

INCLUSIVE PHYSICAL, SOCIAL AND DIGITAL SPACES IN VOCATIONAL REHABILITATION

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This paper describes and discusses factors related to the working environment that promote the inclusion of job seekers with cognitive impairments. Vocational rehabilitation for job seekers with cognitive impairments is undertaken in adapted working environments. The working environment is a synthesis of the practices that are developed in the enterprise, in physical premises and digital spaces.

Job seekers with cognitive impairments, for example Asperger's syndrome and/or ADHD, have greater challenges in entering the labour market compared with other groups with impaired functional capacity (Hansen 2009). The importance of social skills, a more complex and dynamic working life and modern methods of organizing work, such as groupwork or teamwork in smaller groups with a flat structure, constitute some of the reasons for these challenges (Hawkins 2004, Attwood 2007).

This paper builds on research following two adapted rehabilitation programmes for job seekers with cognitive impairments. Empirical data were collected through ethnographic/praxiographic fieldwork in enterprises offering the rehabilitation programmes (duration 24 months) (Mol 2002). The empirical material from this multiple case study is discussed using the concepts of 'scenario' (Callon 1987), and 'affinity space' (Gee 2004) from Geography and Science, Technology and Society studies (STS).

The paper describes how the rehabilitation scenario in the enterprises is constructed to help participants to work on something that interests them, in a space where they can develop coping strategies and with access to technology that can enable them to find work as IT professionals in the future. Further, the study points to how development of an individually adapted and familiar digital interface, as well as access to a digital space in which the job seekers can be relatively autonomous, were crucial.

The study finds that factors such as job tasks, the community of a shared diagnosis and interests, and the fact that the working environment includes physical space that can be characterized as affinity space, contribute to inclusion and the development of coping strategies.

Keywords: Inclusion, vocational rehabilitation, affinity spaces, scenario, praxiographic fieldwork

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Introduction

Young adults with cognitive challenges associated with diagnoses such as ADHD or Asperger's syndrome constitute a group that faces difficulties in entering the labour market. Their experienced functional impairments are often reported to entail challenges with regard to concentration, self-organization, and executive functions. Vulnerability to stress, cognitive fatigue, procrastination, and problems with social interaction, but also related mental conditions such as depression, cause many to drop out of education and face problems finding a job (Anker, Halmøy and Heir 2018). The labour force participation rate for adults (16–66 years) with Asperger's syndrome in Norway has been estimated at 15% (Steindal 2010), while the rate for the population as a whole is 75% (Bø 2014). The equivalent participation rate for adults with ADHD has been estimated at 22% (Gjervan, Torgersen, Nordahl and Rasmussen 2012). Estimates of labour force participation in the USA for people with cognitive problems are similarly low (McDonough 2010, Taylor and Seltzer 2011, Shattuck et al., 2012). Compared to other groups of job seekers with functional impairments, such as musculoskeletal afflictions and mild mental disorders, cognitively challenged young adults also face greater challenges in entering the labour market (Hansen 2009).

This is also reflected in a recent statistics report from the Norwegian Directorate for Work and Welfare (NAV 2019), which points to the fact that the proportion of young people (20–29 years) who are outside working life is increasing, and that in this age segment, the group of men categorized as suffering from mild mental and cognitive disorders, including ADHD and Asperger's syndrome, is expanding. Further, there is also an increase in men in this age group who remain outside working life on lasting benefit schemes, on disability benefits (ibid). Likewise, a recent OECD-report (OECD 2018) raises concerns about increases in so-called NEET youth (not in employment, education or training) in Norway and longterm sustainability of welfare services. It suggests that Norwegian authorities take action to include these groups into working life.

All of this implies that vocational rehabilitation programmes and participation for this group of cognitively challenged young people is of vital importance, on an individual level as well as on a societal level. One symptom thereof is that the increase in job seekers with cognitive difficulties who want work-oriented rehabilitation has increased dramatically in recent years (Chen et al., 2014).

