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Prepared for higher education? Staff and student perceptions of academic literacy dimensions across disciplines

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ABSTRACT

This article explores beginner student and staff perspectives of study preparedness across higher education institutions and disciplines in Norway, focusing on writing, reading and academic working skills. Drawing on focus group interviews among academic staff and students, findings show a certain academic unpreparedness by beginner students. Students apparently are not used to working hard or independently enough, struggling to read large text amounts, showing a lack of academic writing and reading skills. For hard-working students, findings show differences between non-selective and selective study programmes. Selective programmes, for example, law, seem to be more structured and aligned with upper-secondary school. Students in these programmes are a positively selected group, expected to be better prepared than their counterparts in open programmes. The article contributes to a combined perspective by students and staff on study preparedness across disciplines and institutions, with implications for further research and quality in higher education.

KEYWORDS

Study preparedness; teacher perspective; student perspective; academic literacy; disciplines; higher education

Introduction

Entering higher education means entering a new and different learning environment for beginner students, who might need to redefine their learner identity and develop more independent working skills. This is a challenging process for most students.

This article aims to explore academic preparedness from the perspectives of university teachers (staff) and beginner students across different disciplines and institutions in a Norwegian context. The term academic preparedness is complex and involves several dimensions, such as 'being informed, making the right choices, having realistic expectations and being motivated' (Harvey *et al.*, 2006). Some scholars argue that students enter higher education with weaker basic disciplinary skills than needed (for example, statistical skills for psychology

studies) (Mulhern & Wylie, 2006), while others argue that beginner students show weak generic writing and reading skills (Jolliffe & Harl, 2008; McDaniel, 2014; van der Meer, 2012). Still others point to the importance of behavioural characteristics, such as academic perseverance (Farrington *et al.*, 2012) for academic preparedness. Delimiting the scope, this article focuses on writing and reading skills and academic working skills, some of several crucial factors for a smooth transition to higher education that implies the creation of a new student identity (Briggs *et al.*, 2012).

In the following, academic preparedness is conceptualised as an overarching term comprising reading and writing skills, basic disciplinary skills and academic working skills, all of them preconditions for further academic development. The focus is on students' and university teachers' experiences related to these dimensions. Academic staff are crucial for student learning but are also guardians of quality in their disciplines, setting the standards for what counts as good performance. Students are also important informants as they are in a process of grasping what is required from them in their formative time as students in higher education.

Generally, research on academic preparedness makes up quite a substantial part of research on beginner experiences, particularly in North America and Australia (Lea & Street, 1998; Shanahan *et al.*, 2011; Wingate *et al.*, 2011; Springer *et al.*, 2014; Nallaya, 2018). In a European context, however, research on academic preparedness, combining the perspectives of both, staff and students across disciplines and institutions, is rather scarce (for example, a Finnish study Määttä & Uusiautti (2012)). Jonsmoen and Greek (2017) investigated academic literacy from the perspectives of teachers and students in three different Bachelor programmes at one Norwegian university of applied science. They showed that teachers focused rather on students' failure to master formal requirements instead of teaching them how to build an argument within the specific discipline, something which teachers appear to assume students should learn by themselves. At the same time, beginner students appear to know and meet the requirements according to disciplinary norms to a certain extent. Furthermore, the authors show that teachers have insufficient meta-language skills and knowledge to discuss writing issues with students and to explain their expectations with respect to student assignments. Moreover, higher education institutions and upper-secondary schools seem to differ in demands of text production and reading amounts. Students at school appear to lack a meta-perspective across subjects. Jonsmoen and Greek (2017), however, do not consider variations between higher education institutions, programmes or disciplines. To understand academic preparedness from the perspectives of beginner students and staff it is necessary to know more about individuals' perspectives across different institutions, programmes and disciplines.

Choosing Norway as an example, this article contributes to illuminating student and staff perspectives of study preparedness across different higher education institutions and disciplines. Supported by literature, findings of this study might be generalised to other countries. The following two questions are addressed: first, to what extent are beginner students perceived to be academically prepared in academic reading and writing skills, basic disciplinary skills and academic working skills. Second, what differences and similarities can be observed across disciplines?

Framework: academic preparedness

There are many different views on and definitions of quality (Harvey & Green, 1993; Van Kemenade *et al.*, 2008). In this article, quality in higher education is conceptualised as depending on staff qualifications, curriculum and infrastructure and on how well students are academically prepared (Gibbs, 2010; Smith & Naylor, 2005). Dimensions of academic preparedness used in this article are basically universal at a general level across disciplines with different epistemologies. However, differences in expectations of what students should master are emerging as one moves on to well-established schemes of differentiation between academic disciplines.

Academic working skills

Quality, intensity and duration of effort invested in studying, are key characteristics of what is denoted as academic working skills. It implies working in an engaged, focused and persistent way, following academic goals, despite obstacles and distractions (Farrington *et al.*, 2012). For beginner students it is important to exercise autonomy in planning and engaging with the tasks of studying. This might be a change from upper-secondary school, where they were exposed to a more structured and teacher-led curriculum. Thus, it is assumed that academic working skills are a crucial factor for academic preparedness across all disciplines.

Reading and writing

Reading and writing are core strategies by which students learn new subjects and develop their knowledge about new fields of study (Lea & Street, 1998). In the following, reading on different levels is seen as a core learning strategy, while writing is regarded as both a learning strategy and a way to demonstrate learning outcomes.

