



Social dimensions of learning – the experience of young adult students with Asperger syndrome at a supported IT education

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ABSTRACT

The purpose of this paper is to describe how young adults with Asperger syndrome experience an educational project called 'the IT-track'. The methods used included participant observation and research interviews. The results were interpreted within the theoretical framework described by 'Supported Education' (SED). The most prominent experience among the students was social learning. Students describe that they gradually began to function better socially with others and developed various abilities, such as asking for help, and talking to groups. The teachers emerged in the interviews as the single most important source of support as they formed the basis of two key points of SED. Overall, studying at the IT-track resulted in the students extending their horizons of possibility by breaking away from their previous sense of isolation which was marked by idleness and loneliness. By participating at the IT-track, the students' sense of participation and meaningfulness increased.

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Introduction

A large proportion of young people diagnosed with Asperger syndrome experience difficulties in coping with their education because of their special need for structured and clear customized training (Simmeborn Fleischer 2012). Their behaviour often results in their exclusion from certain classroom activities, something which becomes more and more apparent with age (Attwood 2000; Jackson 2011). Vinnerljung, Berlin, and Hjern (2010) show that in Sweden, low grades in the ninth grade is *the* factor that most strongly correlates with unemployment, mental illness, substance abuse, self-injury, and crime in later life. They found, for instance, that it is 8–10 times more common for students in general to be involved in criminal activities for those with low grades compared to those with medium or high grades. In a parliamentary social security inquiry (Official Reports of the Swedish Government 2015), it was noted that young people who have no high school education are overrepresented in unemployment figures, and that people who suffer from mental illness are also overrepresented in this group. In addition to the stigma that social exclusion imposes on the individual, Nilsson and Wadeskog (2012) estimate the lifetime cost for each young person who is socially excluded is between 11 and 14 million SEK. Psychological research indicates that people usually seek out activities where they believe that they will succeed (and have prior experience of success). Students who have experienced school failure have a psychological reluctance towards seeking out and engaging in an activity where there is a perceived risk of failure (Bandura 1982; Cron et al. 2005). Thus, students need to feel that their studies are meaningful, understand the goal of their studies and be able to cope with the educational challenges that they face. This requires adapted teaching and effective support, in order

to prevent new failures, to build trust, and to strengthen the students' confidence in their studies (Hugo 2007, 2013). The lack of research into Asperger syndrome and education highlights the need for a better understanding of how environments can be adapted in order to be supporting and contribute to learning. Simmeborn Fleischer (2012), Giarelli and Fisher (2013), Börnfelt (2014), and Adolfsson and Simmeborn Fleischer (2013) argue that conditions for informal learning should be created alongside the formal learning that takes place where the focus is on the educational content. This informal learning is the goal of 'Supported Education' (SED) (Waghorn et al. 2004; Bengs, Borg, and Liljeholm 2013), which is aimed at increasing the self-esteem of the students. Supported education aims at contributing with ongoing and regular support in the education environment in order to increase the possibilities for the students to be successful in their studies (Unger 1989). In previous research, supported education has proved to be successful in terms of leading to positive outcomes regarding increase of the self-esteem of the students (Unger et al. 1991), student satisfaction (Anthony and Unger 1991) and increased school results (Mowbray 2000). To achieve increased self-esteem and student satisfaction, teachers need to require a knowledge of, that in spite of a shared diagnoses, the students have different support needs (Simmeborn Fleischer 2013). This requires a realization that general support can affect individuals differently, thereby prompting a need for continuous modification of such support. The fundamental idea behind SED (Unger 1989; Anthony and Unger 1991) is that rehabilitation is an integral part of education. Waghorn et al. (2004) found the following 10 points as the hallmark of a well-functioning SED environment:

- (1) Collaboration between education organizations, mental healthcare services, social insurance, employment centres, and other organizations that support the target audience.
- (2) Education support provided by specially trained SED staff.
- (3) Access to educational and vocational guidance.
- (4) Economic advice.
- (5) Support of the development of skills that can be used to deal with the new school environment, such as stress management, time management, and study skills.
- (6) Information from the school about students' rights and resources.
- (7) Personal support and mentoring at school functions or external events.
- (8) Help in getting access to courses, and assistance with education.
- (9) Access to tutoring, library support, and other training support.
- (10) Access to general support, preferably outside the training institution, to manage life situations which may affect the implementation of the programme.