However, participation in work rehabilitation programs does not always lead to inclusion into working life. Research on the inclusive effects of work rehabilitation programs in related fields of disability studies shows that on a more general level people with disabilities tend to become permanently excluded from working life after completion of work rehabilitation (Wendelborg, C. & J. Tøssebro, 2018).

The effect of participation in such inclusive measures and programmes is thus unclear (Berg and Gleinsvik 2011). It is recommended that, in general, vocational rehabilitation for this group of young adults with cognitive impairment be undertaken gradually (Hawkins 2004). The quality of a rehabilitation programme is commonly highlighted as a dimension that promotes transition to working life. Customized programmes can provide high quality rehabilitation for this group of job seekers. Media reports, case presentations in conferences, and the websites of stakeholder organizations have suggested that various customized rehabilitation programmes have helped some young people with Asperger's syndrome or ADHD find work.

This is the backdrop against which the research reported in this article sets off. The research project investigates vocational rehabilitation practices oriented towards cognitively challenged young adults, with specific regards to the values and roles of new technologies therein. In this article we will describe and discuss how the broader scenario and the more specific design thereof in the working environment in vocational rehabilitation may promote inclusion of job seekers classified with cognitive impairments. The empirical data underpinning the article is based on two years of fieldwork in two vocational rehabilitation enterprises offering customized programmes for young people with Asperger's syndrome or ADHD. These two case enterprises have, for many years, helped more than half of their participants enter working life.

The working environment is defined here as a synthesis of the social, technical and professional practices that have been developed within the two vocational rehabilitation programmes and the physical environments in the locations where the vocational rehabilitation is being done. In order to capture such complex practices and their situated relations with the physical working environments, we draw on insights and theoretical resources from the interdisciplinary field of studies of science, technology and society (STS). Along these lines, the analytical approach can be described as sociomaterial or sociotechnical (Law 2004), and the methodological strategy as ethnographic, or even more precisely, praxiographic (Mol 2002). This body of work argues that it is only for analytical purposes it is relevant to distinguish between social, material, technical, legal and economic aspects of a practice or reality. In practice, and for all practical purposes, they are closely intertwined and can best be described as constituting a 'seamless web' in which changes in one part or element leads to a simultaneous change in other parts. The technical and the social develop in tandem or are 'co-produced', and our methodological strategies and conceptual tools should help us to 'attune to' tracing their intertwining and connections (Asdal et al 2007, Hughes 1986, Suchman 2003, Mort et al 2013).



In the following we first introduce the empirical field and account for the methodical and analytical framework. Secondly, we present the findings and analyse them in terms of three versions of working space environments. Finally, we discuss what factors related to the design of the working environment helped promote inclusion of job seekers with cognitive impairments in working life, and reflect upon dilemmas and contradictions involved in strategies for inclusion and compensation.

The empirical field

As working life has become more complex and dynamic social skills have become more important; this is one reason adults with Asperger's syndrome often have difficulty remaining employed (Hawkins 2004). Modern forms of work organization, such as group work or teamwork in smaller groups with a flat hierarchy, are especially challenging for people with Asperger's syndrome (Attwood 2007). Modern recruitment methods may also be an obstacle that prevents people who have problems communicating, act differently in social settings, and do not appear to be especially flexible from being offered a job (Richards 2015). Working in an open office landscape with few opportunities for personal adaptation, such as screening off noise, light, or smell, may also cause employees with special needs to have difficulty remaining employed (ibid). This is the kind of working life with which cognitively challenged young adults participating in vocational rehabilitation programmes are being trained to cope.

The two rehabilitation enterprises in which the two years of fieldwork were undertaken sell rehabilitation services to the Norwegian Labour and Welfare Administration (NAV). The fieldwork involved following participants, managers and employees associated with the 'Work placement in sheltered enterprises (APS)' programme in both enterprises. To be admitted to the APS programme, the job seeker must have a reduced work capacity, be deemed to have especially tenuous vocational qualifications and be in need of comprehensive and close follow-up for a period of up to two years (NAV 2016). One enterprise had 25 APS places (Enterprise 1) while the other had eight (Enterprise 2). Nearly 80% of the participants were men. The age spread was considerable, with the youngest in their early 20s and the oldest in the early fifties. Most participants were between the ages of 25 and 40 years old.