Reading

Despite an increase in new technologies in higher education, reading large amounts of text is still a dominant learning strategy (Serrano *et al.*, 2019). At

the same time, the literature on reading compliance provides evidence that non-compliant reading behaviour is increasing among students, particularly undergraduates (Hatteberg & Steffy, 2013). Studying reading habits and attitudes among undergraduates at three higher education institutions in Sweden, Pecorari *et al.* (2012) found ambiguous results. On the one hand, most students evaluated reading as positive for learning. On the other hand, their self-reported reading behaviour pointed in the opposite direction; many students reported some degree of non-compliance with reading assignments. Scholars argue to focus more strongly on facilitating students' reading compliance in a higher education context, for example, with quizzes or providing students with a perspective of time management (Sharma *et al.*, 2013).

Others argue for improving students' generic reading skills at upper-secondary school as a prerequisite for a smooth transition to higher education (Jolliffe & Harl, 2008; McDaniel, 2014; McKenna & Penner, 2013; Springer *et al.*, 2014). These strategies might comprise the instruction of academic reading, defined as a conscious and active way to relate to a text with respect to a specific question (Roe, 2006). In their classical work, Palinscar and Brown (1984) provided four reading strategies: questioning, summarising, clarifying and predicting. First, questioning comprises the identification of information that is crucial to warrant further attention and provides a context for studying the text more deeply. Second, summarising means identifying the essence of a text and integrating this into a synthesis. Third, clarifying implies the identification and clarification of unclear, difficult parts of a text. It provides the motivation to reduce confusion through re-reading the text. Fourth, predicting comprises a combination of the reader's prior knowledge, new knowledge from the text, the text's structure to formulate a hypothesis in relation to the direction of the text and the author's intent in writing. Similar classifications have been developed by other scholars. For academic preparedness, Springer *et al.* (2014) discuss four reading strategies that mainly overlap with these strategies.

Finally, scholars argue that reading strategies beyond upper-secondary school level are related to disciplinary specialisation. A student in upper-secondary school who does a good job in reading a novel in English class might not be able to make much sense of algebra books and *vice versa*. They make the point that specialised and less generalised skills, which are more difficult to acquire, are learnt at higher levels of literacy development, (Shanahan & Shanahan, 2008).

Writing

Defined as a strategy for problem solving (Hertzberg, 2006), some writing strategies are more visible (for example, planning or revising) than others, being primarily mental. The literature distinguishes between generic writing, still the dominant approach to teaching writing at UK universities (Wingate *et al.*, 2011), and more specific 'disciplinary' writing (Shanahan & Shanahan,

2012) or genre-based writing (Wingate *et al.*, 2011). While the former is commonly seen as an explorative strategy to understand a subject, the latter emphasises the specific writing culture within a discipline, for example, with respect to terminology, structure and style. This approach has dominated the discourse for the last three decades (Bazerman, 1988; Berkenkotter & Huckin, 1995). Scholars argue that successful writing is shaped within a discipline; and to learn a discipline means to learn a specific way to write within and about a discipline (Lea & Street, 1998). An example for disciplinary writing in natural science is the use of passive tense and nominalisation (Shanahan *et al.*, 2011). For engineering students, for example, successful writing implies clearly structured reports in a technical language, while for journalistic students this implies convincing comments, combining facts with a writing style addressing the needs of a certain audience.

The literature has addressed ambiguity in requirements of student writing. According to Gourlay (2009) many students struggle to achieve positive writing outcomes, which might lead to disengagement. She suggested that attempts to discuss requirements could reduce confusion and worry among students. The importance of clear communication and feedback is also highlighted by Acker and Halasek (2008). They drew on a collaboration programme between university staff and upper-secondary teachers to address study success after transition. Students were asked to write essays, after which they got feedback from both staff groups. The article concluded that feedback from both institutions helps students get a better understanding of differences and similarities of what 'good writing' means. Investigating the relation between students' confidence in their generic skills and transition to university for a group of undergraduate students, at one university in Scotland, Goldfinch and Hughes (2007) noted that students often complained that teachers neglect to demonstrate academic writing skills.

Nallaya (2018) highlighted the importance of introducing students to the academic literacies in their disciplines and writing models they need to produce text. According to her study, teachers appear to be conscious that students continue to meet obstacles in their writing, in spite of having received detailed explanation.

Students' notetaking was explored by van der Meer (2012) who concluded that students might experience great challenges in taking good notes and therefore prefer to be provided with notes. Nevertheless, note-taking by hand was shown to be a more efficient strategy for learning and memorising, even compared with digital notetaking (Mueller & Oppenheimer, 2014).

In sum, the literature reveals that reading and writing skills at the university level can be characterised as both generic and discipline specific. Especially for writing, scholars argue for the importance of discipline-specific writing skills for academic preparedness. Questioning, summarising, clarifying and predicting are all phases of the learning process that students need to pursue despite challenges, exemplifying what it means to master academic work. Thus, academic working skills comprise the acquisition of reading and writing skills, both on

generic and discipline-specific levels, and thus tie together several dimensions of academic preparedness.

Disciplines

Drawing on the assumption that disciplines differ in their epistemology, this article analytically distinguishes between hard *versus* soft disciplines. This categorisation has been inspired by Becher and Trowler (1989), who distinguish between hard and soft, and applied and pure disciplines. Here, the focus is on the first distinction. Hard disciplines, for example, natural sciences and engineering, are characterised by an accumulative and highly structured epistemology. In contrast, soft disciplines, for example, humanities and social sciences, are characterised by a less accumulative and more open epistemology. However, hard and soft disciplines might rather be regarded as continuum than a dichotomy. Further, another strand of research addresses the importance of basic disciplinary knowledge and skills in the study discipline for a smooth transition to higher education.

