CHAPTER 2
CULTIVATING RESEARCH LITERACY IN SWEDISH TEACHER EDUCATION: CASE STUDIES FROM MALMÖ AND GOTHENBURG UNIVERSITIES, SWEDEN

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National Context for Teacher Research Literacy Policy

Sweden faces a well-documented shortage of qualified and experienced teachers throughout the education system (Boström, 2023; Lindqvist, 2022). Therefore, the government has made teacher education a key priority within the national education agenda (Åstrand, 2023). Swedish teacher education offers three main education programmes: primary school (grades K-3, 4-6), secondary school (grades 7-9), and upper-secondary school (grades 10-12). For example, at the time of writing, the upper-secondary subject teacher programme, described in Case 1 below, is structured as a five-year integrated master's programme in the following manner:

- Total number of credits for the teacher education programme – 300 ECTS
- Credits for the first teaching subject – 120 ECTS
- Credits for the second teaching subject – 90 ECTS
- Remaining credits – 90 ECTS

In addition to subject courses, the programme includes 60 ECTS of educational science core courses. These cover, for example, topics such as learning, didactics,

leadership, special education, theory of science, and research methodology. Furthermore, the programme incorporates 30 ECTS of school-based placement practice.

Several universities offer teaching degrees based on similar programmes. Alternative pathways into the teaching profession include bridging teacher education programmes, usually one year in duration, for those who already hold academic degrees in one or more school subjects. Moreover, specific complementary programmes are available to teachers with foreign teaching degrees to familiarise them with the Swedish school system and teaching traditions. Programmes are also available for further education of teachers and preschool teachers who do not hold a formal teaching degree. Early childhood and primary school teacher education programmes are mostly administered by faculties of education, whereas courses in subject-area teacher education programmes can be shared across different university departments.

The current Swedish Education Act stipulates that all education "rests on a scientific ground and proven experience" (Swedish Government, 2010, 5§). This requirement has far-reaching consequences for both in-service and student teachers in teacher education. Teacher education is considered an "academic vocational education" (Swedish Government, 2008) and must, therefore, be research-based. Consequently, pre-service teachers must be given opportunities to learn from the latest research on education, receive education from teachers who are also active researchers, and develop academic and research literacy. This includes consuming original research to understand scientific methods, posing relevant and critical questions, and independently conducting research within the profession. In line with this, the Swedish National Agency for Education's plan for school professional development (The Swedish National Agency for Education, 2024) underscores the importance of teacher research development. The plan specifies that practice-based research and participation in research and development projects be integral to schoolteachers' competence development. Additionally, it highlights the crucial role of school leaders in initiating and creating the conditions for teachers and preschool teachers to engage in research projects.

The Swedish Cases

The two local cases stem from classroom observations conducted at Malmö University (MAU) and at the University of Gothenburg (GU).

The Malmö University Case

The workshop observed in the project was part of the course *Sociolinguistics and Intercultural Communication* (hereafter, SLIC) offered at Malmö University (MAU, 2023). SLIC is a 7.5 ECTS course that addresses linguistic variation and linguistic norms. It draws upon sociolinguistics to explore issues related to intercultural communication, language and gender, power, regional variations, English as an international language of communication and lingua franca, and the relationship between identity and language. Various digital tools are used to support the study and teaching of linguistic variation and intercultural communication. Issues related to linguistic variation are tied to language teaching and language teaching materials, especially in the use of digital tools. The learning objectives for this course state that, on completion, the student must be able to:

1) present sociolinguistic principles for studying linguistic variation and intercultural communication;
2) critically use digital tools for the didactic application of linguistic variation and intercultural communication;
3) use international databases in a functional way to support their own studies.

In accordance with the so-called *Malmö model* (MAU, 2024), subject content is steeped in the general educational science core and subject didactics. Therefore, while all learning activities in the course are framed in the content of the course – sociolinguistics and intercultural communication – they are also explicitly connected to the didactic and pedagogical approaches addressed continuously in other subject courses and the general educational science core courses offered to all students enrolled in the various teacher education programmes at MAU. Students' research competence is prompted through specific course requirements: weekly preparation of recommended materials and preparation for two examination tasks, one of which is an individual annotated bibliography (see below). The course incorporates various learning activities such as seminars, lectures, independent study, group work, and workshops.

