The analysis of qualitative material points to four themes: **strong overall endorsement of the internship, learning through applied and professional research experience; international perspective, networks and personal development;** and **qualified satisfaction where expectations were only partly met.** Across the interviews and survey responses, students tended to evaluate the internship positively, often very positively. At the same time, their satisfaction was not based only on whether everything went according to plan. Many students valued the internship because it gave them access to new environments, new forms of work, and experiences that they considered difficult to obtain through ordinary study.

The first theme, **strong overall endorsement of the internship**, was evident in the many students who described the experience as valuable, memorable and worth recommending to others. Survey responses included concise and emphatic assessments such as “It was a valuable experience that I could not have had anywhere else” (Survey, Q6.2), and “It was very good. Easily top 5 experiences of my life. I’m so happy” (Survey, Q6.2). Several students also stated that they had already recommended the internship to others or would do so without hesitation.

Most definitely, it is a great deal, and I wouldn't ever hesitate to recommend to others. We were very well supported throughout the internship and I'm very grateful for this. (Survey, Q6.4)

This strong endorsement was not merely a general expression of satisfaction. Students often linked their positive evaluations to concrete aspects of the programme: being supported, meeting new people, seeing geoscience in another national or institutional context, and gaining experience that they saw as relevant for future studies or careers. One survey respondent wrote that the internship was “a highly positive and rewarding experience, both academically and professionally” (Survey, Q6.2). Another described it as “a perfect way to expand your horizon and meet new people” (Survey, Q6.4). The overall rating was therefore closely connected to the sense that the internship offered something distinctive.

The second theme, **learning through applied and professional research experience**, concerns how students understood the learning outcome. Many students were satisfied because the internship allowed them to apply knowledge from their studies, gain practical skills and take part in work that resembled real research or professional geoscience practice. In the survey, one student wrote: “I am very satisfied with the learning outcome, as the internship gave me valuable practical experience and new perspectives on applied geology” (Survey, Q4.6). Others highlighted new software skills, laboratory experience, English-language development, or insight into overseas research activities (Survey, Q4.6).

My actual learning outcome exceeded my expectations, as I mainly thought that I would learn only specifically about the sample prep that I would do and the methods. But I actually ended up learning a lot about (...) provenance research in sedimentology (...) and also all the other stuff with learning to work with new people and produce start in a new scene and kind of learn quickly and all of that more life oriented learning. (Group interview 5)

This illustrates a broader pattern: learning outcomes were often broader than students had anticipated. They did not only learn particular methods or techniques, but also how to work in a new research setting, handle unfamiliar expectations, and understand how geoscientific work is organised. Some described the learning outcome as exceeding expectations because the internship moved beyond applying existing knowledge and required them to develop new skills in practice. One student explained that their expectations “were exceeded in a good way” because they learnt new things rather than only applying what they had already learnt (Group interview 5).

The third theme, **international perspective, networks and personal development**, shows that students’ overall ratings were shaped by more than academic learning alone. Several students described the international dimension as integral to the value of the internship. They emphasised living abroad, encountering different educational cultures, communicating in English, making friends, developing independence and building international networks. One survey respondent wrote that the internship gave “new perspective and outlook on global collaboration and research” (Survey, Q6.4). Another stated that it helped them “see

a new place and people(with a different culture)” while also developing skills (Survey, Q6.4).

I had access to different minds from different parts of the globe. So, to talk about my project, and about my rocks. I have all this background from people around the world with different geological settings to compare to. And they gave me their experiences and how to manage my data. (Group interview 4)

These experiences made the internship meaningful as a transition between study and future academic or professional participation. Students described becoming more aware of how geoscience varies across contexts, how research communities operate internationally, and how they themselves might fit into such communities. In one interview, a student explained that making connections with researchers around the world was valuable because their field was small and “everybody kind of know each other” (Group interview 4). Thus, students’ overall satisfaction was often tied to the internship’s capacity to expand their academic horizon and sense of future possibility.