Methodical and analytical framework

The study takes a praxiographic multiple-case approach based on fieldwork that followed two rehabilitation programmes over 24 months. We have chosen a praxiographic approach because our focus is first and foremost on following and describing sociomaterial practices. A multiple-case approach was chosen as the research design to make it possible to describe and reflect different practices (Yin 2014). The selection criteria for the strategically chosen cases

The admission requirement is based on an assessment of work capacity and is independent of any diagnosis. Most of the participants in both enterprises were described as having a reduced work capacity, primarily linked to cognitive impairments associated with Asperger's syndrome and/or ADHD, but often in combination with additional issues such as mental conditions, dyslexia and addiction problems. For this group, the rehabilitation literature describes common challenges as involving rapid cognitive fatigue; executive problems; problems organizing themselves and their work; hypersensitivity to noise, light and smell; concentration and memory problems; and difficulties with social interaction (Bye and Sagstad 2016). Further, it is reported that in working life, adults who have difficulty interpreting social contexts may cause misunderstandings, irritation and other unfortunate social complications. Other idiosyncratic features include preoccupation with personal interests in a manner that may be perceived as intense, and reduced impulse control (Hawkins 2004, Hoem 2008, Nadeau 2015).

In both enterprises, the rehabilitation programmes were established as a comprehensive service for adults with cognitive problems. This means that the enterprises' value basis, the staff recruitment, the organization of the modes and hours of work, and the design of the physical and digital working environments were tailored to this target group. The objective of these customized rehabilitation schemes was to prepare and qualify the participants for a job in the ICT industry. Emphasis was placed on establishing a working environment where participants could practise coping with the challenges of working life.

Both rehabilitation enterprises are ICT companies that develop software and web solutions for commercial and public agencies. All staff members possess the ICT skills required to deliver these services and products, in addition to being educators and/or social workers.

Programme participants work on projects alongside other participants and employees, or they work on their own ICT development or service solutions for external clients. The practical work involves tasks such as writing web pages, writing code, writing documentation for solutions, and testing software applications. The case-companies are here superficially described due to anonymity reasons.

were as follows: 1) The rehabilitation enterprises had to market themselves as enterprises that emphasize the use of technologies in their social work practices; 2) All participants had to fulfil the admission requirements for an APS programme; 3) The staff of the case enterprises had to include information and communications technology (ICT) experts with skills in technological adaptation. 4) The enterprises had to be able to document that more than 50% of



programme participants had been transitioned to working life over the previous three years.

The method used in the fieldwork in both case enterprises was interactive observation (Tjora 2012). In addition, interviews were conducted with thirteen participants in the rehabilitation programmes, the enterprise directors, and five employees; two group interviews with employees were also conducted. Practical arrangements for the fieldwork, consent from all employees and participants, and declarations of confidentiality were agreed upon with the enterprises more than six months prior to the first observation phase. No personal data were collected, and the study was approved by the Norwegian Social Science Data Services (NSD).

The case enterprises were provided with observation memos, transcripts of interviews, proposals for analyses and a draft of this article. A recurring question for the case enterprises during this iterative process concerned whether the descriptions and analyses made sense to them. This process also constituted a response validation and a means of taking into account challenges in terms of research ethics, as well as of helping maintain transparency in the research project (Slettebø 2008, Fangen 2010:241). The case study is delimited in time and place and by those who undertook the fieldwork. The transfer value of knowledge from this study must be seen in light of these factors (Asdal, Brenna, and Moser 2007). As a researcher, we have followed both case enterprises closely over time. We met with representatives of the enterprises at regular intervals to discuss the implementation of the fieldwork in all activities.