The course is offered in the fourth year (term 7) of the five-year integrated master's teacher education programme for upper-secondary school teachers of English as a second subject. At this stage, students have completed their BA-level independent projects in their first subjects (typically, social studies, history, physical education, religion, mathematics, or Swedish as a first or second language) and have entered what is internationally comparable to the first year of

a professional master's programme. During the fifth and final year, they complete their master's thesis in their first subjects. Generally, these students were not formally taught to produce annotated bibliographies, and based on our experience, very few – if any – have performed this task before.

The individual written annotated bibliography workshop was the focus of the TREL observation. According to the examination instructions, students must identify a topic of interest concerning the role of sociolinguistics and intercultural communication in language teaching and independently formulate a relevant research question. Subsequently, they must outline a methodological approach to researching the topic and present at least eight relevant annotations of empirical research articles from international databases to explore their research question. All three learning objectives (below) are in focus in this exam task.

The workshop aims to:

- develop their skills in using international databases to support their own studies;
- equip students with research skills directly applicable to their master's thesis work;
- enhance students' skills to identify, evaluate, and analyse credible primary research in education studies relevant to their professional needs and interests.

Feedback received from the observers

The observers provided their feedback both orally, directly after the observation, and in writing, after the project meeting. This feedback is summarised below under four themes: student engagement and interaction patterns, tasks and instructions, content, and supporting students' research literacy.

Students' engagement and interaction patterns

Multiple forms of interaction were observed in the classroom. Discussions contributed to creating a student-friendly atmosphere. The teacher delivered short lectures and posed questions to students, while individual and small-group tasks were used to exemplify and problematise different aspects of research to help students gain an overview of both content and methodology. Students actively participated by both answering and initiating questions and responding to peers' contributions during whole-class and group discussions. However, several observers indicated that more students could be prompted to participate more actively.

Task and instructions

The tasks were clear, practical, logically designed, and interconnected. The time allocated to different activities was generally sufficient. However, one observer noted that the task related to keyword creation was allocated too much time, leading to a loss of students' focus. In contrast, other observers recommended more time for this task and for teamwork.

Content

Several observers commented on the efficiency of the chosen metaphors, particularly the concept of "research as a conversation". They noted how discussions about the practicalities of creating annotated bibliographies were well integrated with broader research considerations, including ethical issues and methodological approaches.

Supporting student research literacy

The table-based tool for drafting annotated bibliographies was generally considered innovative and effective (see Appendix). The tasks and accompanying discussions helped students to adopt "a researcher's gaze". Different aspects of annotated bibliographies, along with broader research-related issues, were addressed through modelling and pertinent discussions.

Critical insights into practice given the received feedback

In their feedback, the observers provided several practical suggestions for improvement. Firstly, they recommended creating a summary document outlining all the steps necessary in producing an annotated bibliography, which students could use as a future reference. Secondly, some suggested adjusting the time allocation for different tasks and prompting even more student participation. These suggestions will be implemented in future iterations of the course.

Some of the suggestions highlighted the importance of visualising research literacy activities as a progressive process for both instructors and students. We were, therefore, reminded that the Malmö model must remain a vital part of our everyday teaching practice and that its underlying rationale must be continuously communicated to students. However, due to the current teacher shortage, most students at MAU are not only completing the school practicum required by their educational programmes but are also employed in schools while studying full-time. This dual engagement enables and motivates students to connect their professional experiences with the academic content and research literacy activities in the courses. That said, it is essential that instructors actively support students in making these connections fully meaningful.

Many observers have also noted that the annotated bibliography task in focus in the workshop should be better connected to the students' future classrooms and the teaching profession (see the national requirements for research-based teaching in schools above). While this is a valid point, establishing such a connection is difficult. In Sweden, access to research databases is restricted to research institutions. Thus, schools depend on sources such as the Ministry for Education, the Swedish National Agency for Education (Skolverket), and private actors such as Skolporten ('School gate', skolporten.se) to select, synthesise, and disseminate research on different educational issues. While we cannot connect the task directly to the teaching profession, we concentrate on developing different relevant skills, such as reading purposefully and using the table-tool, and introduce alternative ways to gather information, for example, through Google Scholar.