The notion of 'rehabilitation' in this context is well-researched and studies show increased self-esteem and better academic performance as a result of the study environment being characterized by and organized in accordance with the 10 points listed above (Stoneman and Lysaght 2010; Kidd et al. 2012, 2014; Manthey, Goscha, and Rapp 2015). However, it is not only the support that is provided to the students that needs to be in focus and undergo continuous modification. In an evaluation of a similar project in Denmark (AspIT) (The Danish Evaluation Institute 2010), the need to adjust and update (i) the set-up of the course, (ii) procedures for the dissemination of knowledge, and (iii) strategies for the teachers' professional development was identified. In summary, the IT-track faces several challenges. It requires a well-planned, flexible organizational structure, so that student and staff needs can be met properly. Contacts with the labour market also have to be developed. The purpose of this paper is to describe how young adults with Asperger syndrome experience the IT-track. Specifically, the paper highlights the teaching-related and interpersonal support functions that exist within the project, and draws attention to the students' visions of the future. These observations are analysed with reference to the 10 points mentioned above that characterize SED.

The IT-track

The IT-track is an educational project founded by The European Social Fund, Region Jönköping, Höglandet's Coordinating Association and Eksjö Municipality and began in January 2012. It was aimed at young people with Asperger syndrome between 19 and 30 years old. The diagnostic label Asperger syndrome no longer exists and has been incorporated in the wider diagnostic label autism spectrum disorders (McPartland and Volkmar 2012). However, the IT-track started before these changes were made and moreover, the students themselves and the staff at the IT-track still use the old label Asperger syndrome. Therefore, we choose to use the same label. In addition to the Asperger diagnosis, nine of the students also have other diagnoses, such as schizophrenia, obsessive-compulsive disorder, and bipolar disorder.

The project accommodates 15 students and comprises upper secondary and university courses in programming, CAD and systems, as well as an internship experience. The desire to start an IT education for people with Asperger syndrome stems from the initiator's experiences of working within social care, where many young people with Asperger syndrome unfortunately end up. Moreover, the level of interest among young people with Asperger syndrome in IT is high (Silver and Oakes 2001). There is also a need for people who hold post-secondary qualifications within the field of IT (Employment Service 2015).

The aim of the IT-track is to enable students to break from their isolation, and to go from being inactive to being gainfully employed on the basis of their competence and ability. The IT-track offers students a private entrance to the school building, specially adapted premises, small study groups, individual study plans, individually paced study progress, few teachers, access to an occupational therapist, and educational training Monday to Friday between 12.00 and 16.00. The teaching arrangements at the IT-track are clear and structured, with the same format each week. There are two parallel courses, an upper secondary school course and a university course. The lectures for the upper secondary school course begin at 12.00 on Mondays, Tuesdays, and Wednesdays. The lectures for the university course begin at 12.00 on Thursdays and/or Fridays. The lectures are 25–50 minutes long and are always linked to laboratory work that is based on the content of the lectures. Educational films are also used in some of the courses, as a complement to the lectures. During the daytime, a teacher is always available if a student needs help with their work or for an individual review of lecture elements that they may have missed. Parallel to this, some of the students are engaged in internship work. The student group consists of 14 male students and 1 female student. The personnel group consists of a head teacher (full-time), a university teacher (part-time, 26 hours per month), and an occupational therapist/coordinator. The head teacher and occupational therapist/coordinator are responsible for the IT-track's external relations; the former in terms of establishing and maintaining business contacts, and the latter in relation to various authorities. Table 1 gives a brief overview of the students and their experiences in order to enable a broader understanding of them. However, the information given in the table will neither be further discussed nor be contrasted against the findings. The ambition with the table is to increase the reading of the result section.

Methodology

The study is inspired by an ethnographic methodology (Hammersley and Atkinson 2007), where researchers reside within the environments and situations they want to learn about. According to Hammersley and Atkinson, the actions of individuals can only be understood from within the context that they are situated. By taking part in the practice, observing what happens, listening to what is said, and by asking questions, the researcher can come to an understanding of the participants' experiences and the learning that takes place in this context. The context of the present study is limited to the delivery of the IT-track in the autumn of 2014, and is focused on (i) the students' experiences of the IT-track, (ii) the students' previous school experiences, and (iii) how they relate to their future.