Analytically, this study is situated within a social constructivist research tradition and in the framework of studies of science, technology and society (STS) (ibid.). The data material is discussed using the concepts of 'scenario' and 'affinity spaces' taken from the STS tradition. The term 'scenario' is used to bring out and describes the imagined future working situations on which the rehabilitation enterprises build when designing and adapting the working environment in the rehabilitation programme for this group (Callon 1987). This understanding of scenario also includes people, technologies, organizations, modes of work, and expertise,

Findings and analysis

To present this comprehensive working environment, we can for analytical purposes subdivide it into three constructed, yet intertwined elements: the physical space, the social working environment, and the digital space. In reality, these three elements continuously interact with each other and with the actors present in and the practices constitutive of these spaces. In the case enterprises

and the interaction between all these agents. The design of the sociomaterial spaces and the practices being developed in these spaces are both relevant to provide a comprehensive description of the scenario that the rehabilitation enterprises claim will provide the best rehabilitation arena for the participants.

The analytical concept of 'affinity spaces' (Gee 2004) is used here to describe the scenography, the physical, social and digital spaces within which much of the rehabilitation programme took place in the rehabilitation enterprises. The concept of 'affinity spaces' is transferred and translated for our purposes from the digital world where it is mostly used to describe virtual spaces such as Internet forums, MMORPG (Massively Multiplayer Online Role-Playing Games) or social media. It can however also be used to describe physical places where people meet face-to-face to participate in individual activities (ibid.), as well as combinations or hybrids of such activities, their spatial conditions and their co-production.

Gee (Gee 2005, 225-228) defines affinity spaces as spaces where, among other things:

- The participants strive for the same goal.
- Race, class, gender, or disability is not the primary shared trait.
- There is room for newbies, masters, and everybody else.
- Individual skills and knowledge are valued.
- There is large variation regarding how the participants came to this space.
- Leadership is fluid and leaders are resources.

In the following, 'technologies' is used as a collective term for all types of ICT used at the case enterprise. It includes the production and interaction tools that are used by the enterprise in a professional capacity as well as the ICT solutions that the job seekers use to maintain or improve their competitiveness (De Jonge, Scherer, and Rodger 2007). Such technologies are also referred to as cognitive support technologies (CST) (Scherer, Hart, Kirsh and Schulthesis 2005, Scherer 2005). In this context, the concept also includes technologies that help participants remain or become motivated to attempt to cope with an activity or life situation.

and in the rehabilitation programmes that the participants followed there were numerous spaces. The spaces described and discussed here have been identified as the most important ones through engagement with and analysis of the empirical data, based on the participants' narratives of how they worked and produced in the digital space while physically sitting in the 'computer room'.



The physical space – ‘the computer room’

We have chosen to refer to the space that the participants identified as their workplace as ‘the computer room’. This is a collective designation and an interpretation of the premises, because the computers used by the participants constituted the defining object in both enterprises. The computers served as production equipment and the interaction and organization technology to which all participants and staff members related throughout their working hours, with the exception of the lunch break. In Enterprise 1, the space was referred to as ‘the project room’ and in Enterprise 2 as ‘the work room’. The rooms were different in size and layout but shared certain features in terms of their function, social rules, and equipment.

In Enterprise 1, the project room was also the large room where the approximately 25 participants and staff members met every morning for a roll call and to review the assignments. This was the room that most of the participants entered first after arriving for work at 8:30 a.m. Before entering, they said hello to the receptionist, punched in, left their jackets in the cloakroom, and said hello to those standing at the coffee machine and in the corridor. Greeting everybody when coming to work had been introduced as a social rule.

There were 20 desks and comfortable office chairs with wheels in the room. All workstations were placed along the walls to give the room an airy ambience. Half of the desks and chairs were grouped in twos and fours. The rest stood alone. The room had a large whiteboard, a projector, and a screen. In this room, the work manager had a permanent work station with multiple monitors and desktop PCs. Some of the participants had fixed places and marked them by leaving behind personal objects at the end of the working day. Some participants worked exclusively on private computers, although most of them used laptops belonging to Enterprise 1. Personal headphones were frequently used.

