Chapter 6
Science Talent and Unlimited Devotion: An Investigation of the Dynamics of University Students' Science Identities Through the Lens of Gendered Conceptualisations of Talent

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Historically, western universities have served as the exclusive final step of the educational system for the privileged, select few. Traditionally, and still now, a university education was a key factor in shaping the minds and values of young members of the elite. This university-educated elite comprised primarily white, upper-class men, and during the 1960s and 1970s, also working- and middleclass men and – more cautiously – women too (Trow, 2010). Changing the student population by admitting an increasingly diverse range of students is why some talk about massified and diversified higher education (Kogan, 1997; Scott, 1995) which in turn can be a political goal in and by itself. In Denmark, for example, the current goal is that 50% of the population have finished a higher education degree by the time they turn 30 (Ministry of Higher Education and Science, 2018). Despite the increased accessibility of higher education, inequality persists (e.g., Liu et al., 2016). Rather than moving from an elite to a mass higher education system, it is suggested that a parallel system developed that comprises an elite *and* a 'mass system', while still, the myth of meritocracy persists (Hartsmar et al., 2021; Leathwood & O'Connell, 2003; Scott, 2019). These parallel systems can be observed in various ways. For example, higher education is increasingly socially stratified globally, where universities in the anglophone countries make up the top of university rankings (Marginson, 2016), and there is social stratification to be observed both across type of institutions and types of study-programmes (Reimer & Thomsen, 2019). These parallel systems are also installed at a student level. As institutions appear massified, less selective and elite discussions about how the system recognizes extraordinary individuals

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followed. Gale and Tranter (2011, p. 42) for example, worried that "the inclusion of more people from disadvantaged backgrounds may be seen to undermine the talent and hard work of 'deserving individuals' and traditional notions of merit and standards". With the masses entering universities new sorting-mechanisms found their ways into universities. In this chapter we will explore talent as such a mechanism that works to identify and privilege a certain kind of student performance maybe to preserve the idea of higher education as elite.

Study programmes for the talented, honours programmes, talent camps and competitions and fast tracks have been established to provide special students with special benefits (e.g., time with teachers, access to lab-equipment, exchanges, tailored educational activities) (Rasmussen & Rasmussen 2015; Wolfensberger, 2012). Common to many of these initiatives is that they treat talent as a personal trait, something that derives from individual characteristics, abilities, and experiences, as a way to legitimize this privileging of the participants (Scager et al., 2012). The underlining idea is thus (as per, for example, Gagné's, 2011 writing on gifts, talent and equity) that society deserves to have these talented and gifted people develop their talents for the good of all. Talent is thus configured as particular personal traits that match societal needs (Csikszentmihalyi et al., 1997). However, fifty years of research have shown how education tend to treat social gifts as being natural ones and in consequence act to mask inequalities (Bourdieu, 1974, p. 32, in Radnor et al., 2007, p. 296).

This is the platform that this chapter will build on. We do not attempt to define talent. Instead, we investigate how teachers and students ascribe meaning to notions about what talent is and who the talents in higher education science practices are. We do so, referring to the common theme of this book on science identities, because we believe that thinking about doing and being in science with reference to the notion of talent, is an interesting way to unmask the norms and values that feed into how some positions appear attainable for some and not others.

6.1 The Ideal and Celebrated Student in Higher Education Science

Much of science education research is premised on needs to attract, retain and support talented students throughout the education system (e.g., Taber, 2007). Science identity research has provided valuable analytic lenses to unpack, in part, the social practices of who are recognised as someone who do or do not belong in science, and in part, how these social practices intersect with different students across social, gendered, and racial categories. Science identity researchers have demonstrated through a large body of literature how science education activities are historically and culturally constituted around preferences that determines how a science student is expected to be and what a 'good' science student looks like (see for example the work of Barton, 1998; Carlone, 2004). Thus, students who can navigate the system

and gain recognition are often, not surprisingly, also students who have relevant social resources to draw on (Archer et al., 2012b).

Archer and colleagues found how the ideal student in English schools were associated with being active and engaged – which is not as straightforward as it may sound. Working class girls, for example, engage actively in class by 'speaking their mind' and thus risk being recognised as contesting the teaching:

> Trying to 'change' and achieve 'success' is a difficult and costly endeavour. In many ways, the project appears 'impossible' because the girls inhabit social positionings and embodied identities that are always already read as 'wrong' within dominant educational discourses (Archer et al., 2007, p. 565).

And Archer and Francis (2006) show how the 'ideal' student is ascribed attributives associated with white, male and middle class why girls risk being dismissed as 'diligent, conformist, culture-bound, followers, passive, unassertive' (p. 66).

Wong and colleagues conceptualise the notion of the ideal student further and shows how it varies between national and cultural contexts (Wong & Chiu, 2020; Wong et al., 2021). What is recognised as ideal by students and teachers produces a spectrum of attractive and desirable attributes. This is why Wong and colleagues discuss how students who are not recognised or do not recognise themselves within the spectrum risk feeling 'not good enough' or feel they must work harder than those who are recognised, in order to achieve the same recognition from teachers or peers.

From this perspective, notions of the ideal student or talented students can be thought of as a category that works to keep power and privilege with the already powerful and privileged.

This category resonates with a study by Jackson and Nyström (2015) which investigates the notion and celebration of 'effortless achievers' in Sweden and the UK. They document how effortless achievers are often thought of as extra intelligent. Moreover, the category ensures that, rather than being poisoned as 'not good enough', effortless achievers who failed in their achievement continue to gain recognition as ideal students, they just need to adjust their effort the next time. The category also associates with prestige and social popularity and the authors conclude that the category interacts with gender, social class, ethnicity, and institutional settings, which explains why it is available only to some students (Jackson & Nyström, 2015).

Effortless achievers as ideal students have similarities with what Carlone (2004) describes as 'raw talent'. Carlone et al. (2014) use the notion of celebrated identities in science teaching (identities being recognised, highlighted, and valued) as a lens to approach the ways of acting that were celebrated, marginalized and/or condemned (p. 843). They find that these identities set the scene for students' understanding of who science is for and how one should navigate it to gain recognition.

Taken together, we find that the above authors bridge the notion of talent. Where Wong and colleagues' (2020, 2021) ideal student are suitable to explore what teachers and students value and recognise as desirable and good student characteristics, Archer and colleagues (2006, 2007) along with Jackson and Nyström (2015) and

Carlone (2004) bridge how ideal students' imaginations are played out on a subject level. With this as our empirical perspective, we will outline our theoretical approach.

6.2 Theoretical Lenses

Our purpose in this chapter is to investigate how the idea of talent in higher education science is produced, recognised, and rendered meaningful at the level of the individual. We will do so by interviewing both teachers and students and by applying the notions of power, positioning, recognition (mechanisms of inclusion and exclusion), and gender.