The fourth theme, **qualified satisfaction where expectations were only partly met**, captures the more ambivalent accounts. Some students were positive overall but made clear that the academic or practical learning outcome had been limited by absent mentors, unclear plans, unavailable equipment or tasks that differed from what they had expected. Survey responses included statements such as “I am not completely satisfied with my stay. This is because my mentor was not present most of the time” (Survey, Q6.2), and “It was a cool experience to live in such a different country, but there was almost no learning outcome and my expectations of the internship were not met” (Survey, Q6.2).

I did not do anything that I was supposed to do for the application that I applied for. So, for the first month, I didn't really do much. But then I got in contact with another professor and I got her to teach me some sedimentological photography. So, I got some learning output. (Group interview 6)

These accounts are important because they show that positive overall ratings can coexist with disappointment about specific parts of the internship. Students sometimes distinguished between the value of travelling, living abroad and meeting

people, and the more limited value of the planned academic project. One student, for instance, described the experience as “very cool” and interesting, but also noted that academically it was not what they had hoped for because the planned research project was not available (Group interview 6). This suggests that the programme could still be experienced as worthwhile even when the formal learning outcome was weaker than expected, but also that organisational quality strongly affects the depth of academic benefit.

Summary: Overall, the findings in Section 3.6 show a strongly positive assessment of the internship and its learning outcomes. The high survey ratings for learning outcome, overall satisfaction and willingness to recommend the internship are echoed in students’ descriptions of the experience as academically useful, professionally relevant and personally significant. The qualitative material nevertheless shows that satisfaction was produced by a combination of factors: meaningful tasks, reliable support, international and intercultural experience, and inclusion in a real workplace. The central implication is that GeoInternInternational appears highly valued, while further development should focus on making the strongest elements of the internship more predictable across placements.

4 Areas for further development

4.1 Overall assessment and main findings



Taken together, the survey and qualitative material provide a broadly positive picture of the students' experiences of GeoInternInternational. Among the 21 survey respondents, mentor access received an average score of 4.8, while the relevance and interest of the workplace tasks received average scores of 4.6 and 4.5 respectively. Overall satisfaction and willingness to recommend the programme were also high. These descriptive results reflect students' perceptions; they are not direct measures of competence development or causal effects. The qualitative material adds depth by showing what students valued, where their experiences differed and how organisational conditions shaped the educational value they attributed to the internship.

Regarding motivation and expectations, students commonly combined several purposes. They wanted to test possible academic and professional futures, experience geoscience in another country, develop international networks and take part in authentic research or professional work. Expectations were therefore both academic and exploratory. Students were particularly motivated by the prospect of undertaking meaningful project work in an unfamiliar institutional and cultural setting. This helps explain why the match between the advertised project and the

work that was actually available became important to their subsequent assessment of the placement.

Students generally experienced their preparation as sufficient to begin the internship, although its depth and specificity varied. Preparation worked best when students received information early, had contact with the mentor, understood the intended tasks and could familiarise themselves with relevant literature, methods or software. Mentors and workplaces were experienced as well prepared when academic planning was accompanied by practical arrangements and a clear welcome. Less positive accounts concerned late or general information, uncertainty about expectations, changed projects, unavailable equipment or unclear local responsibilities. These accounts indicate variation in what students could see and experience at the point of arrival; they do not provide a complete account of the preparatory work undertaken by the project management, UiT coordinator, mentors or host institutions.

Follow-up from mentors and the wider workplace was one of the clearest strengths. In the strongest placements, mentors were accessible and academically engaged, offered feedback on concrete work and helped students become part of a research group or professional community. Students also learnt from PhD candidates, technical staff, other employees and fellow students. A smaller number of accounts showed that support became more fragile when the main mentor was absent, responsibility was delegated without clear coordination, or the placement coincided with a period when few staff were present. The findings therefore suggest that successful follow-up involved both a dependable academic relationship and access to the everyday life of the host workplace.