In Enterprise 1, the participants and staff members used the computer room to collaborate on development or service projects for external clients. Short courses in the use of applications were also held there, as were reviews of updates and system training. The project room can be described as an office landscape in a workplace where the participants are expected to communicate and include each other in the assignments undertaken.

In Enterprise 2, the work room was reminiscent of a small cave in the large office complex. All participants went directly there after having punched in. It could just about encompass the eight desks placed along three of the walls. The desks were facing the wall, with a desktop PC on each. Some of the participants had their own private laptop next to the computer monitor. All participants

sat with their backs to the centre of the room, and most of them had their headsets over their ears or around their necks. The room appeared dark. There were two windows in the room, both well covered with curtains. In addition, the room was provided with a projector, a screen and a large whiteboard. The atmosphere in the room was convivial; the participants would sporadically exchange small talk about their assignment, while others kept working undisturbed, shielded by their headphones and the partitioning walls between the desks. Most of their attention was focused on what was happening on the computer monitors. The participants talked about virtually everything, but it mostly tended to be related to ICT or technology.

When the work manager or an educator was present in the room, everybody turned away from the monitors to face the room to follow what was presented on the screen or the whiteboard. All participants sat on comfortable office chairs with wheels.

In both enterprises, the job assignments were not of such a nature that the participants needed to be physically present in the computer room. It was technically possible for the participants to work on most of their assignments from home (programming, web design etc.). The participants reported that they had access to computer equipment at home, sometimes even more sophisticated equipment, and many of them were engaged in their own computer projects in their leisure time. One of the participants in Enterprise 1 told us that ‘being here in the enterprise is an alternative to sitting at home. I do much of the same things here as I do at home’. Only exceptionally did the participants work at home in agreement with the management, for health reasons or on a specific day of the week.

In interviews, the participants described concentration problems and challenges associated with social interaction. Given that the enterprises recruited numerous participants with cognitive impairments, these challenges were as expected. It might seem paradoxical that both case enterprises had organized their primary work premises as an open office. The most common objections to open office landscapes are that they cause concentration problems and constitute a difficult social setting. In the interviews, the participants were asked to recount their experience of working in the case enterprises’ open office landscapes. This quotation summarizes the general opinion that it is demanding when there are many people present at work, but otherwise quite enjoyable, and that it tends to be quiet and calm:

Yes, I sit there with the others, and I’m quite used to sitting in open landscapes. Yes, I’m all for people being able to work in the way they want, in a closed office if need be. Otherwise it’s nice



to sit in the project room. I'm used to sitting in a cowshed, as I call it. But there are no problems here. It's calm and quiet. No phones, nothing at all.

In Enterprise 2, the participants were informed that the entire floor was to be reorganized, and that the computer room in which

they had been sitting for more than a year was to be moved. In a joint letter, the participants pleaded to keep the room as it was. Their arguments included that they had settled in well there. Their plea was heard, and the computer room remained their permanent workplace for the duration of the rehabilitation programme.

The social working environment

The social aspect and the time available for socializing often featured in the participants' descriptions of their experience of working in the computer room. They reported having plenty of time to complete their assignments, which led to the tendency to become 'rather laid-back', in the sense that they would chat about every imaginable topic and play computer games with the others. Many of them told us that they had hit it off with other participants with whom they shared interests, such as a knack for technology or cars. The participants occasionally alluded to their own diagnosis during their conversations in the computer room. In both case enterprises they had their own training courses and conversation programmes about what it is like to have a diagnosis of Asperger's syndrome and/or ADHD. In the interviews, the participants noted that they felt it was liberating and relaxing to have these topics addressed as part of the rehabilitation programme. To quote one participant, 'Then everybody will know what it means not to be neurotypical'. The way in which the participants referred to diagnoses when chatting in the computer room was characterized by this awareness.