6.2.1 Norms and Meaning Making

Our starting point is an interest in how power is exercised at subject level. Power is the vehicle that shapes students' and teachers' norms and practices. Power is not about someone (such as a teacher) dictating thoughts and acts. Rather, power is continuously being produced and maintained by the subjects who inhabit it (Foucault, 1997). Teaching is a powerful space. It provides a platform for deciphering the norms and values of academia and thus communicates the expectations of how and who to become (Danielsson et al., 2018). Teachers have a central role in recognizing who and what belong within or outside science and thus in shaping students' science identities. Inherent in this recognition lies a risk of pushing students into taking on identities they feel violate their sense of selves in order to gain a sense of belonging in science, or because doing otherwise, they would risk being excluded by or from the teaching-regime (Avraamidou, 2020). However, teaching is just one aspect of science culture. Other aspects tie to the research that forms the basis of teaching and the students' study culture (e.g., Hasse, 2016), and as our data are produced at a research-intensive university, this context set situates our analysis.

Foucault (1997) links power and the ongoing construction of knowledge with social practices, and this means that power is exercised as norms, ideas, or notions of what and who is recognised as legitimately belonging and what and who is not. Both are historically shaped and continuously negotiated in social relations. Thus, science culture entails ideas historically embedded through decades, and this informs what ideal science participation looks like (Carlone, 2004). These ideas, however, are continuously (re)produced and find new ways of exercising themselves in various settings. To examine the ongoing negotiations of what is celebrated and recognised as desirable and what is excluded, we are interested in teachers' and students' narratives about ideal students and how they produce and reproduce meaning as Staunæs (2003) phrases it: "Social categories [such as talent] are tools of selecting and ordering. They are tools of inclusion and exclusion and they are tools

of positioning and making hierarchies" (p. 104). These mechanisms, however, are subtle and therefore researchers must investigate how they are played out in everyday practices and how knowledge and meaning making are produced. We are inspired by Søndergaard (2005) to investigate the negotiation of meaning-making practices by asking "who would talk in what ways about which potential positioning?" (p. 193). Thus, by analysing interviews in line with Søndergaard (2005), our purpose is to explore the patterns in the meaning-making processes.

6.2.2 In- and Ex-clusion Through Available Gendered Subject Positions

Davies and Harré (1990) have theorised how identities are fluently and continuously negotiated through social practices. They provide the tools to investigate how identities can be perceived as a net of subject positions being offered, recognised, obtained, and neglected. Identities are in this understanding more dynamic than describing different sides of a person, offering lenses to see the subtle inclusion and exclusion practices at stake in social practices and who one is allowed to become through the social practices one participates in. This also means that the positions we obtain are not necessarily coherent, as we can be positioned in contradictory ways through different contexts or even within the same interaction entailing different forms of meaning. What is relevant to highlight is thus how different positions allow for different viewpoints and ways of making meaning:

> Recognition of oneself as having the characteristics that locate oneself as a member of various sub classes of dichotomous categories and not of others i.e., the development of a sense of oneself as belonging in the world in certain ways and thus seeing the world from the perspective of one so positioned. This recognition entails an emotional commitment to the category membership and the development of a moral system organised around the belonging (Davies & Harré, 1990, p. 48).

Being recognized as a talented science student thus form an individual's sense of self, while at the same time acts to emphasise a certain set of positions which are available in the particular context of higher education science. Recognition may signal or demonstrate disciplinary norms and may demonstrate power. Here we are not interested in seeing how inclusion and exclusion play out in daily interactions, however. Instead, we explore how they are embedded with the meaning that students and teachers create to justify or explain their engagement with higher education science programmes. We place talent as a social and cultural practice that acts to recognize or reject student positions within science culture at higher education institutions. Thus, the talented student is both produced in and by the cultural-historical setting of higher education, through ongoing acts of recognition, that also works to maintain and solidify an ideal and desirable subject position that students and teachers can see and evaluate themselves and each other through and draw meaning from.

Carlone et al. (2015) argue that a gender perspective is inescapable if we wish to make sense of structure or agency (and everything in between) in settings such as science teaching and learning "where inequities are blindingly pronounced" (p. 474). For example, studies show that schooling teaches students that they are understood through their gender and that their gender means they are expected to behave in certain ways in relation to science (Archer et al., 2012a). One effect is that female students who engage with science are being recognised as performing good student identities while some of the male students are recognised as possessing 'raw' talent (Carlone, 2004).

We are inspired by gender as performed as in line with the widely cited work of Butler (1990). Here the idea of gender as biology and naturally embedded in bodies is abandoned. Butler (1990) proposes an analytic lens to understand the dynamic and continuously communicated expectations that set the scene for how one can perform oneself. Gender is not stable, nor inner characteristics but shaped through the available discourses. This also means that different discourses allow for different opportunities to negotiate gender. This provides the platform to study how gender is dynamic, negotiated yet inescapable as gender is a powerful category dominating western societies (see e.g., Acker, 1990; Ridgeway & Correll, 2004; Rottenberg, 2014).

Consequently, this chapter investigates how meanings of the ideal or talented student are produced and gendered, because in science, ideals most often are (e.g., Keller, 1985; Thomas, 1990). Our aim is on the one side to explore the inclusion and exclusion mechanism entailed in recognition, and on the other to understand the consequences of recognizing, enacting, and producing talent as a gendered subject position.

6.3 Method

6.3.1 Background

The chapter brings together two work packages and datasets produced within the same project with the aim to investigate some of the challenges evoked by the massified higher STEM education. The data was produced at different sites at the same university, and conceptual and analytical work was developed in cooperation. One work package centred around the transition from master's degree program to professional employment and consisted of workshops with master's students, as well as individual and group interviews conducted three times in the transition phase with students at three selected programmes, one at a biomedical study programme which will be central to this chapter. The other work package centred around teachers' meaning-making of talent and was based on individual interviews with teachers of undergraduate science courses. While these informants speak from different subject positions and experiences, we were increasingly struck by the force with which

gender emerged as a common theme in data. We thus decided to use this opportunity to bring the two datasets into dialogue to unfold ideas about talent and gender that appear to pervade higher education science in this context.

In the country where this study was performed it is not a requirement, and only a recent practice, that research involving qualitative research on adult humans using methods such as interviews and participant observation undergoes ethical reviews. This study adheres to common ethical practices, recommendations and norms set by the national Data Protection Agency and social science research council, that mainly requires the researcher to be considerate of the people and groups that are directly and indirectly objects of the research. This is done by informing subjects of the purpose of the research, and by keeping participants anonymous and identifiable information at a minimum.

6.3.2 Study Context

As the context is central when approaching an understanding of science identities, we find it important to share some background of the study. The empirical data is produced at a research-intensive university with over 40,000 students in an urban setting in Scandinavia. All students can access and complete higher education without paying tuition, and they also receive a monthly government grant that cover essentials such as books, food and rent. Students who inform this chapter are at the end of their master's (MS) part of the biomedical programme (BioMed), which has an undergraduate (BS) and a master's part (MS) that qualifies for a Ph.D. programme in BioMed if students secure the necessary funding and/or support from faculty. It is a characteristic of the programme that it emphasises activities that are close to and relevant for biomedical research practices. This research focus is reflected in the teaching, some of which takes place through projects in research laboratories. In practice students seek out research groups to discuss opportunities for doing project work. When good matches and projects are identified, the MS students join the research groups as student members, who work on their MS thesis projects typically under the supervision of a senior and junior member of the group. The thesis-projects are formulated to contribute to the research otherwise carried out in the lab, and interviewees had been told that if everything went well, they should expect to contribute data and co-authorship to a first international peer-reviewed publication before they finish the programme.