Table 1. Overview of student characteristics.

Respondents	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Age	26	27	25	26	29	27	29	26	25	22	22	30	21	30
Age receiving AS-diagnosis	14	?	10	24	5	24	29	24	18	18	22	29	19	23
Other diagnosis	Y	Y	N	N	N	Y	N	Y	Y	Y	Y	N	Y	Y
Bullied in school	Y	Y	N	N	N	Y	N	Y	N	N	N	N	Y	N
Placed in special school	Y	N	N	N	Y	N	N	N	N	N	N	N	N	N
Attended the IT-track	2012	2012	2013	2013	2014	2012	2014	2014	2014	2013	2014	2013	2014	2013
Attends upper secondary school courses	Y	Y	Y	Y	Y	Y	N	N	Y	Y	Y	Y	Y	Y
Attends university courses	N	Y	Y	Y	Y	Y	N	N	Y	Y	Y	Y	N	Y
Passed upper secondary school courses	Y	N	Y	Y	Y	Y	N	N	Y	Y	Y	Y	Y	Y
Passed university courses	N	N	Y	Y	Y	N	N	N	N	Y	Y	Y	N	Y
The teachers are the most important support function	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Needs outside support	Y	Y	N	Y	Y	N	Y	Y	Y	N	N	Y	Y	N
Needs support from Physical therapist/coordinator	Y	Y	N	N	Y	Y	Y	N	N	N	N	Y	N	N

Data collection

Data were collected by way of participant observations and natural conversations (Van Manen 1990) at the IT-track over 7 full days, and during 14 research interviews. The different data collection methods complemented each other and, taken together, provide a rich description of the students' experiences of the IT-track. The participant observation and natural conversations were conducted by the two researchers together in the autumn of 2014. During the observation period, the experiences of the respondents were shared with the researchers during actual learning situations. Van Manen (1990) describes this approach as *close observation*, in which the researchers bridge the distance between researcher and participant(s) by entering the lifeworld of the participant(s).

Research interviews were also conducted with students. Fourteen of the 15 students who were enrolled in the project during the autumn of 2014 took part in interviews that lasted between 20 and 60 minutes. Thirteen of the interviews were recorded and transcribed, while notes were taken during one of the interviews. The research interviews were semi-structured lifeworld interviews (Lantz 1993; Kvale and Brinkmann 2009). An interview guide with seven open-ended questions was used together with possible follow-up questions. Notwithstanding this, the interviews were open, since the respondents' answers influenced the direction that the interviews took (Hammersley and Atkinson 2007). The authors translated the transcripts from Swedish to English and a translator then checked the accuracy of the translation.

Interpretation of the data

The data are rich and distinctive since information can be found on two different levels. The first level relates to the researcher who experienced, interpreted, and documented what took place at the IT-track. The second level relates to participants themselves who described their experience in their own words, the content of which is later interpreted by the researcher. This combination of two levels of data is valuable in order to enable authentic interpretation of the students' experiences (see Hugo 2007, 2013; Hedegaard et al. 2014; Hedegaard, Rovio-Johansson, and Siouta 2014).

The result of the study is empirically close. With the help of many citations that express the students own words, our intention is to provide a rich description of the students' experience of the IT-track. As we interpret the field notes made during the observations and interviews, we describe what emerges in the collected data material. According to Kvale and Brinkmann (2009), it is of importance that we describe what is happening as accurately and completely as possible. Bengtsson (2005) argues that the empirical material should be expressed in its own terms, within the framework of the question that it is being answered.

A continuous hermeneutic interpretation (Van Manen 1990) of the observations and interviews took place during the autumn, both during the actual data collection process and during the processing and analysis of the collected material. First, we analysed the data separately and searched for overall themes that could represent the content. Thereafter we compared and contrasted the respective themes in order to find the most distinguishing themes. The purpose of our interpretation of the empirical data is to produce a close description (Bengtsson 2005) and come to an understanding of the students' experiences at the IT-track.