The study

Research context

In 2003, the Quality Reform was implemented in Norwegian higher education. One of the aims was to reduce dropout and improve study retention and to make the transition to higher education smoother by introducing more structured study programmes with more frequent examinations, assignments and more feedback to the students. A research-based evaluation of the reform some years later, however, has shown ambiguous results (Aamodt *et al.*, 2006).

Methods

This article draws on interview data from a larger study originally collecting data from focus group interviews with teachers and students at upper-secondary school and higher education (Lødding & Aamodt, 2015). The analytical framework of this article is informed by a 'systematic search and review' approach (Grant & Booth, 2009). This means a systematic literature search in selected databases was conducted to collect relevant studies according to the research questions, which were then narratively summarised.

Considering the complexity of higher education, the intention in the original study was to achieve variation along several dimensions. To achieve variation across disciplines, the hard-soft and pure-applied dimensions, developed by Becher and Trowler (1989), was used. Table 1 indicates how the recruited

Table 1. Selection of study programmes, some of which were located at two different institutions (2), according to the two dimensions hard–soft and pure–applied.

	Hard	Soft
Pure	Geology (2)	Music theory Law studies (2)
Applied	Engineering (Bachelor) Engineering (Master's) Physical education (2)	Nursing (2) Music performance Teacher education in Nordic studies at upper-secondary (2)

disciplines and programmes are distributed along these dimensions, although it may be argued that several subjects have both hard and soft elements.

Music and physical education were chosen as advanced continuations of two academic tracks in upper-secondary school. Moreover, variation in selectivity was pursued: law, Master's engineering and music performance are programmes with hard competition for admission, while nursing, teacher education and physical education are less competitive. Variation in gender distribution was another aim in the sampling. To include both old universities and regional colleges in the total sample, each discipline was to be represented by two geographically distant institutions. However, for the Norwegian context it was assumed that differences between institutions would be smaller than differences between disciplines.

First contact was made with the leader of each programme, who recruited colleagues and students to the two different group interviews. The guideline for selecting students emphasised that they should not all be high achievers. Among teachers only those were chosen, who had experience with first-year students. Only one institution refused to participate. Therefore, a Bachelor engineering programme at a different institution was chosen, where all qualified applicants were admitted. A total of 58 teachers and of 50 students were interviewed in small face-to-face groups between February and May 2015. Semi-structured interview guides were used, and each interview took on average one hour.

Thus, the material reflects variation across important dimensions such as selectivity and epistemologies. Thereby, the study enables discovery of significant differences in the informants' experiences. More importantly, similarities that might emerge can be assumed to exist across acknowledged and well-established differences.

Originally, focus group interviews were recorded, transcribed and further analysed through qualitative content and thematic analyses, using NVivo (Rapley, 2016). Coding the data, some aspects of being academically prepared emerged as the most prominent concerns of teachers. These are capacity to work independently, writing skills and capacity to read large amounts of texts. Many statements from students confirmed that these are areas where they struggled to cope. Moreover, critical thinking and ability to see connections across the curriculum were more often highlighted by teachers than among students.

In this article, a re-analysis of data (Bishop, 2011) was applied, informed by literature reviews on academic writing, reading literacy and academic work habits. The following questions were asked to inform the interpretation of findings: how well are students academically prepared for higher education from the perspective of teachers and students themselves? Are there differences in their understanding of academic preparedness and its three dimensions across different disciplines?

Findings

Findings are structured according to the dimensions of academic preparedness. Despite the analytical distinction between the three dimensions, they are conceptually intertwined, which is also reflected in citations by the informants. In each section, differences and similarities across hard and soft disciplines are elaborated.

Academic working skills

While teachers' statements imply complaints about today's students having become more like school pupils, many students confirm this by indicating that they would benefit from a tighter structure in organising their time and from more regular feedback and control by teachers, similar to upper-secondary school. This is in line with the intentions of the Quality Reform.

Despite facing resistance, academically successful students appear to work hard for their academic goals, in contrast to those who struggle to cope with the amount of work required. A teacher in law studies describes a successful and selective student group: 'We are happy, as we have high achieving students who compete for a place to study law'. Besides music performance, where only one in 10 applicants are admitted mainly based on audition, law and Master engineering programme were chosen to represent selective programmes for this study. They are characterised by a more homogeneous, high-achieving student population who has passed the entrance qualification to higher education, compared to students in non-selective programmes, for example in music theory, illustrated by the following quote of a student: 'We are those who were not admitted into studying music performance'. Competition for admission vary for the remaining programmes including programmes such as engineering (Bachelor). Here, teachers acknowledge that they contribute to qualify their students at the beginning of their study, in particularly students from the local area.

Selective programmes, however, give the impression of a smoother transition, as curriculum structure, frequency of lectures or seminars, frequent assignments, feedback and assessment are aligned with upper-secondary education. A tight structure combined with high working demands has always

characterised the Master's engineering programme. In law studies, however, the tightening of a time structure to facilitate the students' attention and priorities, has been introduced in relatively recent reforms. Hard work at upper-secondary school, necessary for getting access to law studies, due to strong competition, is seen by several students as a good preparation. Students provide the impression that high-achieving classmates also stimulate hard work. At the same time, their statements reveal that learning is more demanding at university. As this student states: '[Y]ou have to think more. More advanced, in any event'. Furthermore, law students reveal that classroom instruction resembles seminar instruction at the university.