In contrast to most other STEM-programmes in the region, admission to BioMed requires one of the highest GPAs of all courses of study. In addition, the university webpage states that three quarters of BioMed students are women. Thus, that the gender composition in this science programme is different from courses of study that have difficulties attracting and retaining women such as physics and computer science. Most students in BioMed continue from the BS programme. It also means that the composition of students in this programme often comprise an unusually large group of women who have earned and are good at earning high grades. A

recurring theme in the dataset is students who appear preoccupied with earning top grades are referred to as “Straight-A girls”. The term is derogatory and reserved for young women who excel at making top grades, who appear to care about their grades, who have developed strategies to maintain high grade point averages. The women are referred to as “Girls” which could work to emphasize that this grade seeking behaviour is immature or not congruent with adult behaviour, or it could work to denigrate the grade and achievement by feminising it. Furthermore, it reserves the category and connotations for women. To our knowledge, there is no similar name for boys or men who care about their grades. One might speculate that they are thought of as talented, nerds or merely ambitious and clever or just schooled.

6.3.3 Interviews with Teachers

This chapter thus draws on two studies. One study, carried out by the second author, investigated teacher practices and teachers’ understandings of what talent in higher education science is, how it is recognized and produced during teaching. The data used in this chapter draws on a larger data-set collected through interviews with four undergraduate science and mathematics teachers, interviews with groups of their students and participant observations during several of the teaching activities associated with their courses. The teachers were asked to participate because they taught courses that are more advanced than the introductory courses but still sequenced somewhat early in the undergraduate program. This choice was made to be able to discuss the types of negotiations of meaning, purpose and values that students depend on when they enter into an academic field, but also to see how these negotiations tied to contents that might have more bearing to the teachers’ thinking on their research disciplines than standard introductions do. Typically, the courses identified as meeting these criteria were offered during the end of the first year to mid-second year of the undergraduate programmes. The teachers were contacted and informed about the purpose of the study, but needed some persuasion to be interested in informing a study about talent. The argument that was persuasive to them was that the investigation would be close to their practice and reflection on teaching, learning and their research disciplines, and would not depart from preconceived, decontextualized ideas about what talent is.

The interviews were conducted as a semi-structured approach with few themes allowing for the teacher to elaborate on questions such as ‘What is a good student to you?’, ‘How do you recognize talent in your teaching?’, ‘What opportunities do you plan for students to show their talents?’ One interview was carried out before teaching started and a follow-up interview was carried out at the end of the course in order to compare and contrast intentions and experiences. Observations of teaching activities and interviews with students provided context for the interviews, but also for shared critical discussion and reflection on what was being said during interviews in a more agonistic or confronting way (e.g., Kvale, 2006). That is, in effect, talent would be investigated as a reflection of their expectations of and experiences

with students during their own teaching – a topic they were all interested in or did not mind discussing. This is important, also for ethical reasons, because higher education in this context is considered a matter of equal access which does conflict somewhat with conversations about elitism and talent. Allowing participants to define talent themselves was key to their willingness to participate. It happened during the interviews that participants asked not to be quoted on specific aspects of their sentiments. However, this never happened when they reflected on how they felt gender being relevant to talent. This means that the teachers unwittingly have added to an analysis they did not expect, anticipate or would have agreed to inform. However, the interviewer never designed the interview to be about gender – this was an aspect that appeared in the co-constructed interview.

In this text we use interview quotes outside of the context they were discussed in, but do so, because these quotes address themes that span all datasets and contexts. Consequently, they should be viewed not as sentiments expressed by particular individuals, but as perspectives produced by a larger system that span disciplinary settings and individuals, and which are produced in an interview-setting that ask about talent and the 'ideal' student.

6.3.4 Workshops and Interviews with Students

The other study, carried out by the first author, explored the transition of MS students from their studies and into their first job. All MS students at the start of their final theses were invited to participate in a workshop. Two two-hour workshops were conducted, where students were engaged in different activities, for example, writing an essay reflecting on their choice of MS programme and thesis topic, and their expectations for the future, or making a portrait of themselves three years hence.

The workshops made it possible to obtain various empirical data and provided insights into the culture of the study programmes. Based on the workshop, seven students were asked to participate in narrative interviews (see Holmegaard, 2020a, b). The first interview was conducted at the beginning of their MS programme, and the final interview was one year after graduation. The students were selected to enable maximum variation of participants (Flyvbjerg, 2011). The interviews centred on the following themes: (1) current interests, challenges, and aspirations; (2) sense of belonging at the study programme and thoughts on student practices; (3) competences they expected to gain from their MS programme; (4) expectations of the future; and (5) interaction with the world outside their studies. The interviews lasted about one hour. All were transcribed. All names in this chapter are anonymized, randomly assigned, and are not reused from previous or in later papers that treat this dataset, meaning that the same students are given different names to prevent recognition. Also, experiences that could be identified were changed so they retain the intended meaning, but obscure possibilities for recognition.

6.3.5 Positionality and Production of Data

The interviewers' own positionality informed a reflexive analysis. The first author is a white woman with working-class background and with an educational background outside science. In particular gender seem to interplay with the participants, who were willing to share both very personal narratives of being sick with stress, and of fearing inadequacy. Not having a background in science allowed for what has been described as the 'naïve' interviewer position, which allows for asking questions to commonalities and allowing for an insider (same race and gender as the participants)/outsider (not from within science) positionality (Adriansen & Madsen, 2009). The second author is a white man of working-class origins with a background in science who could thus to some extent interview white, male scientists from an insider-position. This allowed for in-depth discussion of teaching practices and to probe interviewees' perspectives on learning. However, our positionality also made us blind to white hegemony, and the second author to the more implicit aspects of masculine hegemony left uncontested in the interviews. The result appears to be very open, honest and maybe even revealing interviews. This appearance must not be confused with truthfulness, as our blind-spots might just as well result in a form of co-constructed naivety that shapes how the interview appears. And here lies maybe the most accurate characterisation of the data that is analysed here: it is our co-construction with science students and teachers in higher education, respectively. We could not have created the data without the participants; nor could the participants have created similar data without us to guide discussions, focus, interests, and attention.

6.3.6 Analytic Approach

Through student' and teachers' narratives about performing talent and being talented, our focus in this chapter is on how talent is ascribed meaning. We are interested in the subject positions that are made available and included in the cultural context of higher education science, and the ones that are rejected or not recognized. Based on the transcriptions the empirical material was thematically analysed from an inductive approach jointly by both authors (see Braun & Clarke, 2006). Using our theoretical background as lenses we formulated a set of analytic questions to approach the transcriptions by applying the following analytic questions. Analytic questioning is in line with Søndergaard (2006), questions that act to bridge the aim and theory with a set of supportive questions to approach the analysis:

1. How are ideal students ascribed meaning by teachers?
2. How are ideal students ascribed meaning by students?
3. How do students relate themselves to and position themselves in these meanings (inclusion and exclusion mechanisms at stake)? How are ideal students recognised, enacted and negotiated?