The University of Gothenburg Case

The observed workshop was part of the course *Teaching Profession and Scientific Work for Teachers in Secondary School Years 7-9* (hereafter L9K81A) (University of Gothenburg, 2017). The course is given as the penultimate component of the lower-secondary subject teacher education programme (240 ECTS in total), carries 7.5 ECTS, and prepares students for the final thesis course. It is offered in the seventh term of the eight-term programme and is delivered over five consecutive weeks. L9K81A builds on a preceding course that aims to contribute to future subject teachers' development towards reflective and critical practices. Within this progression, students are introduced to adopting a scientific approach to learning, teaching, and development work in the pedagogical profession, thereby strengthening their ability to engage with research-based practice.

L9K81A corresponds to the research method courses given across all teacher education programmes at GU. Both the topics of teaching profession and research methodology are integrated into the so-called core courses, which collectively prepare students for the final thesis required in all teacher education programmes. This final thesis, including that in the lower-secondary subject teacher education programme, must be based on empirical work conducted by the student.

The L9K81A course consists of two parts:

Part 1: "The teaching profession and educational science" (3 ECTS)

The first part of the course critically examines the teaching profession through the lens of educational theory and addresses methodological questions relevant to the profession. This is achieved through discussions on the role of a scientific approach within the profession and through analyses of methodological choices in scientific articles and theses. These activities aim to deepen students' understanding of how research can inform and shape pedagogical work.

Part 2: "Applying educational scientific methods" (4.5 ECTS)

The second part of the course deepens students' knowledge about key research areas within educational science and emphasises the importance of research for teachers' everyday practice. This is achieved through exercises in data collection and analysis methods that are directly related to the implementation of the final thesis within teacher education. These activities aim to strengthen students' methodological competence and their ability to apply research-based approaches in an academic context.

The learning objectives of the course address both the teaching profession and research methodology, and are formulated as follows:

After passing the course, the student must be able to demonstrate:

- Knowledge and understanding
    - Reasoning about scientific approach in the teaching profession based on professional theory starting points.
    - Discuss central educational scientific methods.
- Skills and ability
    - Interpret and use data in educational scientific research, as well as be able to critically reason about the results.
    - Discuss research ethics issues in relation to educational science research and method.
- Evaluation
    - In an independent way, be able to account for and reason about different approaches to a scientific basis for the teaching profession.
    - In an independent way, be able to give an account of certain educational scientific methods' opportunities and limitations

The course consists of six lectures and six workshops. The workshop observed for this study, which is the focus of this chapter, was conducted as the final

activity in the course. Prior to this concluding workshop, the students participated in the following activities:

- Lecture 1: Educational research and the teaching profession
- Lecture 2: Introduction to educational research
- Lecture 3: Ethnographic method - empirical example
- Lecture 4: Policy study - empirical example
- Lecture 5: Quantitative research method - empirical example

During lectures 3, 4, and 5, students met with three researchers, university teachers who have investigated different aspects of recent reforms in the Swedish school system, each applying distinct methodological approaches. Students read the associated research papers, which are part of the examination literature, and discussed the applied methodologies with the authors. The workshops covered two themes: *Interview Method – Qualitative Methodology* and *Survey Method – Quantitative Methodology*. These two themes represent the most common methodological approaches students apply in their thesis work. Each theme consisted of three workshops.

The interview-related workshops address interviews as a qualitative data collection method and involve the following: 1) Designing the Interview Process and Guide: students collaborate with the teacher to define an overall topic and create an interview guide that they will apply; 2) Conducting Interviews: students take turns acting as interviewer and interviewee in simulated interviews that are recorded, and later transcribed as part of students' homework; 3) Analysis of Transcripts: students perform a basic analysis of interview transcripts.