The work tasks were central to students' learning and overall satisfaction. Many students described authentic participation in geoscientific research or professional activity, including the use of new methods, data, equipment and forms of collaboration. They valued tasks that were relevant to their disciplinary interests, offered appropriate responsibility and allowed some independence while support remained available. The less successful experiences involved tasks that were limited, repetitive, poorly matched to the description or difficult to complete because the required resources were not available. A placement in a relevant

geoscientific environment did not by itself guarantee a strong academic learning experience; the design and continuity of the actual work mattered.

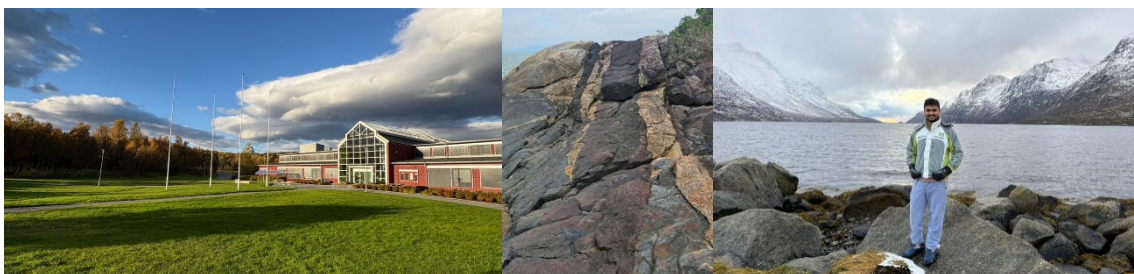
The three assignments were assessed more moderately and unevenly than the workplace tasks, with average scores between 3.5 and 3.7. Students often valued them as opportunities to organize, revisit and communicate learning that had already taken place. The variation in assessments may partly reflect differences in how students understood relevant learning. Some appeared to associate learning primarily with acquiring new disciplinary knowledge, methods or practical skills and therefore regarded reflection and dissemination as less central. Others described the assignments as helping them process and integrate their experiences or practise communicating geoscience to an audience, which they recognised as a relevant professional competence. The somewhat lower ratings should therefore not be interpreted simply as evidence that the assignments had limited educational value. They nevertheless raise questions about whether their intended learning purposes, timing and relationship to the internship were sufficiently clear to all students.

Students' overall assessments were highly positive and closely connected to a combination of meaningful tasks, reliable support, international and intercultural experience, and inclusion in an academic or professional community. Their accounts indicate perceived development of disciplinary and transferable skills, greater independence, international perspectives, cross-cultural communication, networking and career awareness. These findings correspond to several of the project's student-level objectives. At the same time, some students distinguished between a valuable international and personal experience and a more limited academic outcome. High overall satisfaction could therefore coexist with disappointment about a particular project, mentor arrangement or work task.

This overall pattern is consistent with research indicating that the educational value of international and work-integrated learning depends on active participation, inclusion, relevant tasks, supervision, feedback and coordination (Billett, 2009; Di Pietro, 2022; Ho et al., 2026; Jackson, 2015; Mittelmeier et al., 2024; Schneider et al., 2024). However, the present evaluation is limited to 21 survey responses and qualitative material generated from 23 participating students. It cannot establish causal effects, assess subsequent employment outcomes or determine whether

partnerships and organisational arrangements will be sustained over time. It also cannot show in detail which coordination practices were already in place, whether these differed between placements, or whether particular actions by the project management or UiT coordinator contributed to the best-functioning internships. These questions require evidence from project documentation, mentors, host institutions and those responsible for coordination.

4.2 Priority areas for further development



The areas below are offered as possible directions for further development rather than as categorical recommendations. Their relevance and feasibility need to be considered by the project leadership in light of fuller knowledge of the programme, the partnerships and the measures already taken. Some of the proposals may describe practices that were already used in several placements. In that case, the central question is whether experience from these placements can inform the further development of the programme and make successful arrangements more consistent where appropriate.