4. And how does it more generally set the scene for the identity negotiations taking place in science?

Based on these questions we constructed themes that were reframed, collapsed and re-categorised. Analysis of the two data sets was carried out treating the sets as a dialectic, moving back and forth between teachers' and students' narratives as described in the introduction to this section. The result is presented in the analysis.

6.4 Theme 1: What Talent Is and Is Not

Theme 1 explores how talent is recognized and enacted as an aspect of positioning and being positioned as a good student. First, the scene is set, and sets of rules for engagement among students are located. Second, the playing field that these students believe they engage with is viewed from the teachers' perspective. Third, a typology comprising two kinds of good student is explored as described by teachers. Only one kind is allowed status as 'talented'.

6.4.1 Complicity in Silencing

From the interviews with BioMed students, it is clear they understand themselves as members of an extremely hardworking group, characteristically comprised of high ability students pursuing a professional future in a field considered up-and-coming in both academia and industry. In the interviews the students explain how throughout their studies they hear teachers express sentiments like: "You are the flower of our country's youth", "You are special students" and "By the end of the programme, 85% of you will enter a Ph.D. programme, but only 20% can get funding from the university." Thus, BioMed students know they need to compete for the attractive positions on offer, and they know that competition is intense, and mutual expectations are high. This discourse dominates how students describe engagement in BioMed studies. Anna explains the possibilities as well as challenges this kind of culture brings:

> It's just really a fiercely competitive environment. Ehm, that, but both for good and bad. I mean, you are pressured to achieve, right? And if sometimes you think 'I don't want to study for tomorrow,' you know there'll be 20 others who did, and then you are like 'You didn't study?! Don't you get your reading done? Are you sick?' 'No, I'll read it for tomorrow then.' It's a fierce, fiercely competitive environment (Anna, student).

This competitive culture produces certain positions for students to take on to gain recognition, through producing oneself as 'engaged'. Above, Anna tells us that you definitely need to be well prepared, but below Cecilie adds how preparation does not necessarily legitimate participation:

> It's this atmosphere, you quickly sense in a course if someone's there who believes they know everything and don't want to listen to people who doesn't know 100% what they ought to know. It gets a bit gloomy sometimes. If teachers ask a question, no one says anything because they sit there, feeling a bit watched over. You don't want to say anything wrong. It's not like anyone is booing. I think, maybe, it's got something to do with, there's really, really many girls, at least in my year, so it kind of turns into infighting and slander (Cecilie, student).

Above, Cecilie describes an atmosphere of gloomy watchfulness. Participation in class requires that you believe in your own abilities and are sure that your inputs are relevant, both by being based on thorough preparation, and on knowing the content absolutely. This on the one hand produces the position of knowing and participating with the risk of being someone who then at the same time 'Don't want to listen to people who doesn't'. But it moreover on the other hand produces the position of not participating and hence not knowing. Silence or being in class without actively participating appears as a viable form of engagement during teaching for students who are not comfortable with participating or who did not prepare sufficiently to feel their voices are legitimate to share. Silencing however holds the consequence of positioning oneself as someone who do not 'Know'. The quote shows how the students govern themselves and each other, producing positions as quiet bystanders to their own education. Power is, as we outlined in the theory, proceeded and excised in daily practices. This is an example of how students govern each other and how competitive behaviour encouraged by the programme shape student-student interactions.

Together these quotes illustrate an unhealthy learning environment, where student learning becomes an individual matter, and where being afraid of making mistakes prevents students from sharing questions, insecurities and challenges. This contradict higher education pedagogy where elements as active participation, student ownership and sharing questions and challenges are pointed out as central in order to achieve learning (Rienecker et al., 2015). While Cecilie explains how the silencing of each other are due to the fact that there are a majority of women at the study program, the literature suggests something else, namely that the competitive study culture can take a form where silencing of each other is the exact purpose. In this case the competition is not only about getting good grades, because this, as shown in the next quote, is considered a precondition. Rather we can understand student participation as a game of outperforming each other so the advantage of some become the disadvantages of others (Becker, 2002). Similar conclusions are reached in settings where women are the minority, here other women can be experienced as a threat because as all are aware that only few will make it all the way (Wright, 2016). As a consequence, not performing in line with these expectations produces insecurities in their own abilities:

> They're all really good and ambitious and you can only tell people what you got if you got an A. Many get an A, but there are also many who don't. Sometimes you can't help thinking 'Gee, everybody's just so smart and good and why do I need to sit and read it three times to understand?' (Katarina, student).

The quote shows how there is a risk of exposing yourself as not being as smart as your peers, but moreover how students' challenges are experienced as a sign of not being as good as the other students. Tina explains how students' insecurities are also reinforced in teaching and how the concept of talent pervades the programme, including teaching:

> I remember these classes when no one could answer. People thought it was hard and someone said like 'But it's super hard, this, we haven't met it before at all and you need to explain it with some other words.' Then I remember that [the teacher said] kind of 'Really? That's unbelievable! Aren't you? Weren't you supposed to be the best in this country? That can't be right' (Tina, student).

Summing up the above quotes, the ideal student at BioMed entails students who are nationally eminent, get top grades, are expected to continue into research, believe in their abilities and always are well-prepared. These expectations are communicated clearly in teaching exemplified in Tina's quote – when students express insecurities and challenges, they risk their eminent positioning. However, the expectations are also produced and maintained in student practices as we have also shown. While the students themselves are complicit in the silencing of their uncertainty and doubts regarding their own abilities, it seems from the quote that the teacher reinforce such notions by silencing the students when finally speaking up. Done intentionally, this would be a vicious and irresponsible move on the teachers' part. However, as we will show in the next section, hearing teachers reflect on the silent high-performing women in their classrooms reveals a much more structurally embedded pattern that draws direct lines to hegemonic masculine beliefs concerning women and academic performance.

6.4.2 Invisibility in Teaching

In interviews with educators who teach undergraduate science, we found it a habitual practice of disassociating talent with high-achievement if it involved women. Instead, their roles in narratives about student behaviour are as unobtrusive, almost diffident bystanders. Below, Tom complains about students' general indolence, that sometimes, and especially during early mornings, manifest in total absence:

> I came in at 8 in the morning. It was pouring outside. The only ones present were female students. I mean, they [i.e., students in general] don't take it seriously, right? And they were supposed to work 20-hours a week on this. And they don't (Tom, teacher).

In this quote, the teacher does not quite ignore the female students. It seems as if their presence in his class emphasizes the absence of the others; those he identifies as his students when he is recounting an experience that is useful for lamenting their lack of engagement. But once the point is made, it seems, the women disappear from his awareness. Below is another example from interviews with Tom that shows this invisibility:

> I almost left Wednesday, that one class. There was simply no response. Almost none. Except from those two girls on first row, and who had been at the study-café to finish everything. But they are typical female students. They aren't the kinds who show off (Tom, teacher).