Similarly, Master's engineering students seem to be satisfied to be confronted with a relatively rigid structure in their studies, although this is surprising for some of them. They highlight that tutoring by more advanced students made them work. Moreover, one teacher in Master's engineering points out that frequent mandatory assignments was something students had asked for several years ago to be able to keep up with the pace of progression.

In programmes with fewer lectures and seminars, students indicate that they struggle with self-discipline. A teacher in music theory reports providing students with a detailed overview of what to read and listen to before each lecture to facilitate their preparation. At the time of the interviews, music theory did not require regular assignments. Discussing this, the teachers insisted that some of the students are to become Master's students, sooner or later they need to work independently on a regular basis.

The perceived lack of academic perseverance and reading non-compliance, which is largely referred to in the literature (Pecorari *et al.*, 2012) across disciplines, is also an explicit concern in interviews with teachers in soft disciplines, such as nursing, physical education and music theory, but also in a hard discipline such as geology. A teacher in music theory provides the following understanding: 'To be academically prepared means to take an attitude of responsibility for one's own work, in combination with a higher working load compared to upper-secondary school'.

In hard subjects the volume of texts is not always an issue. A teacher in geology described the value of making the students concentrate on understanding all elements in one complex equation. This has transfer value, he argued: 'Then [the students] know that the others are not necessarily impossible'. Teachers of geology made frequent references to learning strategies in upper-secondary school, lacking in-depth approaches and dedication: 'In upper-secondary school you are supposed to perform at test after test after test, week after week after week. You need to be quite mature to exercise so much and to digest it all'.

A teacher in geology critically evaluates the students' study techniques:

It appears that those students, coming directly from upper-secondary school, have learnt to reproduce knowledge, but they have neither learnt to use or to retrieve knowledge on their own or being critical to knowledge They remember, and they just repeat what they have read. They have not critical thoughts that we expect at university. They are completely unprepared.

Students of music performance, however, are explicitly aware of the self-regulation and dedication needed to succeed, as are their teachers. Employment of learning strategies is expressed as an endeavour 'to become one's own best teacher' (Music performance, student). To become a good musician is a long-term goal. These students also signal that they feel alone with a lot of time every day to practise their instruments. A teacher in music performance stated that he respects the students' hard work, and his colleague added:

Those who are admitted here have overcome many barriers. They have practised during several thousand hours, and this has transference value to other subjects. Compared to other students, they are often successful in whatever they do.

Across hard and soft disciplines teachers appear to request basic skills, generic literacy skills and study techniques including notetaking and learning techniques.

Note-taking by hand is mentioned by teachers of different study programmes as an efficient learning strategy. One teacher in physical education reports that she tries to convince her students that there is evidence for better learning by means of longhand note-taking, thus, by actively manipulating and organising the material of the lecture, rather than just listening.

For fewer assessments and a higher number of pages, a student in physical education expresses feelings of unpreparedness, anticipating that the reading content early in the semester will be forgotten before the examination period starts. She seems to adhere to the logics of reading for specific assessment events as this was incorporated in upper-secondary school. Taking responsibility for continuous and hard work to incrementally build knowledge and skills, is not necessarily learnt in upper-secondary school with its practice of assessment preparation.

Writing literacy

Teachers and students refer to a lack of adequate academic writing skills. Across disciplines generic and disciplinary writing are regarded as crucial for achievement and thus, academic preparedness, illustrated by the following quotation: 'Independent of the studies they choose, students have to master coherent writing' (Teacher in teacher education in Nordic studies).

Across disciplines teachers complain about students' relatively weak generic writing skills. Teachers in law at two different institutions provide the impression that students' generic writing skills from upper-secondary school are not reflected in writing assignments at university. They further wonder about decreasing

orthographic skills among students and the fact that they write very brief texts. The perception of decreasing generic writing skills in Norwegian is also reflected in statements of teachers in hard subjects such as geology and engineering.

There are, however, different nuances in their perceptions. With few exceptions, within soft disciplines, informants seem to value the importance of generic skills, such as building a logical argument, dispositioning and formulating complete sentences and texts. Within hard disciplines informants, to a stronger degree, seem to require disciplinary skills, such as building a text section 'as a natural scientist'.

The difference in the perception of literacy skills for soft and hard disciplines was found for writing strategies but not explicitly for reading strategies. In the following, differences in the perceptions for different study programmes within soft and hard disciplines are presented.

Soft disciplines

At two institutions for teacher education at upper-secondary level, teachers emphasise writing literacy as among the most important factors of preparedness for higher education. One teacher in teachers' education in Nordic studies points out that students seem to have difficulties with writing a longer text and adds that part of her instruction deals with teaching students to write. She is surprised at how much time this takes. Her colleague in literature history adds:

To formulate complete sentences, to build an argument, this is the problem. In addition, the terminology, i.e., to get into an academic discussion [...] is a big challenge, when they come from upper-secondary school.

According to a colleague in the same discipline, approximately two-thirds of their beginner students need to improve their academic writing skills.

From a student's perspective, text analysis seems to be demanding, involving complicated terminology and theory. Other students, however, mention particularly teachers in upper-secondary school who helped them to develop and support their writing skills.