The project already used placement descriptions, tripartite agreements, learning agreements, written requirements and weekly contact between students and the UiT project administration. These arrangements provide an important starting point. The evaluation did not compare how they were applied at different sites or examine whether the UiT coordinator undertook additional work in relation to the best-functioning placements. A useful first step could therefore be to identify what characterised these placements and assess which practices can be adapted across different institutional and disciplinary contexts. The order of the areas below reflects their proximity to the main findings and should not be read as a fixed ranking.

1. Further developing existing placement-readiness procedures: Project leadership may wish to review how the current placement descriptions and agreements worked across the different sites. One possibility would be to examine whether they consistently made the intended learning outcomes, main work task, expected student competence and practical requirements sufficiently clear. For short placements of six to eight weeks, it may also be useful to consider whether an alternative task can be identified when the original project depends on uncertain access to data, equipment, fieldwork or facilities. The purpose would be to develop what is already in place, while retaining the disciplinary and local flexibility that students often valued.

2. Learning from successful mentoring arrangements and supporting continuity: The high rating of mentor access suggests that many placements already established effective forms of academic support. It could be valuable to examine what mentors, host environments and the UiT coordinator did in these cases, and whether any of these practices can inform other placements. Where existing arrangements leave uncertainty, the project leadership could consider clarifying expected mentor availability, the role of colleagues who provide day-to-day support and the contact available during travel, leave or illness. A backup academic contact may be useful in some settings, although the most appropriate solution will depend on the size and organisation of the host institution.

3. Considering placement timing and workplace inclusion: Some of the weaker experiences occurred during holidays or other quiet periods when few staff or students were present. Project leadership and host institutions may therefore wish to review timing as part of placement planning. Avoiding such periods will not always be possible, but the host may be able to clarify how access to relevant staff, workspace, equipment and professional activities will be maintained. The stronger placements also suggest value in identifying opportunities for students to join meetings, seminars, laboratory or field activities and appropriate social events. A named local colleague or peer may further support everyday inclusion where this fits the host environment.

4. Extending early and placement-specific preparation: The existing use of written descriptions, agreements and, in some cases, preparatory reading or

training gave many students a sound starting point. The project leadership could consider whether these practices might be further developed by providing key information earlier and tailoring it more closely to each placement. Depending on need, this could include an updated description of the project and tasks, relevant reading or software, practical arrangements, contact points and cultural or linguistic considerations. A short online conversation between the student and mentor before travel, with coordination support from UiT where useful, could help identify changed circumstances and clarify expectations.

5. Clarifying the learning purpose and design of the assignments: The assignments appear to have supported reflection, integration and dissemination for many students, even though they were less often experienced as sources of new disciplinary or technical learning. Project leadership could consider whether students should be made more explicitly aware that learning from an internship may also include developing the ability to reflect on experience and communicate geoscientific knowledge to different audiences. This would connect the assignments more clearly to the project's stated objective of strengthening communication and dissemination across cultures. It may also be useful to review whether the distinct purpose of each assignment is sufficiently clear and whether any overlap can be reduced. A short reflective activity during the placement could support reflective conversations with the mentor or UiT coordinator, while the final reflection could connect workplace learning to geoscience education and future choices. Dissemination activities may have greater educational value when they address a recognisable audience and allow formats other than social media where appropriate.

6. Building on UiT's existing follow-up to support programme learning: The weekly contact with the UiT project administration represents a useful foundation for monitoring and support. Project leadership may wish to consider how information from this contact can contribute to learning across placements. If not already covered, brief and consistent questions early and midway through the internship could address mentor access, task progression, resources, inclusion and student well-being. A short post-placement review involving both student and host perspectives could help distinguish isolated problems from recurring patterns. Future evaluation could also include mentors, partner institutions, project

management and longer-term student outcomes. This would provide an even stronger basis for assessing the project's wider aims concerning sustainable partnerships, systematic implementation and career relevance.