What the teacher picks up on here, when he discounts the two women on his first row as engaged with typical female student behaviour, may be similar to Cecilie's description of their mutual silencing; but also, a reflection of the expectations revealed by his way of talking about female students. However, the interviews with teachers show that to be recognized as talented it is not sufficient to meet the course requirements. Supposedly, you must be good in a particular kind of way to gain recognition. First, the above quote suggests that you cannot be silent in class. If you are, and you are a woman, you are erased from active awareness. Instead, it is crucial for students to show an ability to move beyond the scope of the course and curriculum to pose questions that might even challenge the teacher, here explained by Henry:

> The straight-A girls, we all have them in our courses and as a teacher it's delightful to have them, because they show up, they've read their stuff, they've done their problems, they only pose relevant questions. Of course, they all get A's. They become tremendously capable – no doubt about it – but it's just, they are not the ones you, like, notice. They aren't extroverted, necessarily. But then, statistically speaking, there are a few boys. They ask questions the first day where you don't know the answer and as a teacher you just go 'Pff, what's happening here?!' (Henry, teacher).

Suggesting that the questions these young men come up with for this teacher to notice them are beyond course and curriculum may be a friendly reading of the interview transcript. Digging deeper, it would be what Lucas (2001) describes as 'effectively maintained inequality'. Even if struggles for resources and privileges are settled, for example, through redistribution, norms shift and goal posts are moved. In the case of educational access "Universality … may be largely irrelevant to the intensity of class conflict, as the focus of conflict may simply change once access is universal" (Lucas, 2001, p. 1680). Put differently: when women start outperforming men, what counts as performance is simply changed – power and knowledge are ongoing produced and find new ways and form. In this case this is an example of masculine hegemony that is recognized and propagated by the male educators and maintained and enacted by the students. Henry, who spoke above, continues in the same breath:

> I mean, it's two different ways to be good at it, and it's just different kinds of jobs they need to be good at, right? I mean, I think you should be aware that now you are choosing teachers to talk to, you probably need to remember that they…what they think is good is a bit like what they themselves aspire to or want to be, right? (Henry, teacher).

Talent, it seems, is a cultural reproduction of masculine dominance in science. Across the interviews with male science teachers of undergraduates, we found similar sentiments regarding good, yet silenced and thus invisible women. Tonso (1998), Faulkner (2007) and Gonsalves (2014) have used the term in/visible as a lens to understand the experiences of women in engineering and science. Tonso (1998) shows how power mechanisms embedded in engineering education act to maintain

the invisibility of women and erase them. Faulkner (2011) recounts: "Even when faced with evidence to the contrary, there can remain lingering doubts about women's ability" (p. 281). There are at least two important points here. One is how teachers across different sciences, whether or not women make up a majority, share similar sentiments that render women invisible with respect to talent. It is the gendered construction of active versus passive; 'natural ability' versus 'plodding diligence' that Archer and Francis (2006) find separates the production of the 'ideal' and the 'pathologized' student. Another point, which is treated in the discussion, is the complicity of the BioMed students in producing their invisibility by silencing each other in the classroom. If students can be good, silent, invisible and erased through gendered practices, it still leaves the question: How does a student position herself to be ascribed as good or talented student and to gain recognition as such? That is the focus of the next section.

6.4.3 Good Students: The Organisers and the Artists

The intention behind interviewing the teachers was to understand how they expected students to perform in order to recognize them as talented. A related aspect was to ask them how this recognition tied to students' ways to participate in their teaching. What came out of these conversations shows what we have categorised as different ways to perform 'good student'.

A teacher, Simon, describes how many young women in his course perform 'good student' identities by being structured, prepared, and delivering perfect results through meticulous work:

> Many of the girls keep from going for the Ph.D. because it overwhelms them. I mean, they become paralyzed with stress because they're so dutiful. But Christ they are a bunch of good girls to bring on a fieldtrip to make databases and such. But they refrain from thinking new and exciting thoughts and from writing papers because they say 'But it stresses me out right away'. But to put in numbers, check them, they look fine and dandy, run the database, go do labs and measure analyses – 200 analyses. And then go home, kick back, my head is empty afterwards. We need that kind. But we also need [the other kind] (Simon, teacher).

Based on this characterisation, the good student performativity is about being well structured and organized. However, students in this category are considered fragile and easily stressed out. They are useful to perform data processing but cannot be relied upon to challenge assumptions or for the daunting tasks of writing up papers which he considers a central trait of the talented, necessary to venture into Ph.D. studies.

The other group characteristically comprises primarily male students. They are described as less organized, they go their own way, even if it might bring on extra work. The aim is to have fun, and the attitude is playful and curious, and contrary to the 'organizers', almost fearless. And often the teachers draw out the best examples from their own past when describing their attributes:

> Back when I was a Ph.D. student, we needed some mathematics that didn't exist. I mean, maybe it did, but I didn't know about it and my advisor definitely didn't. Well, then we had to develop that kind of mathematics. And I'm sure standard text books exists about it, but we hadn't learned it so we just had to develop it now we needed it. You know, that's the way you do real research, often (Henry, teacher).

In the example above the organisers might have searched the literature to find the math needed. It might even have been a shortcut that had allowed the students to spend time on the intended aim. However, this other group of 'good students' make an effort to develop their own solutions, a kind of hard-headed do-it-yourself attitude, engaging in work without being sure that it leads anywhere. This is therefore not the same as Jackson and Nyström's (2015) finding that 'good students' are effortless achievers. In our data, effort is made however not the one outlined in teaching. Rather, it assumes a willingness on the students' part to take risks, to be able to invest time and energy on trying out approaches that do not necessarily lead to solutions. However, taking risks or playing with the content matter, is not a question about engagement as pointed out by the teacher above, it presumes that all students have equal access to sharing their ideas and that these will be recognised for their substance rather than by who shares them. Some students may hold back their views and opinions not due to lack of confidence, but because they have experienced lack of recognition or even that their views have been silenced – this is a gendered pattern (Read et al., 2001). Taking risks includes risking that your voice is not heard, but also it means risking your sense of self. Risk-taking is not an individual endeavour, rather we saw examples in our data of how risk is indeed socially embedded and a practice that is shared amongst peers. Again, a teacher recounts his own past in describing good student practices:

> And thank God they exist, we've got a few of them. In my time we went to a summer-house – red wine on the table, dataloggers and planes and all kinds of stuff and spend the weekend on that. And we enjoyed ourselves. Some of it turned out well. And sure, some of it was a bloody catastrophe and nothing sensible came out of it. But in the long run something did. And that is because we bothered, dared, had opportunities to play. There bloody well needs to be a need for creative play in this life. Like, I mean, otherwise you might as well ask what the hell are artists good for (Simon, teacher).