In both case enterprises, well-being was regularly mapped in surveys and performance interviews. These mappings, which were presented by managers at management meetings, showed that the participants generally were comfortable there. Observations from the fieldwork, a low rate of attrition, a high rate of attendance and statements from the participants confirm that in general, the participants enjoyed the programme. The participants highlighted the social working environment in the computer room. Here, they could meet others who shared their interests, and they could learn new ICT skills. The participants and the staff members alike emphasized how well-being was associated not only with the social aspects of the programme, but also the opportunity to acquire new skills and work with real work assignments. For example, they were trained in using key ICT development tools and programming languages, as well as software validation and web publishing tools. They also acquired useful skills in computer security, digital interaction and presentation techniques.

To the extent that the participants had any critical remarks about the enterprises, these were related to a lack of real assignments.

Because of this lack, the participants would periodically work on 'exercise' assignments that were perceived as not all that important.

The social interaction patterns differed between the two case enterprises. In Enterprise 1, where there were more staff and participants and more comings and goings, there was more social interaction between the participants. In Enterprise 2, where there was a permanent group of eight participants, the social interaction changed in character and scope over the two years they spent there. At start-up, most of the interaction was initiated by the supervisors. Over time, the participants started to interact when the supervisor was not present. One participant describes the change in forms of social interaction thus:

We're not all such chatty types. During our first weeks here, or even the first months, there was a really strong wish, almost a demand, for all of us to have lunch together, and then there was a fixed arrangement that we should meet in the lunch room at 11:30 and one of the teachers would sit there with us and strike up a conversation. On the occasions when the teacher wasn't there, we could sit together for 25 minutes without exchanging a single word. And I can imagine that many people would feel uncomfortable about this, sitting there at a lunch table without anyone saying anything. But none of us seemed to care that it was quiet, and I too felt that this was totally okay. But gradually we have got more used to each other. This programme has been good practice in becoming a little more used to relating to others, in being able to converse and initiating chit-chat, and it has worked really well, I'd say. Otherwise we just sit in the workroom and do our own things. And we don't exchange all that many words during the working day. But I feel that there's a good atmosphere there anyhow.

Participants in both case enterprises reported liking that collaboration on assignments was organized with the aid of a digital project management system. Collaborative interaction, such as allocation of assignments, definition of project roles, consultation of progress reports, was primarily undertaken in the project management tools. These tools could also be used to request guidance from other participants or professionals.



The ever-present digital space

Most of the production of goods and services in the case enterprises takes place in the digital space. Observations of how the participants worked with the digital interface (screens, menus, accounts etc.) showed that each had his or her own individually adapted digital working environment. All participants had their own accounts in the enterprises' internal production systems. The participants organized the menus and the visual digital interface to their own liking. They adapted functionalities and organized file structures, adjusted the responsiveness of the keyboard and

the mouse, and changed the resolution and the colour scheme. Gradually, all participants created their own unique digital interface. In addition, they had access to private accounts on the Internet and in the 'cloud', such as Google, Facebook, Dropbox etc. These private digital interfaces had been individualized to suit the needs and tastes of each and every participant. The design of such personal interfaces was also a topic in the social interaction between the participants.

Discussion

Tolerance for private digital interfaces

The computer rooms in the case enterprises were only partially designed in accordance with a scenario of how employees should work in an ICT enterprise: systematically, in a structured fashion, primarily in front of a monitor, and in response to clear orders from a digital project management tool. The computer rooms were adapted to a scenario that represented both a challenge and a form of cognitive support for participants with cognitive impairments. The challenge consists in the use of an open office landscape. The permission to have an individualized interface and the opportunity to withdraw digitally or to engage in social interaction with others as well as work in isolation are supportive elements. The computer room is a hybrid between the efficient and exacting aspects of working life and the familiar 'boys' room', in which the participants reported spending quite a lot of time. It is recommended that employees with cognitive challenges, and those with Asperger's syndrome in particular, should have an opportunity to withdraw for a 'time-out' when experiencing cognitive fatigue (Hawkins 2004). A 'time-out' would normally mean leaving the room or withdrawing from a challenging social situation to seek out a place with no social obligations or expectations. In the enterprises observed, only a few participants made use of the opportunity to withdraw to a closed office or a vacant meeting room.