Prior to the quantitative methodology workshop series, students have two preparatory lectures, covering the following topics: the concept of quantitative approach in educational science, methods of educational quantitative research, steps in planning and conducting research, types of questions answerable by quantitative research in educational context, quantitative data, sources of error in quantitative research, the concept of validity and reliability, the role of sampling in educational research, children and teachers as research participants, the teacher as a researcher, reporting quantitative research, and critical analysis of one article addressing issues relevant to teaching profession.

The workshops on quantitative methodology were designed to follow a typical research process. Due to time constraints, students did not collect their own data; instead, the teacher provided the datasets. All workshops were conducted in the computer lab equipped with SPSS software.

Workshop 1 deals with the following:

- defining the research question, concepts, and items; working collaboratively to formulate a research question and identify key concepts and items.
- designing a new questionnaire based on the theoretical background presented by the teacher.
- discussing data collection challenges, common issues, and practical considerations.
- engaging in comparative analysis, in which the questionnaire developed during the workshop is compared with the "real questionnaire" used to collect the dataset, which ideally generates insights into common mistakes when designing questionnaires.

Workshop 2 provides hands-on experience with the real dataset. Students practice data input and data screening, followed by an introduction to descriptive analysis, including techniques for presenting and interpreting quantitative data.

Workshop 3 (observed within the TREL project) is fully committed to working with the dataset. Guided by the exercises prepared by the teacher, students conduct descriptive analysis, present their findings, and perform basic data interpretation.

The course is assessed through three assignments that collectively assess students' ability to critically evaluate scientific texts and apply methodology in relation to their respective research questions:

- **Oral Individual Presentation**: Students deliver a presentation on a topic related to the teaching profession, grounded in scientific research and supported by documented professional experience
- **Home Written Examination**: Students develop a research plan, design, and address methodological challenges.
- **On-Campus Written Examination**: Guided by specific questions, students analyse three methodological approaches presented in the three studies from the lectures.

Students' research competencies are developed through lectures that focus on the methodology of empirical research within the context of the teaching profession. Competences related to evidence-grounded teaching are directly discussed and assessed in individual oral presentations. These competencies are further strengthened in hands-on workshops, where students apply interview and survey

methods. The workshops emphasise the practical application of these methods and compare their scope, advantages, and limitations. Students are thus guided through the key steps of the research process and are thus prepared for the individual thesis work that follows in their studies. Assessment tasks include critical methodological reflections on existing research and the development of an original research plan in a chosen field. For most students, this work is directly linked to their future empirical study.

Feedback received from the observers

Observers provided feedback according to the TREL observation protocol both orally, immediately after the teaching session, and in writing. Three observers were physically present in the classroom with the consent of all participating students.

Students' engagement and interaction patterns

The session began with a brief review of the previous class, which covered means and frequency tables. The activities incorporated multiple forms of interaction, including teacher-student, student-teacher, and student-student exchanges. The work was organised as a series of minor tasks. Building on knowledge acquired in the previous workshops, the instructor encouraged students to make informed decisions regarding data presentation, for instance, choosing a bar chart over a pie chart based on the nature of the data and the intended interpretation.

Tasks and instructions

The observers highlighted the effective use and application of concrete examples to support students' understanding of quantitative concepts. They characterised the teacher's instructions as "positively provocative", noting that this approach prompted students to offer creative solutions to the tasks. The instruction approach was described as learning-by-doing and was considered well aligned with students' previous skills and academic needs.

Content

Observers appreciated that the workshop included hands-on activities using the available software. Furthermore, structuring the workshop around a series of minor tasks was considered an appropriate and well-suited approach to addressing the topic.

Supporting student research competencies

One observer noted the convenience of GU students having off-campus access to the software and appreciated that the teacher introduced this opportunity during

the workshop. Additionally, the observers found it empowering that the teacher reassured students they did not need to memorise every procedural step. Instead, students were equipped with online reference materials, which they could also later use in their professional engagement.