Ethical considerations

All of the participants were informed about the purpose of the study and gave their consent to be included in the study. Participants also provided written approval for the use of the empirical data in future publications. The respondents' right to privacy meant that they were treated and described confidentially. It is, however, not possible to fully avoid the possibility that people in such a distinct group might be able to identify each other. In summary, in the observations and interviews with

students and staff, we have followed the ethical requirements of the Humanities and Social Sciences (Swedish Research Council 2002, 2005).

Results

This section is composed of the intertwined findings from the participant observations and the 14 research interviews. The results consist of two overarching areas – *student learning* and *extended horizons of possibility* – and each of these areas contain three sub-areas.

Student learning

During the interviews, we asked all of the students what they had learned at the IT-track. Thirteen of the students told us that they had learned specific skills in IT that were related to the content of their courses; however, 12 of the students told us about other things they had learned that were related to different aspects of working socially with others and functioning in everyday life. During the interviews, the following aspects of student learning were revealed.

- The content of the courses.
- To function better socially with others.
- To get structure in everyday life.

The content of the courses

Students informed us with pride about what they had learned in different courses. Many of their descriptions referred to the practical applications and concrete skills they had learned. All of the students except one said that they had completed most or all of the upper secondary school courses that they had studied. Since the students on the IT-track had been in training for different amounts of time, the number of courses they had taken, and also the order in which they took them, varied. Ten of the 14 students stated that they had taken university courses, but only 7 reported that they have passed them. Four of the seven students who had passed them reported that these were the only courses that provided challenges to their learning, and that they really just wanted to read university courses. Three of the students who started at the IT-track in 2014 said that after half a year they had already finished six courses or even more, and they talked enthusiastically about how much they had learned:

I've learned a lot about basic computers and systems and stuff. I knew nothing about making websites because I only played ... before. But now, I can make a very simple website and CAD, I've learned that. (S9)

I've learned a CAD, web programming and to make websites ... and regular programming. Now it's database technology [...] The hardest part is the programming. It's like learning a new language ... because you've learn the relationship between the various words. It's basically telling the computer what to do. So you have to tell it properly ... without making grammatical or whatever you call it. (S5)

Prominent in the students' descriptions of what they learned at the IT-track is a perceived skill of being able to do something concrete within IT that they could not do before. Here are some examples of such skills:

The most important thing I learned is network technology. You'll learn exactly how the network is. And then it's programming. I've run own projects too. I built a little robot and programmed it could run with sensor and avoid stuff [...] I like databases much ... it's something I'd like to work with. I did not know that before ... but I've discovered that I really like it. I want to run databases ... deal with that stuff. Upload. Design [...] I've driven network administration and database administration and database technology ... so I've driven network technology and object-oriented programming. (S3)

To function better socially with others

The students described a variety of aspects of their learning that relate to functioning better with others; a form of social learning. In the interviews, the teachers were described as the most important support function. Prominent in these reports was the experience of trust, and of being seen, acknowledged, and treated with respect for who they are. One of the students said: 'When you came here, it was great because they know exactly how they'll handle us and they're good people' (S9). Another student reported: 'I've been treated better here than I've ever been in any other place' (S11). Students tell us that the teachers' attitude makes them feel calm and welcome:

He gets me feeling serene here. He gets me feeling calm. And he gets me to feel welcome [...] it's thanks to that he's there and he's himself and he's as calm as possible. You get, when you're near him, calm energy and then you feel calm ... it's probably the greatest support he has given me. (S1)

He's the best teacher ever for Asperger's ... people with Asperger ... for he's himself [...] He's the best thing that can happen to anyone [...] you feel calm ... you feel calm and you feel that hell, he's funny, we can listen to him. We can actually learn something. (S2)

All the students also reported that they felt comfortable with their classmates on the IT-track. But feeling comfortable with their classmates did not entail that they talked to each other or are interested in others. Twelve of the students preferred to be alone and work by themselves and four of them did not even know the names of their classmates. Eight of the students told us that they are not interested in spending time with the others, but at the same time, they feel that they get along very well and feel respected by their classmates.