Having access and the opportunity to relate actively to a private digital space may function as a 'mini time-out'. Because they were permitted to organize or bring their own digital space into the job, the participants gained access to a space where they enjoyed both autonomy and control. The fact that many participants used headphones while sitting in the computer room may also have helped reinforce the 'time-out' effect. They could also access digital organizational tools to help them cope with daily life. The properties and content of the digital space that helped each participant cope with the challenges associated with being in the socially demanding computer room varied. These included the opportunity to immerse themselves in private interests on the Internet, interact with others in web forums or by playing games, or just surf the web. In many workplaces these would be

regarded as 'private' activities and would normally be inaccessible, being blocked by the management or socially frowned upon by colleagues and managers.

Inclusive affinity spaces

The computer rooms in the two rehabilitation enterprises can be characterized as affinity spaces (Gee 2004). In both enterprises, the employed ICT professionals and the participants all had their workplaces in the computer room. The room did not distinguish between ICT novices and professionals. In one of the enterprises, the work manager, who was also the professional in charge of most of the ICT training courses, had a permanent workplace in the computer room. In the other enterprise, the ICT instructor had a permanent desk in the computer room. Moreover, everybody in the room was working in their own way towards the same goals, i.e. to develop ICT solutions. Irrespective of what component of an ICT system they were working on, they all strived to create the best possible products and to learn as much as they could in the process. This also applied to the staff members. The staff helped in the process of tailoring unique products for the customers, and each project was a source of new skills for the employees as well. Finally, because of the way in which the practice in the computer room had developed, those who occupied it did not need to work in the same way or simultaneously, and they would often work independently of others. In the physical affinity space, the computer room, the participants were free to be continuously in the shifting social space while also remaining within their individually structured, logical, stable and reliable digital universe.

The fact that the computer room can be characterized as an affinity space makes it inclusive through its high tolerance of parallel activities and the degree of social involvement. In this affinity space of "the computer room" a kind of situational symbolic community was developed to some extent (Tjora 2018).

A community of interest and diagnosis

The fact that 'all' participants were part of a 'diagnosis community' was highlighted as an advantage by the interviewees. This confirms findings that among adults with Asperger's syndrome, participation



in such homogenous groups is regarded as a relief as well as an asset (Steindal 1994, Schäfer 1997). Establishing a rehabilitation scenario with participants who share many of the same challenges and qualities has created a place where the participants thrive and develop, but it is also the mode of work that helps participants find a job. Both enterprises recruit participants who wish to work in the ICT industry, and the participants can thus meet others who share their interests. The programmes are designed in line with a rehabilitation scenario guided by values such as coping and skills development, competence with regard to the target group, and inclusion through a specialized programme for a group with special needs. Work routines, the use of technology, and a sense of security and coping, exemplified by the fact that the participants managed to stay in the computer room, may have been factors in the enterprises' success in helping so many to be included in regular working life.

The case enterprises demonstrated their interest in the participants' ICT skills by mapping these prior to admission as well as during the introductory weeks. The participants received recognition for their interest in ICT from staff members, customers, and fellow participants. For many participants, ICT-related activities were a leisure activity that they brought with them into the rehabilitation programme. The participants reported that their activities during the rehabilitation programme were largely similar to what they previously did at home. They also reported receiving recognition for their ICT skills at the case enterprise, which was not the case for their own projects at home. Moreover, they reported perceiving that their ICT skills were valued when being charged with real assignments paid for by external clients. The participants distinguished clearly between 'exercise assignments' and 'real

commissions', and the opportunity to work on real commissions was what motivated them the most.