Teachers in law studies highlight that students' ability of structuring a text and discussing with pro and contra arguments, is useful in law studies. According to another colleague, learning the difference between description and analysis seems to take much time for new students. A group of law students from one institution compares what they had learnt about writing in school with the norms within the discipline. According to one student, at lower-secondary school they worked much on expanding vocabulary. In higher education, by contrast, she had become aware that precision is important, and synonyms are not necessarily appropriate. However, like many other students, she now complains that they wrote so many poetry analyses and fictional texts, which are no longer relevant. Another law student adds that the genre they use in law was quite new and specific to him that it might not

be a good idea to learn it earlier. This suggests that there are limits to how discipline-specific the preparations can be.

Hard disciplines

More directly than their counterparts in soft disciplines, teachers in hard disciplines appear to accuse upper-secondary schools of not having done their job. They argue to a stronger degree for more disciplinary writing ('like a scientist'). A teacher in construction engineering, an applied discipline, refers to the specific relevance of report writing for working life by complaining about upper-secondary school: 'To practise writing briefly would be useful. They do not learn this kind of writing in [...] school that we ask for, they have another focus'. The students need to learn how to write a scientific report without personal subject and in passive tense, 'reports that can be used in a court of law', according to this teacher. Similarly, a teacher in geology realises that the Norwegian subject has done an inappropriate job for many years and complains: '[...] they cannot write a text. More precisely, they are not able to build a text section as a natural scientist, write an appropriate text following a concise argument'.

Across different programmes, several teachers provide the impression that the curriculum in Norwegian in upper-secondary school focuses on fictional texts and with a lesser emphasis on non-fictional texts, for example, this geology teacher:

... as I am a natural scientist, the Norwegian subject includes too much poetry analysis, novels and interpretation ..., which is not precise. But they should learn to write, because they need this in all subjects.

This picture is also validated by students' statements. Engineering students at one institution seem to be conscious about different requirements for different types of texts. A stronger focus on report writing was also mentioned by geology students. As one of them makes the point: 'I never need to write poetry [analysis] or an essay. If I could have learnt to write a report ... that would have been of great help'. Another student in geology explains: 'According to the guidelines you should write 'it is observed' instead of 'I see'.

A different pattern is revealed for physical education, where informants more strongly request generic writing skills. At one institute teachers complain about students' lack of Norwegian grammar skills. For students 'non-adequate use of prepositions', 'poor sentence construction', 'lack of structure' and 'comma mistakes' were mentioned by one teacher in physical education. This picture is verified by several students referring to low standards in Norwegian class at upper-secondary level:

I realise that I have difficulties to write very academically ... I would like to write better texts. We did not write anything related to higher education. You meet quite another

standard of writing when you enter higher education. Upper-secondary school is behind.

In sum, across different study programmes within hard disciplines statements illustrate a range of requirements in disciplinary writing as well as generic writing skills.

Reading literacy

Informants refer to a gap in preparedness when it comes to reading skills, such as broad and narrow reading, synthesising of text and strategic reading. Teachers and students refer to unpreparedness in generic reading literacy, rather than disciplinary reading. The point that reading is crucial for academic preparedness can be illustrated by the following quote from a teacher in music theory: 'This ... characterises university students ... that they must read and think for themselves and try to find connections'.

Several teachers refer to the ability to read large amounts of texts (broad reading) in a shorter period (speed reading) and the ability to extract the most important information (close reading). A teacher in physical education contrasts the reading amount of higher education with that of upper-secondary school. 'In upper-secondary school, they have just one book they use over two years, and here you have three times as much over six weeks.' Further, according to a teacher in teacher education of Nordic studies many students struggle with extracting the most important information when reading a text. Nevertheless, according to a teacher in physical education, this ability distinguishes the high from the low achievers.

In addition to the ability to tackle a high workload, teachers in law mention the ability to cope with different sources. Even though many students seem to be relatively skilled in broad reading, they appear to lack the ability to understand a legal text, which requires deep reading techniques to understand details and nuances. Selecting the essence from a large amount of text might be a challenge, particularly for beginner students.

Also, teachers in nursing sciences refer to students complaining about large amounts of text, who similarly to their counterparts in law studies, seem to meet difficulties in extracting the essence of large text amounts. To ease students' difficulties, the teachers had divided the literature into smaller units corresponding to the lectures but still they perceived the students to be overwhelmed by the workload.

Law students might be better prepared for the challenge of reading large amounts of text, compared with nursing students. The former are high achievers from upper-secondary school, a selective group, who have had stronger competition to enter higher education (Strømme & Hansen, 2017). However, at the

same time law teachers' statements indicate that their students are relatively unprepared in narrow and deep reading.

Teachers' statements on reading techniques were supported by students' statements. Students of music theory refer to 'broad reading' and 'narrow reading', terms which they regard as very important. One of them compared the difference in reading load between the two educational levels as significant: 'At upper-secondary school, we took a test on one chapter; if it was 50 pages, you thought it was a lot [...] but here, there are several hundred [pages to read]'.

In contrast, some students confirm that they had already learnt to extract and synthesise information in upper-secondary school. One student in teacher education explains how she learnt to write brief summaries of paragraphs according to her former history teacher's recommendations, which she found to be very helpful, also in higher education. A law student refers to experiences with a project in upper-secondary school, where they had to extract the essence of a written text.