If I'll be honest, I've hardly spoken to that many. Well I'm not very social ... but when you meet others when you sit in a room like this, it's very good I think ... when we sit in our cubicles, there is no problem either. (S8)

I've not talked to many of my classmates so I don't remember any names (laughter). But the ones I've talked to have been very nice. (S13)

I work mostly by myself. I know they usually go out and drink coffee and stuff ... I'm not the person who is interested in that stuff. I'm very individual. I come here for the work's sake ... then I go for the job. I'm not a social person. I socialize, but have difficulties in crowds. (S3)

Notwithstanding the previous remarks, eight of the students reported that, when the IT-track started, they became more interested in socializing with others. Three of the students reported that they lived together in an apartment, and enjoyed that.

It has also given a lot socially [...] in a regular school that I went to before, it was marked that I was special ... I don't connect with the people. But since we've come to this school aware that people do not connect ... then we've not had any panic regarding socializing. We were three that lived together ... I still live with one from this school, and then I'm dating one of the others. It works great ... it's things like that you don't think should work, because you have Asperger and know what limitations you have. But since it has become a more humble social constellation, it's much easier to not feel any social pressure. (S1)

S1 describes this interest in socializing with each other as the most important learning experience while being at the IT-track. S1 explains that one of the teacher's attitude, interest in, and commitment to the students has resulted in the students themselves developing a greater empathy for each other. They had even built up their own social safety net:

Teaching is such a small part of what the teachers are doing. But above all, it has affected the way we look at people and how we see ourselves and the teachers have done more on that than teaching [...] The fact that he's prepared to go so far for us has affected how far we are prepared to go for each other. We had a guy who was about to kill himself last year ... and then ... we do have some small groups that keep tabs on each other ... we are four people who have keys to each other [...] It's one of the major important stuff that he (the teacher) has helped with. Before, we always thought: I can do better by myself. (S1)

Seven of the students also said that they meet regularly in a gaming association during their leisure time. For four of the students, this was the first time in many years that they had enjoyed regular social interaction:

When I started this, I didn't even wanted to talk [...] I've socialized a little bit now ... played together and so ... card game actually. He (one of the students) is the gaming organizer here downtown ... so I've been there. (S11)

I'm fine with them ... some of them ... we have a gaming association downtown. Down there at the grill. [...] card games, board games, role playing ... a bit of everything. (S6)

Some other social skills that the students told us that they had learned was asking for help, talking to groups, and structuring their everyday life. Eight of the students reported that, during their time on the IT-track, they had learned to ask others for help. They stated that, previously, they never asked teachers nor classmates for help. Strikingly, they reported that they had learned to ask their classmates for help at the IT-track. Six of the students also said that they had learned to work together in solving tasks:

There're many that I don't talk to ... not without reason ... but there're two or so I hang out a lot with outside of school ... what I like here is if you have some problems with anything and you don't really know how to solve it ... then ask someone else who's in the same course ... then you start to think together about how to solve the problem ... I think it's important to be able to do so because it's how to do it out in the workplace [...] To dare asking for help is a good thing to be able to [...] Together we're good at everything ... (S12)

The fear of speaking in front of groups was a significant challenge for 12 of the students at the IT-track. Five of the students said that they had learned to dare to talk to others in the IT-track, even in class, when between 5 and 10 other students were present:

It's something I also learned ... talking to the group ... I couldn't before because it was really tough and it's still really hard, but after a while you felt that what the hell, they're almost listening. (S2)

To get structure in everyday life

Five of the students reported that they had learned to take more responsibility for their studies and were working much more independently than previously. Thirteen of the students also told us that their confidence had progressively increased at the IT-track and that they had learned to take on more challenges and tasks: 'The biggest problem when you got here ... you didn't try yourself ... but I've learned a sensible thing when I've been here ... and that's try yourself, damn it, you will make it' (S2). Five of the students reported that during their enrolment on the IT-track they had learned to structure their time better and thus manage to do more in everyday life outside school.