The case enterprises, as transformation agents, train and prepare for inclusion of the participants in the labour market, and as such create the conditions for 'normalization' through participation in the ordinary labour market (Moser 2006). One of the inclusion paradoxes is that the participants' entry into an inclusive vocational rehabilitation programme goes through workplace exclusion, defined as; a variety of diagnoses, classification as neurodivergent adults, a mixture of disabilities and categorization as persons with particularly difficult opportunities/challenges in the labour market. The case enterprises however create room for the participants' specific qualities, personal behaviour and challenges, while at the same time focussing on what normally causes an employer to buy labour; the employee's ability to conscientiously carry out work satisfactorily in quality. They knew that participants' opportunity to be included in the workplace lay in their ICT competence and interest. These are general inclusion requirements in ICT industry. In this way, the enterprises' staff found themselves constantly balancing and negotiating difference and normality, and difference and equality.

There is an increasing understanding that all employees need some form of facilitation of the work place; temporary, physical or psychosocial. Facilitation in the workplace is about to become the new normality, and most employees have expertise in their own adaptation needs. Through the vocational rehabilitation program, the participants' facilitation needs were uncovered, and the participants awareness of what kind of facilitation in the workplace he or she needs to deliver on an equal footing with everyone else, were strengthened.

Summary

The fieldwork conducted in these specialized rehabilitation practices brought out three particular factors related to the design of the working environment that may help promote inclusion of job seekers with cognitive impairments in working life:

- A design that results in a community of interest and diagnosis;
- The presence of sociomaterial spaces that can be characterized as affinity spaces;
- Permission to access individually adapted and familiar digital interfaces and spaces.

All three factors appear to have an inclusive effect in the two delimited rehabilitation practices that have been observed. The work assignments, the community of interest and diagnosis, and the inclusive working environment in the computer rooms appeared to have such a motivational effect that the participants requested permission to work at home only in exceptional cases.

The rehabilitation effort that was observed took considerable time – up to two years. Defining the computer room as an affinity space made it possible to include participants who were at varying stages of the rehabilitation process.

The rehabilitation scenario in these case enterprises has been designed to permit the participants to work on something that interests them, in spaces where they can develop coping strategies and with access to technology that can help them work as ICT professionals in the future. The study has described a path to work inclusion based on the participants' interests as well as on professional competence in functional impairment and individual adaptation in the rehabilitation enterprise. The dilemma of the described practices is that inclusion still seems to be implied in and resting upon exclusion. It implies an original or initial exclusion in the form of a definition of difference, for instance in the form of diagnosis. This is also reflected in the fact that the enterprises



have inclusion in the workplace as a common goal, but that the arena for these efforts at inclusion, the rehabilitation enterprises, is a somewhat parallel universe to the ordinary labor market. It

is however possible to think that this detour into the protected labor market is necessary for some groups of job seekers, who are statistically excluded from the ordinary labor market.

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¹ In line with this, we have started not from diagnoses, but from the challenges people experience in their daily lives. Diagnosis is not a criteria for inclusion in the rehabilitation programs we have followed and neither has it been a criteria for inclusion in this study. We have not asked for or registered any diagnoses, everything that is said about diagnoses has been part of what employees, management and some participants have shared and reflected upon, in general terms, in interviews and conversations. Accordingly, we have chosen to adopt an agnostic position with regard to truth claims about the realities versus socially constructed nature of diagnoses. Arguments about social construction are not necessarily opposed to reality claims about the challenges people experience, but rather emphasize how socially constructed categories and classifications such as diagnoses work in practice, and the dilemmas and contradictions they often imply. In our empirical data and analyses issues to do with how diagnoses work in practice, and with how participants relate to them, appear on several occasions. But for reasons to do with space, time and resources, it has not been possible to follow the line of research and questions to do with the actual construction of diagnoses in this ph.d.-project. See however the interesting work of Tjora & Levang (2016) on ADHD and society in a Norwegian context and Per Måseide as an example of medical sociology on categorization (1987), as well as the related literatures on categorization and standardization in STS by i.e. Bowker and Star (1999).



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