Some of the students demonstrate that they have understood the task, like a student in engineering: 'I know what I am searching, ... I just screen the text, and when I find something which is relevant, I use it ... So, I can save much time.' According to a geology student 'you cannot read a whole text and remember everything. You have to try to find out what they aim to say.' A nursing student states that this was exactly what one did before the examination: to focus and to find what is important in large texts and write summaries. Yet other students actively deny that broad and narrow reading was an issue in upper-secondary school.

Furthermore, the relation between time and text amount appears to be an important issue for several students. The students indicate that reading workload appears to be much more clearly defined at upper-secondary school. Further, they reveal that it was also more clearly defined for upper-secondary school *when* one should read: before tests.

In sum, students define reading literacy skills in higher education as the capacity to extract the essence from large amounts of texts, something which is highly important. Students disagree upon whether this was something they learnt in upper-secondary school; at the same time all of them appear to recognise the importance of these skills for higher education, in line with the statements of their teachers.

Basic disciplinary skills

For basic disciplinary skills, there appear to be some differences between disciplines. Teachers in hard disciplines complain about students' weak skills from upper-secondary school in science, engineering, technology and

mathematics (STEM) subjects. The following quotation illustrates the frustration of a teacher in geology:

[Students] are not prepared ... I provide a course in programming which includes mathematics, and I try to put in so much mathematics as possible to continue their training in mathematics. But this is not the reason they came to university. I have to make these tasks relevant for students; that they see that they are useful.

A teacher in Master's engineering refers to English skills as important for university studies, as part of the textbooks are in English as are part of the lectures. One teacher in physical education assesses students as relatively prepared, as their syllabus in upper-secondary school appears to be up to date. At the same time, he complains about a lack of preparation in anatomy and mechanics, as they have different study programmes at upper-secondary level. He states: 'Those with a background in natural sciences will have a smoother transition than those without such a background.' In soft disciplines, teachers refer to oral and written Norwegian skills at an appropriate level as a prerequisite for a smooth transition.

Conclusion

From the perspectives of teachers and students, this article asked how well students are academically prepared for higher education, and what differences and similarities could be observed across disciplines? Academic preparedness was conceptualised by including academic reading and writing skills, basic disciplinary skills and academic working skills. In general, findings indicate a certain academic unpreparedness of students when they enter higher education. Both, teachers and students seem to blame secondary school for not having done an appropriate job in preparing students for higher education.

According to teachers in the sample, students are not used to working hard or independently enough, struggling to read large amounts of text. Coming directly from upper-secondary school, beginner students are perceived to mainly reproduce knowledge, as they are used to reading before tests, and they might also have shortcomings in study techniques as, for example, note-taking. The hard work required is manifested not only as reading large amounts of text but also as understanding complex equations or as training for hours daily with the long-term goal of becoming a professional musician.

Across disciplines, the data indicate a lack among new students in academic writing but also in elementary orthographic skills. There are serious gaps in generic as well as disciplinary reading, in synthesising of text and in extracting the most important information from large amounts of text.

The findings from the literature, however, reveal a more nuanced picture and not blaming only previous schooling and students. Describing a cooperation between two high schools and one university in the United States of America,

Acker and Halasek (2008) argued that feedback from *both* institutions could help students understand different requirements, and thus their different roles. Conclusions from another group of studies pointed in a different direction. Several scholars argued for increasing teachers' engagement to facilitate students' learning, academic writing and note-taking at the university (Wingate, 2007; Bishop, 2011; Määttä & Uusiautti, 2012; van der Meer, 2012; Reed *et al.*, 2016; Nallaya, 2018). Beginner students are expected to form a new identity, as independent and dedicated learners (Gourlay, 2009; Christie *et al.*, 2013). In this respect, students of music performance in the sample are an interesting case, as they express a feeling of loneliness confronted with 'unstructured' time at their disposal for improving their skills.

For academic hard-working students the data illustrate a clear difference in perspectives across disciplines between non-selective and selective study programmes. On the one hand, some selective programmes, such as law and engineering at Master's level, seem to be more aligned with upper-secondary school in being more structured, with teachers providing more regular feedback. It was found that the two study programmes require more intense and mandatory submissions. Besides, law students seem to be more exposed to student-centred learning. Students in these programmes are a selected group with generally good grades from upper-secondary school, who have earned access via good grades to the programme of their choice and thus can be expected to be better prepared compared with their counterparts in open programmes with no specific entrance qualification. By contrast to selective programmes such as law and engineering (Master) other study programmes, for example, music theory, provide only a few lectures and formally organised learning arrangements. Students in music performance, are also expected to exercise self-discipline with a lot of time at their disposal. Despite feeling alone, these students are nevertheless the only ones in the sample who receive one-to-one tuition from their teachers.

Ironically, findings reveal that students in selective study programmes appear to achieve better support in their learning, with more scaffolding, while students in non-selective programmes seem to meet less support. Thus, the latter to a greater degree than their high-achieving counterparts, must figure out for themselves what is required of them. Thus, well-prepared and high-achieving students contribute to higher quality in higher education compared with average students.

For writing, teachers in most disciplines experience lack of adequate writing skills among students. Writing and note-taking skills appear to be an important issue in teacher interviews with different emphasis according to discipline. Some teachers request precise language and punctuation (generic writing skills), teachers in law request argumentation skills, and those in hard sciences (engineering and geology) require skills in writing technical reports. Requesting better writing skills, these teachers assume that students have more experience in poetry analysis, fictional texts and creative writing

from upper-secondary school. This assumption was confirmed by students of different disciplines. As expected, the data reveal the importance of discipline-specific skills that will be more easily developed within a higher education context.