Before I started here, I had great need for home support ... when I started here, I decided that I didn't want it. The result was that I clean, wash, and do the dishes. Those things have never worked before [...] I have regained control of my life. (S1)

Now there's a structure [...] it feels damn nice because I've never had a routine in my life. That's something people with Asperger have a damn problem with ... getting routines. It feels damn good to finally have found a routine on something ... that works ... that's what's so incredible. (S2)

Extended horizons of possibility

Twelve of the students at the IT-track told us that it was difficult for them to get a job after high school and only four of them were eligible for higher education. Three of the students continued their studies, in adult education or folk high school, and two started college courses from which they then dropped out. Six of them also worked for shorter periods. Five of the students said that they had not really done anything organized after upper secondary school; four of them sat at home, sometimes without hardly meeting others. They told us that they felt marginalized in society and

that they did not feel that they were participating. The reports in this section describe what it meant for the students to come to the IT-track. Three distinct areas were identified:

- broken isolation;
- experiences of participation, alignment, and a meaningful social context; and
- a brighter future scenario.

Broken isolation

A common result of attending the IT-track for many of the students was that a long period of isolation was broken. Eight of the students stated that they had been idle with the experiences of loneliness, meaninglessness, and marginalization from the rest of society for long periods of time before they started on the IT-track.

I haven't had a real job ... it's starting to feel a little awkward when you're thirty and haven't really found your place. (S14)

I didn't really know what to do because I didn't finish Upper Secondary school ... I couldn't cope the last year there ... then it became that I sat at home and did nothing. (S13)

Five of the students also speak of long-term depression as part of the problem.

Then I got my bad period of depression ... so I was out of a job ... ended up in a pre-stabilizing and then 'climb up' process ... that went on until this day ... it was a long time where I really didn't do anything ... I've had contacts with psychologist and then I ended up here eventually. (S12)

Attending the IT-track was described by 10 of the students as 'a new start in life'. 'It's probably the best thing that has happened to me' (S12). Another student said that, for the first time in several years, he developed a routine and felt that there is finally something happening in his life.

I've started to get going again much better ... I get a lot more done. It's starting to happen things again [...] You start to get some routines again ... start coming back ... it works better with the circadian rhythm as well [...] I'd been sick for a long time ... before I got my examination. Then when the sick leave ran out, I went for some time there [...] Now I have some routines and begin to get back working and learning to use the working memory again. (S7)

Experiences of participation, alignment, and a meaningful social context

Thirteen of the students claimed that the IT-track was fully adapted to their needs and circumstances, and that they experienced a meaningful and participatory social context that they had not experienced before.

I'll be damned honest with you, I appreciate it really damn much [...] For it's really good stuff that they've done here and really puts adults with Asperger in focus and try to help our needs [...] it's tricky when there are exactly the same requirements for all people and it should be done in the exact same order [...] It's so damn fun here ... hell, it's probably why I come back every day just because I know that here I'm surrounded by cool teachers and disturbed students (laughter). (S2)

All students were happy with the attitude of their classmates and the staff, and the teaching. 'The arrangement of what we study and contacts with teachers and stuff ... it all works very well' (S14). 'This is the way I want it, I want it at a level where the teacher trusts that I know what I'm doing. I understand my own talents and limitations' (S1).

A brighter future scenario

Attending the IT-track contributed to creating a more meaningful existence for the students, in which they felt involved and felt like they were a part of a social context. Thirteen of the students reported that they had a new hope in life and looked more positively towards the future since they had begun

at the IT-track. 'I was very down when I started here but now I'm ready again ... everything seems to resolve itself ... maybe I can even have a job within a few months', says S11. Another student tells us that the future does not seem impossible anymore after beginning at the IT-track:

It's better than I thought [...] I went from thinking I'll probably get sickness benefits to considering becoming an engineer. Only to dare thinking that it doesn't need to be as it always has been before ... I could do something with my life [...] The future doesn't seem impossible anymore. (S1)

Discussion

An experience of social learning and meaningfulness

The interviews show that all of the respondents felt a sense of meaningfulness by being on the IT-track. They functioned in a social context. Five of the students said that it was the first time in their lives they had experienced such a thing within the education system. For eight of the students, attending the IT-track resulted in the breaking of a long period of isolation. Attwood (2000) and Jackson (2011) show that deviant behaviour among persons with Asperger syndrome is often associated with societal exclusion. With the term *isolation*, we refer to the students' statements about the fact that, after upper secondary school, they experienced difficulties in finding employment or further education and that they became stuck in long periods of idleness when they mostly sat at home and did not feel they participated in society. Five of the students also reported that they had been depressed for long periods of time and four had also attempted suicide during these periods. Attending the IT-track was then perceived as a huge positive change in life, in terms of belonging to an understandable and meaningful social context. The teachers were described as key figures in the creation of an environment which enabled social learning and a sense of meaningfulness. By developing strong and well-functioning relationships with students, the conditions for learning increase (Aspelin 2012), including both the course content and interpersonal aspects of learning. The teachers' personal engagement was also found to be of great importance in the Danish equivalent to the IT-track (The Danish Evaluation Institute 2010).