Both 'organisers' and 'artists' perform good student identities. However, it is clear from the interviews that the teachers experience an asymmetry between the two groups. The preference for structure and efficiency exhibited by the first group are perceived as feminized and superficial. In the interview above we see a mechanism that both rewards this surfaced engagement because it is so effective, but also discourages access to those aspects of doing science that are more open-ended, risky and valued. The masculine performativity of the good student is passionate, engaged, possibly reckless and hence truly talented. In the next section we investigate the consequences of this perspective at the individual level, in part as recounted and recollected by the male science teachers and in part derived from the interviews with women students.

6.5 Theme 2: The Price of Talent

Theme 2 takes up the characterisation of talent from Theme 1 as an inherently masculine performative aspect of the 'good student'. In this theme we will investigate how these meanings of good student practices set the scene for the identity-negotiations played out at subject level amongst students and teachers at higher education science programmes. The theme is ended by exploring the challenges that students who attempt to combine talent and feminine performativity face, when talent as a mechanism for producing inequity favours masculine performativity and renders the feminine good student performativity invisible by dismissing it as insincere or inauthentic.

6.5.1 To Invest the Whole Self to Science

A crosscutting theme in the interviews with the teachers is descriptions about how, in order to become a researcher (which is pointed out by students as the expected aspiration when being a student at BioMed), a student must be willing to devote their whole self to science. One teacher, Henry, explained how he cannot help himself from reading scientific papers while watching movies with his partner: "It has to come naturally because if you feel it as a pressure then it's no good." If you are really passionate about your field of research, the presumption is, that it is almost unavoidable for you to invest the whole of yourself in it. Talent is essentialized. Commitment exists as a natural condition for the talented person, it cannot be developed. A few examples describe this condition, centred around getting absorbed in the content matter in a way that make you forget about time and space. Again, a teacher draws on own experiences to describe what he is looking for in talented student practices:

> I remember my own advisor came in to me. It was Friday and it was seven in the evening and he just had this and this idea, we just needed to calculate and write these codes, just do this and that. Suddenly he realized that I was twenty something and I was going out dancing. Then he said 'No, you don't need to do it now, you'll do it early tomorrow.' He was being serious. In no way a provocation. It was so natural – of course we'll do it Saturday morning, what else would we do? And I think this is what I'm looking for with the students. Those where it comes naturally. Of course, they've got a life on the side, but where they just 'When it's exciting, we'll be here all the time' (Henry, teacher).

Interestingly, Henry allows for the students to have 'a life on the side'; but only when nothing else interesting is going on at work. When looking for talented students in teaching it seems as it is also a matter of the students' willingness to invest all their hours and give the whole self to their studies – for whenever they do not, one may infer, it may be read as an indication they do not find the work sufficiently interesting.

Another sign of talent is to be able to engage to the extent you forget about space and time. In the interviews Henry remembered a particular student he has advised, who he describes as "The best doctoral student ever, *ever* produced in this country." Rhetorically he asks, "What was it, that made us chose him?" and ventures into a story about a trip to a conference and a group of colleagues who went for a walk on the beach. A stone is kicked, it breaks open to reveal a fossil and the group searches for more:

> When two to three hours had passed I looked up and noticed that everyone had gone. The only one I could see was this guy. He was sitting down the beach like some kind of caveman cracking these rocks open. Completely consumed by it and I'm sure the others had left. And I'm sure that if I hadn't brought him along, he'd still be sitting there two hours later. And it's simply that ability he's got. He can be completely consumed by whatever he does and it is this flow. He has that flow and he can get into flow quick and he can just stay there for a long time. It's the exact same thing with science, no matter what he does when he takes something up (Henry, teacher).

Above, Henry describes how he knows that a doctoral student has talent as a way to explain what he looks for when teaching students. Note how the experience is reproduced: Henry discovers his student losing himself to the fossils the same way he did himself. To have talent, good grades are not enough. And if students want to do their MS in his group, he explains how he tests them with an exercise that is almost impossible to solve. What matters is the time and effort they have put into solving it:

> Some of them return four days later and it's obvious from what they've done, that they haven't done anything else and haven't thought about anything else, right. Then you know, now I've got something that is right (Henry, teaching).

But in order to read papers in the evening, and spent all your time and energy another teacher points out that you will need a partner that supports that kind of life. This includes having a partner working part-time who can be the primary caretaker, someone who will not mind being alone during summers for ten years straight because it is when fieldtrips take place. Simon reflects:

> So, there are some fierce consequences you must make sure that you've, or else it'll cost a divorce. We see this. Riiight, so then they switch to a newer wife. It's usually the men who switch. It's rarely the girls who switch to a younger man. Instead they leave. Or become single (Simon, teaching).

The system works when (heterosexual) men find new younger partners as years go by and women become single if they want to keep up the 'good work'. The system is not questioned – rather it is something you are urged to submit yourself to. However, the students in BioMed have been brought up as women with what Rottenberg (2014) would characterize as neoliberal feminism, and face quandaries about how they balance demands across their spheres of life.

6.5.2 Balancing Different Life-Spheres

Rottenberg (2014) describes how the neoliberal "Feminist subject accepts full responsibility for her own well-being and self-care … crafted on felicitous work-family balance based on a cost-benefit calculus" (p. 1). Similarly, a general concern expressed by the students in BioMed is how they feel the study programme may absorb all their time and energy. Thus, as a self-care measure it is important for them to find time for sports and leisure such as dancing, drawing, cooking, and being with friends and partners. Still, there is a sense of that studies invade all their spheres of life. Here Sandra recounts:

> I guess it's okay if there's something you absolutely need to come in and do in the weekend, but I don't think it should be the norm that I need to work every day. I want my weekend, and I also want to be in time to shop for groceries. If I'm off at eight every day I won't have time to prepare dinner. Stuff like that. I like drawing. I'd like to have time for that (Sandra, student).

As a student who is also associated with a lab, Sandra reacts to perceived expectations that she works evenings and weekends. She has discussed these expectations with friends in similar situations:

> I've got this impression that many, also my friends and so, they've experienced the same pressure that, well 'I can't go now even if I'm practically done so now, I have to sit here and just pretend I'm doing something because obviously I can't leave at three' (Sandra, student).

It seems that this high-workload environment is sometimes just pretending, or alternatively, very difficult to gauge and find ways to legitimately participate in. Still, the environment is invasive of what is Sandra perceives as rightly earned free-time. Even after having finished work students like Sandra still feel that they are expected to stay in order to position themselves as engaged. In the previous section Henry, a male teacher, reflected that one is allowed to have "A life on the side" as long as nothing interesting is going on at work. Clearly these women are not in a position that allows them to know whether what is going on in the lab is considered sufficiently interesting to merit the invasion of their leisure time. Instead, they feel forced to stay at their bench till someone else signals it is time to leave. They can do this for a while, but are increasingly concerned for how their future life will be shaped by this trajectory:

> I'd like a Ph.D. where I can be ambitious because I think, right now there is no partner, husband or children, so in no way, I mean, all-in on science. But after that I'd like to have a family at some point and then I'd like to have an option for a job where, it's just a job and not a life's work or anything (Maria, student).