At the same time, the data show a lack of adequate generic writing skills across disciplines. Since the development of generic writing skills can be expected in upper-secondary school, this finding raises more serious concerns for quality in higher education.

For reading skills, teachers mention weak skills in broad and narrow reading and extracting the essence from texts, which is also pointed out in student interviews. Across disciplines, some students referred to their teachers in upper-secondary school as helpful in supporting their preparation for higher education.

Overall, the data reveal two different approaches addressing academic preparedness. First, in trying to ease transition, teachers appear to try hard to make the study programme more like school subjects. Second, teachers argue that students sooner or later need to adapt and need to understand that they must take responsibility for their own learning. Thus, it can be asked how much university should be like a school, and how much should upper-secondary school help students to be prepared for higher education. Informants report that since many students are poorly prepared, it is necessary to train them at a more basic level than expected for higher education.

Limitations and implications

A strength of this study lies in the rich data comprising the perspectives of students and teachers across different disciplines in higher education, addressing two sides of quality in higher education, namely staff and students (Gibbs 2010; Smith & Naylor, 2005). To achieve variation, institutions and disciplines were selected according to soft-hard and pure-applied divisions, geography, gender and selectivity.

Even though the empirical data are limited to one country context, the broad review of international literature contributes to generalisability beyond Norway. The degree of structure in specific disciplines such as law studies may vary across countries. However, the competition of highly prepared students and support within formally organised arrangements to facilitate learning may be explored on a broader basis.

A second limitation is a lack of depth of the analysis for different disciplines. Even though the sample is relatively large, it covers several disciplines. A more fine-grained analysis for single disciplines is beyond the scope of the study. Further studies might focus on single disciplines or specific student populations and compare the Norwegian context with other countries with a different educational structure.

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References

- Aamodt, P. O., Hovdhaugen, E. & Opheim, V., 2006, *Evaluering av Kvalitetsreformen: Delrapport 6: Den nye studiehverdagen* [Evaluation of the Quality Reform], NIFU-Report (Oslo, NIFU).
- Acker, S.R. & Halasek, K., 2008, 'Preparing high school students for college-level writing: using ePortfolio to support a successful transition', *Journal of General Education*, 57, pp. 1–14.
- Bazerman, C., 1988, *Shaping Written Knowledge: The genre and activity of the experimental article in science* (Wisconsin, University of Wisconsin Press).
- Becher, T. & Trowler, P., 1989, *Academic Tribes and Territories* (Buckingham, Society for Research into Higher Education Open University Press).
- Berkenkotter, C. & Huckin, T.N., 1995, *Genre Knowledge in Disciplinary Communication: Cognition/culture/power* (Hillsdale, NJ, Lawrence Erlbaum).
- Bishop, L., 2011, 'Secondary analysis of qualitative data', in Silverman, D. (Ed.), 2011, *Qualitative Research*, third edition, pp. 395–411 (Los Angeles, Sage).
- Briggs, A.R.J., Clark, J. & Hall, I., 2012, 'Building bridges: understanding student transition to university', *Quality in Higher Education*, 18(1), pp. 3–21.
- Christie, H., Barron, P. & D'Annunzio-Green, N., 2013, 'Direct entrants in transition: becoming independent learners', *Studies in Higher Education*, 38(4), pp. 623–37.
- Farrington, C.A., Roderick, M., Allensworth, E., Nagaoka, J., Keyes, T.S., Johnson, D.W. & Beechum, N.O., 2012, *Teaching Adolescents to Become Learners. The role of noncognitive factors in shaping school performance* (Chicago, University of Chicago, Urban Education Institute).
- Gibbs, G., 2010, *Dimensions of Quality* (York, Higher Education Academy).
- Goldfinch, J. & Hughes, M., 2007, 'Skills, learning styles and success of first-year undergraduates', *Active Learning in Higher Education*, 8(3), pp. 259–73.
- Gourlay, L., 2009, 'Threshold practices: becoming a student through academic literacies', *London Review of Education*, 7(2), pp. 181–92.
- Grant, M.J. & Booth, A., 2009, 'A typology of reviews: an analysis of 14 review types and associated methodologies', *Health Information and Libraries Journal*, 26, pp. 91–108.
- Harvey, L. & Drew, S. with Smith, M., 2006, *The First-Year Experience: A review of literature* (Sheffield, Higher Education Academy).
- Harvey, L. & Green, D., 1993, 'Defining quality', *Assessment & Evaluation in Higher Education*, 18(1), pp. 9–34.