The arrangement at the IT-track offered the students a highly structured environment and the opportunity for customized training. Previous studies have shown that this has often been lacking in the educational system (Simmeborn Fleischer 2012, 2013; Adolffson and Simmeborn Fleischer 2013; Giarelli and Fisher 2013; Börnfelt 2014). Moreover, by providing this individualized environment, which is experienced as a secure environment, the opportunity for informal learning thereby increases (Bengs, Borg, and Liljeholm 2013). The social learning can be seen as a result of this and the notion of being able to function better with others have contributed to a higher sense of self-efficacy (Bandura 1982) among the students.

Adjusting supported education

All of the students were satisfied with how the teaching content was adapted to their needs and the staff treated them in a way that enabled their academic success. The content in the teaching at the IT-track is comparable with some of the characteristics of SED (Unger 1989; Anthony and Unger 1991; Waghorn et al. 2004). The students' stories about their experiences at the IT-track suggest that the conditions or the support functions are well-developed. This includes teaching-related assistance, as well as external support regarding contacts with authorities, healthcare, and so forth. We have not had the opportunity to fully investigate whether the IT-track complies with all of the 10 characteristics of an ideal SED environment. The statements made by the students and our interpretation thereof indicate that at least half of the points are met. This includes cooperation between education organization, psychiatric nurses, social insurance, employment centres, and other organizations that provide support to the target group (point 1); support to develop skills to deal with the new school environment such as stress management, time management, and study skills (point 5); personal

support and mentoring at school or from external sources (point 7); help to get access to courses and educational support (point 8); as well as access to tutoring, library support, and other aids for training (point 9). Considering the IT-track's targets and the students' conditions and needs, these points appear to be essential. Regarding the remaining points, training support by specially trained SED staff (point 2); access to educational and vocational counselling (point 3); financial advice (point 4); information from the school about students' rights and resources (point 6); and access to public support, preferably outside the training institution, to handle situations that may affect the implementation of the programme (point 10), we cannot state whether the IT-track fulfils these points. The IT-track is currently developing point 10.

However, most prominent in the interviews was the students' social learning. Much of this could be classified as social skills or at least an ability to empathize with others. Thereby, the points connected to social learning, preferably points 5 and 7, appear as extra important since they constitute the relational aspects at the IT-track, which the students highlighted to a great extent. It is obvious that rehabilitation is an integral part of the IT-track (Waghorn et al. 2004; Bengs, Borg, and Liljeholm 2013) but given the students' development in several areas, one could even argue that education in this case functions as rehabilitation (Unger 1989). Through the education, the students have become increasingly prepared for working life but they have also become more and more skilled in handling everyday life. This has been achieved despite not all of the SED points having been met in contrast to what previous research has pointed out (Stoneman and Lysaght 2010; Kidd et al. 2012, 2014; Manthey, Goscha, and Rapp 2015). Nevertheless, it seems that the IT-track has captured the essence of what SED stands for in enabling the increase of the students self-esteem and satisfaction.

Conclusion

The purpose of this paper was to describe how young adults with Asperger syndrome experience the IT-track. We have highlighted the teaching-related and interpersonal support functions. When we consider this with reference to the 10 points of SED, we claim that the most important ones are points 5 and 7. By supporting the students as they develop skills to deal with the new school environment such as stress management, time management, and study skills, they gradually developed self-esteem. This, in turn, led to an increasing desire to socially interact with fellow students. Given the students' background with previous negative experiences of school and exclusion from society, the social learning that took place within the IT-track was remarkable. This was achieved even though the IT-track does not meet all of the points that characterize SED. Capturing the essence of SED, in terms of developing an environment that enables personal growth, proved to be most decisive.

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