4.3 Conclusion

Based on the student evidence, continuation and further development of reciprocal international internships in geoscience appear well justified. GeoInternInternational gave students access to authentic geoscientific work and international academic or professional communities in ways that most participants experienced as relevant, educationally valuable and worth recommending to others. The findings also show that the depth of the academic benefit varied. Meaningful tasks, accessible mentoring, workplace inclusion and timely preparation were prominent features of the strongest experiences.

Further development can therefore begin by learning more systematically from the placements that worked particularly well and considering whether their successful practices can be adapted elsewhere. Because this evaluation did not compare project-management and coordination practices across sites, it would be premature to assume that the proposed measures are absent from the current model. Complementary perspectives from mentors, partners and those responsible for coordination would help determine both what should be retained and what might be adjusted. Taken together, the experience gained through GeoInternInternational provides a strong foundation for the further development of a sustainable model of reciprocal international internships in geoscience education.

Appendix 1

Survey on International Internship

Nationality

University

Age

Gender

2 Preparation

Choose the response to the following statements that best describe your opinion.

2.1 I had good information prior to my international internship from my university

Strongly agree-Partly agree - Nor agree or disagree - Partly disagree - Strongly disagree

2.2 Please tell briefly why you gave this answer

2.3 I felt well prepared for my international internship

Strongly agree-Partly agree - Nor agree or disagree - Partly disagree - Strongly disagree

2.4 Please tell briefly why you gave this answer

2.5 I had good information on the workplace where I should do my internship

Strongly agree-Partly agree - Nor agree or disagree - Partly disagree - Strongly disagree

2.6 Please tell briefly why you gave this answer

3. Reception and Follow-up during the internship

3.1 I felt that the mentor at the workplace I visited was well prepared

Strongly agree-Partly agree - Nor agree or disagree - Partly disagree - Strongly disagree

3.2 Please tell briefly why you gave this answer

3.3 I had good opportunity to see my mentor during my international internship

Strongly agree-Partly agree - Nor agree or disagree - Partly disagree - Strongly disagree

3.4 Please tell briefly why you gave this answer

3.5 I felt that the management and staff at the workplace I visited were well prepared for my internship

Strongly agree-Partly agree - Nor agree or disagree - Partly disagree - Strongly disagree

3.6 Please tell briefly why you gave this answer

3.7 I was well received at the place for my internship

Strongly agree-Partly agree - Nor agree or disagree - Partly disagree - Strongly disagree

3.8 Please tell briefly why you gave this answer Please tell briefly why you gave this answer

3.9 I had good opportunities to talk with managers and employees at my internship workplace

Strongly agree-Partly agree - Nor agree or disagree - Partly disagree - Strongly disagree

3.10 Please tell briefly why you gave this answer Please tell briefly why you gave this answer

4. Work tasks

4.1 I think the tasks I had at my internship workplace were relevant for me

Strongly agree-Partly agree - Nor agree or disagree - Partly disagree - Strongly disagree

4.2 Please tell briefly why you gave this answer

4.3 I think the tasks I performed at my internship were interesting

Strongly agree-Partly agree - Nor agree or disagree - Partly disagree - Strongly disagree

4.4 Please tell briefly why you gave this answer

4.5 I am satisfied with the learning outcome from my international internship

Strongly agree-Partly agree - Nor agree or disagree - Partly disagree - Strongly disagree

4.6 Please tell briefly why you gave this answer

5 On your assignments

5.1 Assignment # 1 Internship experiences, descriptions of internship contents. The daily life in internship" contributed significantly to my learning outcome

Strongly agree-Partly agree - Nor agree or disagree - Partly disagree - Strongly disagree

5.2 Please tell why you gave this answer

5.3 Assignment # 2 "Individual reflection note aligning Geoscience education applied in an international internship" contributed significantly to my learning outcome

Strongly agree-Partly agree - Nor agree or disagree - Partly disagree - Strongly disagree

5.4 Please tell briefly why you gave this answer

5.5 Assignment # 3 "Disseminating and communicating Geoscientific competence in an international arena" (With blogs and SoMe contributed significant to my learning outcome.