In the quote, Maria describes how forming a family eventually will have consequences for her possibility to position herself as engaged. The students have definitely picked up on the masculine sentiment on ambition and engagement and they feel the pressure to submit themselves to spending all their time on a career that can be prioritized only until other priorities take over. Life in science cannot be combined with other aspects of womanhood. Thus, a Ph.D. is perceived as a means to a

safe well-paid job in the industry, as the drawing below illustrates. It is titled 'Where I am in 3 years' and was made by one of the students during an interview (Fig. 6.1).

The strong emphasis that the BioMed students put into balancing life in science with other aspects of life is in line with are a range of studies showing how non-traditional students, such as women in science, face a cultural gap between academia and their values. The feeling of alienation and of being required to distance oneself from the values of academia is particularly salient in studies of working-class students (Bryan & Simmons, 2009). For some, this means balancing multiple identities. Moreover, studies focusing on underrepresented ethnic minorities in higher education show how some students are required to establish a sense of bi-culturalism in order to gain membership in the predominately white higher education setting (Rodgers & Summers, 2008, p. 183). Thus, academic success is contingent on students' abilities to break with non-academic backgrounds, practices, and home communities (Reay et al., 2010, p. 121). These researchers argue that instead, students can be supported in their identity work affiliated with negotiating different social contexts but conclude that continued racialised and classed inequalities means for "The very few working-class students who make it' that they risk ending up with what will later turn out to be a 'devalued degree'" (Reay et al., 2010, p. 121). To render science education equitable, it is necessary to consider

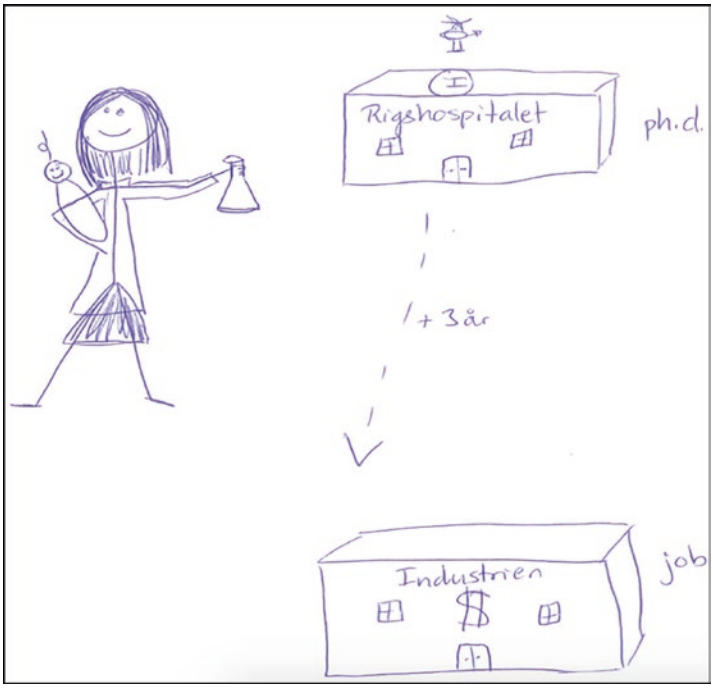

Fig. 6.1 Where I am in 3 years: Illustration by student drawn during interview. (*Note.* Ph.D. building says 'National Hospital'; Job building says 'Industry')

fundamental changes to pedagogy, changes that aim to go beyond standard inclusive practices, to instead introduce and use critical perspectives on the science that is taught (e.g., Mansour 2020; Mensah & Jackson 2018).

In our case, the sense of bi-culturalism has to do with performing successful student identity and talent in a way that is essentially masculine, white and middle-class on the one hand, but in opposition to, unaligned with other identities that are expected outside university. When female students attempt to combine these identities, they are interpreted as inauthentic or insincere in their commitment to science. The result is that the feminine identity of the 'good student' leaves the individual struggling to position themself as intelligibly authentic science learners within the dominant discourse of science. This is a challenge for the female informants. They describe their engagement as a materially limited supply – if you use it all while studying, there is nothing left for family and other interests. None of the narratives pointed out life outside university as a resource the students could draw on within academia. This is essentially an untenable situation for the women, whereas men can and do derive status from being able to prioritize work over family – even, or maybe especially, when signs point to health hazards. It is a perspective that teachers use to inform their pedagogy, and it in turn feeds into the mechanisms that ensures that the sciences are restricted to "all but a privileged few" (Archer et al., 2020, p. 373).

6.5.3 The Production of Stressed Students

The teachers also describe stress in their work life, but contrary to the students, they seem to perceive this as a condition for their work. Simon recounts his experience realizing that he had developed stress-induced migraines:

> Suddenly I saw a spot, a grey spot that just popped up. So now I had to go to the doctor. 'You are stressed,' she said. 'You need to cut down and that's got to be now! Otherwise, you'll risk losing your sight'. Management said, 'Oh well, we've just been waiting for you to come and ask to reduce your hours, because you've got far too much to do here'. Afterwards, I've been talking to some of the old geezers at the other departments and they are like 'We've got colleagues who've experienced the same,' simply had the same problems with their eyes, and they continue on and on and on and on and suddenly they get retinal migraines. That's something you must beware of. That it's a sign of stress. I just thought I'd been looking at a screen too long or something (Simon, teacher).

Interestingly, he describes this physical reaction as the first indication ever, that his engagement with work is excessive. However, colleagues and management alike, seems aware that the phenomenon exists why this pretence of disinterestedness with one's health could be considered another masculine performativity associated with science in general and 'talent' in particular. Being engaged with science has since ancient Greek philosophy been perceived as a matter of the mind, articulated as something detached from and superior to the body. Mind in opposition to body has been associated with rationality, intellect and masculinity, and femininity with body,

emotions, and irrationality (Allegrini, 2015). Henry describes how his work "Doesn't cost blood, but surely sweat and surely tears". While it might be true that working with this teacher does not actually draw blood, figuratively speaking however, it might. In our data stress and consequences were articulated by teachers and students alike. But where the teachers as Simon seem to suppress the stress-signals, these are perceived different by the students. A student, Maya, describes how she has developed strategies for avoiding research environments that are too ambitious to allow for its members to take care of their mental health:

> I've seen people in this programme who just break along the way because they were at a place that was extremely ambitious. So, I think it's important not to just go for the most ambitious you can find but something that suits you. If you are the type who just loves to be there around the clock, then okay. I've met them, but they are few, I think. Before I started, I also thought it was important to choose something where you were sure to have something published. But my experience is perhaps more that what's important, is to find something you are comfortable with. I know there are places that are very ambitious. I keep far away from those places (Maya, student).

Maya's reasoning is a perfect example of resistance to submitting herself to an ambitious environment, where breaking down seem to be unavoidable. Maya is fully aware of her own well-being, and that some people may thrive working in such an environment – but that they are not for someone like her. In the quote she articulates how she is sensitive to masculine norms regarding talent, but how getting into such an environment would require her to compromise her own sense of self. This is why she refrains from following the path. This is in line with Holmegaard (2020b) who illustrates how exclusion mechanisms work on subject level when potential future challenges are imagined and coped with in present time. While some male students tended to think of potential future challenges as something they would deal with in the future, female students did not perceive having as much agency in their future, so they felt a need to avoid potential challenges rather than planning to deal with them. Maya's present resistance prevents her from pursuing prestigious research environments, and at the same time support the idea of female students as not interested in following such career tracks as her strategy is to avoid. Simon described the costs of being part of such environments by risking his health, and while he succeeded in entering the elitist culture, his strategy of avoiding rather than challenging the discourse is similar.