Critical insights into practice given the received feedback

The observers recommended that the teacher allow more time for students to formulate their own responses to the tasks. They noted that students needed additional time to systematise their thoughts and respond meaningfully to the prompts. Moreover, one observer suggested that, considering the relatively small class size, the teacher could have provided more individual support at students' computers and more monitoring of their ongoing work. In general, the feedback emphasised the need for greater attention to assessing the extent to which students successfully completed tasks, beyond relying solely on students' self-reporting that they are "done". Greater emphasis was needed on the risk of misinterpreting observed descriptive differences when statistical tests were not applied to support the results. However, addressing this issue within a single course is challenging, as statistical competencies are not included in the course syllabi of Swedish teacher education programmes. A general concern expressed by both observers and the teacher was the very low student attendance at the workshop. This is particularly problematic given the importance of preparation for successfully completing the course and being adequately prepared for thesis development. Attendance at seminars and workshops is generally non-obligatory within the programme, and low attendance remains a persistent challenge for university teachers.

Reflective Comments for Both Cases

Reflecting on both cases, several key insights emerge that can inform and enhance teaching practices aimed at developing research literacy. The importance of fostering student engagement and interaction patterns was highlighted. Overall, the tasks and instructions were well-received, being clear, practical, and interconnected. However, adjustments in the time allocation for certain activities could help maintain focus and enhance productivity. In particular, allocating more time for collaborative work may strengthen teamwork and deepen students' conceptual understanding.

The content in Case 1 was praised for its effective use of metaphors, particularly the concept of research as a conversation. This approach helped integrate discussions on the targeted activity with broader research issues, making the

content more relatable and engaging for students. The use of innovative tools to support student research literacy, such as the table for drafting annotated bibliographies, was also considered effective. This tool, combined with pertinent discussions, helped students adopt a researcher's perspective, which is crucial for their academic development. Additionally, connecting research literacy activities to students' professional experiences was identified as a strategy that can make the learning process more meaningful. Therefore, introducing alternative and more accessible research tools beyond the university setting, such as Google Scholar, can help prepare future teachers to gather information effectively and independently.

In Case 2, the tasks and instructions were well-received, with observers appreciating the effective use of concrete examples to support students' understanding of quantitative concepts. The "positively provocative" instructions encouraged creative problem-solving and were well aligned with students' prior knowledge and academic needs. This learning-by-doing approach was effective; however, allocating more time for students to formulate their responses would further enhance engagement and comprehension. The workshop content, which featured hands-on software work and a series of minor tasks, facilitated practical learning and was well-suited to the topic. Additionally, providing students with online reference materials was considered useful, as it alleviated the need to memorise procedural steps.

Finally, in both cases, when research competence development activities must compete with a myriad of other responsibilities that student teachers face within teacher education, addressing the challenge of potentially low attendance is crucial. It is essential that all stakeholders, especially student teachers, understand the importance of research literacy competencies for course outcomes, the final thesis, and the long-term sustainability and quality of the teaching profession.

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Appendix

MAU Annotated Bibliography Table-Tool

	Participants	Method	Claim	Key Reference(s)	Key term(s)	Implication(s)	…
Source 1	…	…	…	…	…	…	…
Source 2	…	…	…	…	…	…	…
	…	…	…	…	…	…	…

MAU Presentation Slides Annotated Bibliography

Your assignment instructions

Each source in your annotated bibliography should be accompanied by a concise paragraph (about 150-250 words) that provides key information about the source. The annotation of each source should include the following information (about one sentence for each item below):

- Purpose of the study
- Questions, hypotheses, or issues being studied
- Samples used and/or participating populations and how they were chosen
- Procedures for data collection and analysis
- Major findings/Interpretations/Implications
- Your evaluation of the relevance of the study with respect to your research question.

Drafting an annotated bibliography

	Participants	Method	Claim
Source 1	Upper secondary school pupils, native speakers of Dutch writing in English	Qualitative interviews with a focus group	Affirmative feedback boosts motivation
Source 2	University students, native speakers of Chinese writing in English	Text analysis of student production	Affirmative feedback does not prompt transfer of good habits to other contexts
…	…	…	…

SYNTHESIS: Although younger ESL pupils find affirmative feedback on their writing motivating, there is no evidence that such feedback is beneficial for adult EFL writers' development. Thus, teachers should offer some affirmative feedback to Swedish pupils, but concentrate on the formative, feed- forward feedback on their writing.