- Hatteberg, S.J. & Steffy, K., 2013, 'Increasing reading compliance of undergraduates: an evaluation of compliance methods', *Teaching Sociology*, 41(4), pp. 346–52.
- Hertzberg, F., 2006, 'Skrievkompetanse på tvers av fag [Writing competencies across subjects]', in Elstad, E. & Turmo, A. (Eds.), 2006, *Læringsstrategier. Søkelys på lærernes praksis*, pp. 111–26 (Oslo, Universitetsforlaget).
- Jolliffe, D.A. & Harl, A., 2008, 'Studying the "Reading Transition" from high school to college: what are our students reading and why?', *College English*, 70, pp. 599–617.
- Jonsmoen, K.M. & Greek, M., 2017, 'Lecturers' text competencies and guidance towards academic literacy', *Educational Action Research*, 25(3), pp. 354–69.
- Lea, M.R. & Street, B.V., 1998, 'Student writing in higher education: an academic literacies approach', *Studies in Higher Education*, 23(2), pp. 157–72.
- Lødding, B. & Aamodt, P.O., 2015, *Studieforberedt etter studieforberedende? Overgangen mellom studieforberedende utdanningsprogram og høyere utdanning belyst gjennom gruppesamtaler med lærere, studenter og elever [Prepared for higher education after upper secondary school]*, Rapport 2015:28 (Oslo, NIFU).
- Määttä, K. & Uusiautti, S., 2012, 'How to enhance the smoothness of university students' study paths', *International Journal of Research Studies in Education*, 1(1), pp. 47–60.
- McDaniel, K.N., 2014, 'Read long and prosper: five do's and don'ts for preparing students for college', *The Clearing House: A Journal of Educational Strategies, Issues and Ideas*, 87(2), pp. 83–87.
- McKenna, G. & Penner, A.J., 2013, 'Literacy and learning', *College Quarterly*, 16(4), p. n4.
- Mueller, P.A. & Oppenheimer, D.M., 2014, 'The pen is mightier than the keyboard: advantages of longhand over laptop note taking', *Psychological Science*, 25(6), pp. 1159–68.
- Mulhern, G. & Wylie, J., 2006, 'Mathematical prerequisites for learning statistics in psychology: assessing core skills of numeracy and mathematical reasoning among undergraduates', *Psychology Learning & Teaching*, 5(2), pp. 119–32.
- Nallaya, S., 2018, 'An exploration of how first year students are inducted into their discipline's academic discourse', *International Journal of Educational Research*, 87, pp. 57–66.
- Palinscar, A.S. & Brown, A.L., 1984, 'Reciprocal teaching of comprehension-fostering and comprehension-monitoring activities', *Cognition and Instruction*, 1(2), pp. 117–75.
- Pecorari, D., Shaw, P., Irvine, A., Malmström, H. & Mežek, Š., 2012, 'Reading in tertiary education: undergraduate student practices and attitudes', *Quality in Higher Education*, 18(2), pp. 235–56.
- Penn-Edwards, D.S., 2011, 'Engaging with higher education academic support: a first year student teacher transition model', *European Journal of Education*, 46(4), pp. 566–80.
- Rapley, T., 2016, 'Some pragmatics of qualitative data analysis', in Silverman, D. (Ed.), 2016, *Qualitative Research*, pp. 331–45 (Los Angeles, Sage).
- Reed, D.K., Rimel, H. & Hallett, A., 2016, 'Note-taking interventions for college students: a synthesis and meta-analysis of the literature', *Journal of Research on Educational Effectiveness*, 9(3), pp. 307–33.
- Roe, A., 2006, 'Leseopplæring og lesestrategier [Reading instruction and reading strategies]', in Elstad, E. & Turmo, A. (Eds.), 2006, *Læringsstrategier. Søkelys på lærernes praksis*, pp. 67–92 (Oslo, Universitetsforlaget).
- Serrano, D.R., Dea-Ayuela, M.A., Gonzalez-Burgos, E., Serrano-Gil, A. & Lalatsa, A., 2019, 'Technology-enhanced learning in higher education: how to enhance student engagement through blended learning', *European Journal of Education*, 54(2), pp. 1–14.
- Shanahan, C., Shanahan, T. & Misischia, C., 2011, 'Analysis of expert readers in three disciplines: history, mathematics, and chemistry', *Journal of Literacy Research*, 43(4), pp. 393–429.

- Shanahan, T. & Shanahan, C., 2008, 'Teaching disciplinary literacy to adolescents: rethinking content-area literacy', *Harvard Educational Review*, 78(1), pp. 40–59.
- Shanahan, T. & Shanahan, C., 2012, 'What is disciplinary literacy and why does it matter?' *Topics in Language Disorders*, 32(1), pp. 7–18.
- Sharma, A., Van Hoof, B. & Pursel, B., 2013, 'An assessment of reading compliance decisions among undergraduate students', *Journal of the Scholarship of Teaching and Learning*, 13(4), pp. 103–25.
- Smith, J. & Naylor, R., 2005, 'Schooling effects on subsequent university performance', *Economics of Education Review*, 24(5), pp. 549–62.
- Springer, S.E., Wilson, T.J. & Dole, J.A., 2014, 'Ready or not recognizing and preparing college-ready students', *Journal of Adolescent & Adult Literacy*, 58(4), pp. 299–307.
- Strømme, T.B. & Hansen, M.N., 2017, 'Closure in the elite professions: the field of law and medicine in an egalitarian context', *Journal of Education and Work*, 30(2), pp. 168–85.
- Van Der Meer, J., 2012, 'Students' note-taking challenges in the twenty-first century: considerations for teachers and academic staff developers', *Teaching in Higher Education*, 17(1), pp. 13–23.
- Van Kemenade, E., Pupius, M. & Hardjono, T.W., 2008, 'More value to defining quality', *Quality in Higher Education*, 14(2), pp. 175–85.
- Wingate, U., 2007, 'A framework for transition: supporting 'learning to learn' in higher education', *Higher Education Quarterly*, 61(3), pp. 391–405.
- Wingate, U., Andon, N. & Cogo, A., 2011, 'Embedding academic writing instruction into subject teaching: a case study', *Active Learning in Higher Education*, 12(1), pp. 69–81.