6.6 Discussion

With higher education moving from being exclusively for the elite to admitting the majority of a youth cohort as is the case in this study, a discussion on how the educational system can identify talented students has emerged. In this chapter we have investigated how teachers and students respectively ascribe meaning to what talent is and who talented students are in the cultural setting of higher education science. By applying science identity to investigate the notion of talent, we aim to examine

values that feed into inequitable practices and produce some positions as desirable or as unattainable because they imply certain privilege. In particular, our aim was to explore the gendered inclusion and exclusion mechanisms that determines what and who were recognised in science, and to understand which positions were made available (and which were not) and the consequences of these recognition-practices as played out on subject level. To do so, we analysed two datasets produced in distinct work packages within the same project. One dataset drew on workshops and interviews with female MS students in a biomedical study programme that requires top GPA and is majority women. The other dataset was based on interviews with men who teach undergraduate science. A joint thematic analysis was carried out by both authors.

Theoretically, we approach talent as a social and cultural practice that is enacted everyday practices. We are interested in how students and teachers produce norms and ideas about what talent is and who it is for, which gendered consequences these ideas produce and how female students who are positioned as talented recognise and negotiate these positions. We conceptualise science identities as a net of subject positions being offered, obtained, and neglected, which also work to maintain and solidify talent as a subject position that students and teachers can see and evaluate themselves and each other through and draw meaning from.

The analysis showed how students from BioMed were competing against each other. They explained how early on in their studies they were positioned as a special group, the national best and thus natural aspirants to the limited number of Ph.D. positions in prestigious research environments. This competitive culture produced narrow positions for students to take on to obtain recognition as 'engaged'. Participation in class required students to position themselves as well prepared, knowing the content matter, and totally believing in own abilities. As a result, the competitive environment produced a study culture where students governed themselves and each other and practiced a silencing of their own uncertainties and doubts by engaging passively and refrained from risking exposing themselves and potentially their lack of abilities.

The teachers in the study shared a perspective of talent as involving a willingness to take risks, to be able to invest time and energy without having a sense of what and where you are going or what may happen, because interest and fascination are intrinsic rewards. At the same time, talented students were expected to hold confidence in own abilities, and they were recognised in class by posing questions beyond course aim. Rather, students were expected to perform engagement that was rooted in a pure interest in the subject matter rather than being instrumental.

These practices of both students and teachers help maintain what is pointed to in the literature as the invisibility of women in STEM (e.g., Faulkner, 2007; Gonsalves, 2014; Tonso, 1998), as the ideals require certain levels of preestablished privileges. In our analysis, talent appeared to be associated closely with hegemonic masculine ideals of being active and taking risks which inherent the idea that all students have equally access to speaking their mind and gaining recognition for substance rather than by who shares them. Female students engaging in silence literally rendered the physical presence of the female body invisible to the teacher.

Moreover, the analysis showed how students and teachers seem stuck in a framing of talent that produces highly stressful and unhealthy study and work environments. To be recognized as talented during teaching, students were presumed to desirably invest their whole self and time in science. Teachers frame this way of engagement as a natural desire that students must feel the need to free, while inescapably reducing their lives outside university as less important. The female students resisted taking up this identity, as they experienced lack of coherence between their sense of self, and the expected science identities available in higher education. In more general terms, experiences with prestigious research laboratories taught the students that aspiring towards a celebrated career in research risked that their hard work would go unnoticed or that they would be met with scepticism if they were not willing to invest everything. From the interviews with the four teachers who were asked to relay their perception of talent based on their experience teaching science students, we understand that prioritizing life outside university and working conditions over science must result in being met with deep suspicion from established scientists like themselves. It suggests that femininely performed identities, within or outside of science, will never be associated with scientific talent.

Our study shows how higher education science continuously find new ways to keep and reproduce inequities in everyday practices (Lucas, 2001) by pretending to reward students who are talented. Talent work as a mechanism to position some students as naturally right no matter their grade-performance, but solely based on their ability to perform science identities that resonate with those of their teachers. It is time to stop talking about talent in science as anything but dangerous and harmful hegemonic masculinity and sexism shrouded by myths of meritocracy because it reproduces the narrative of the privileged white male, coming-of-age academic science-experience romance.

The analysis is notable in several ways. First of all, the lack of coherence between the students' identities is similar to what is found in studies of minoritized students in higher education (e.g., Rodgers & Summers, 2008). However, in this case the female students are the majority group – but still, they are kept from taking up dominant positions. This highlights the fact, that even if more women enter science, they are still required to submit themselves to masculine ideals and rules for doing science (as it has always been done), leaving limited space to negotiate identities and position oneself for recognition. Secondly, the ideas of investing your whole self in science is in line with what Rose (1998) explained as the expectation that modern individuals manage and invest themselves to maximize quality of life, which Rottenberg (2014) identifies as prime-motives driving neoliberal feminism. Explanations for why women are not present in research careers often points to priorities concerning reproduction and family-life. However, as Doerr (2021) argues with their study of scientists stuck in eternal temporary teaching positions, these explanations, tied in with meritocratic logic "Act as a guise to perpetuate inequity and maintain glass ceilings" and produce women as second-class academics who can be "Denied or deprived of basic elements integral to academic labor such as … appropriate pay and credit for intellectual property, recognition for teaching, a fundamental mission of the university, and normative respect needed to operate in civil

society" (pp. 125–127). This bears repetition: women must be a fundamental mission of the university (as men and their work have always been), if we want to ensure them just conditions for doing academic labour – that is to say, taking up identities as scientists inside the university setting.

Changing culture is never easy. It is necessary to include *people* as a mission of the university and consequently also research science. This requires management support, teacher training and the willingness to actually not only admit a diverse student body to university, but also to support different ways of doing and being a student and doing and being within science. Thus, it is necessary to continue this line of research into how notions of science talent (or ideal student, effortless achiever, natural ability, genius and other myths or normative positions emphasising desirable science identities) produce women (and other nondominant groups) as 'second-class', 'unnatural', and 'inauthentic' practitioners of science. Here, critical ethnographies, for example, using participant observation or other immersive methodologies that allow a focus at the inter-personal and institutional level on interaction during the initiation and implementation of, for example, talent-initiatives should be of special interest. Such studies could wisely be accompanied and contrasted with a similar focus on anti-essentialist and gender-inclusive science initiatives (e.g., Hughes, 2001). Besides aiding equitable development of higher education, studies and actions are needed that will help policy-makers and teachers understand how and why *talent* is yet another way to advance white male middle-class at the expense of *the other*. Such understanding may also aid equity work in schools to make science identities more readily available to people of all ages.

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