Strongly agree-Partly agree - Nor agree or disagree - Partly disagree - Strongly disagree

5.6 Please tell briefly why you gave this answer

6 On your overall opinion after your experience with international internship

6.1 I am satisfied with my internatinal geoscience internship experience

Strongly agree-Partly agree - Nor agree or disagree - Partly disagree - Strongly disagree

6.2 Please tell briefly why you gave this answer

6.3 I would recommend fellow students to use the opportunity to take part in an international geoscience internship

Strongly agree-Partly agree - Nor agree or disagree - Partly disagree - Strongly disagree

6.4 Please tell briefly why you gave this answer

Appendix 2

Questions for semi structured focus group interview:

1. Tell us about how you experienced your internship
2. What was your main motivation for taking part in an international geoscience internship?
3. What was your main expectations with regard to learning outcome?
4. How would you describe your relationship to your mentor?
5. How was your experience with the workplace?
6. Information about the workplace and its tasks/functions and its competencies?
7. Communication and interaction with management and employees?
8. The functions and tasks you had during your stay?
9. How would you describe your learning process during your internship?
10. Could you say more specific what you learned during your internship?
11. How did your learning outcome match your expectations?
12. Do you have any thoughts on improvement of “International geoscience internship”
13. Other thoughts?

Appendix 3:

Overview of Research Questions, Analytical Questions and Qualitative Themes Appendix 3.

Subordinate research question	Analytical question / thematic analysis	Final qualitative themes
RQ1: What motivation and expectations did the students have for the internship?	TA1: What motivation and expectations did the students have for the internship?	• Testing possible academic and professional futures • Seeking international exposure and networks • Expecting authentic learning through meaningful project work
RQ2: How did the students experience the preparations for the internship?	TA2: How did the students experience their own preparations for the internship?	• Being sufficiently prepared, but often only at a general level • Self-directed academic preparation for unfamiliar work • The limits of preparation when information, timing or expectations were unclear
-II-	TA3: How did the students experience the mentors' preparations for the internship?	• Structured academic preparation • Relational and practical readiness • Adaptive handling of unexpected changes • Vulnerability when mentor preparation was weak or mentors were absent
-II-	TA4: How did the students experience the management and other staff preparations for the internship?	• Workplace readiness through practical arrangements • Being included in a prepared local community • Organisational fragility when arrangements were incomplete or poorly timed
RQ3: How did the students experience the follow-up from the mentor and the workplace?	TA5: How did the students experience the follow-up from the mentor?	• Mentor follow-up as accessible and responsive presence • Mentor follow-up as academic scaffolding and motivation • The vulnerability of the internship when mentor contact was limited or delegated too heavily
-II-	TA6: How did the students experience the follow-up from management, staff and others?	• A welcoming workplace climate • Everyday access to a broader community of expertise • Organisational arrangements that either opened or restricted opportunities for participation
RQ4: How did the students experience the work tasks in the workplace and their relevance?	TA7: How did the students experience workplace tasks and their relevance?	• Alignment with disciplinary interests and future trajectories • Novel and practically engaging tasks • Authentic participation in research processes; limited or mismatched tasks
RQ5: How did students perceive the contribution of assignments to their learning outcomes?	TA8: How did the reflection and presentation assignments contribute to the learning outcome?	• Retrospective consolidation rather than direct learning • Linking internship experience to geoscience education and professional practice • Communication and dissemination as valuable but unevenly learning-oriented
RQ6: How did students rate the internship and its learning outcomes overall?	TA9: How did students rate the internship and its learning outcomes overall?	• Strong overall endorsement of the internship • Learning through applied and professional research experience • International perspective, networks and personal development • Qualified satisfaction where expectations were only partly met

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