ABSTRACT

The paper reports on a research project addressing the issues of dyslexia in higher education. The project has an exploring character and focuses on how students with dyslexia experience and manage their situation as students in TVTE, a three-year-long study at Akershus University College in Norway. The aim of the project is to get empirically based knowledge about the characteristic features of their study situation, and about their perception of their personal dyslectic difficulties. The research has a multiple-case design investigating a contemporary phenomenon within its real-life context. The empirical data is built on qualitative interviews with six students diagnosed as dyslectic in TVTE.

Keywords: Higher education, students, dyslexia, learning strategies

INTRODUCTION

Higher education entails excitement and new opportunities. Students with dyslexia, however, may experience obstacles such as essays, written reports and exams, reading assignments, spelling issues, and lack of time can stand in their way. Unfortunately they may also face a lack of understanding by their lecturers or peers. Hence, specific reading and writing difficulties create a great amount of time pressure and stress in the study situation for students with dyslexia in higher education.

This paper reports on a research project addressing the issues of dyslexia in Technical and Vocational Teacher Education (TVTE), a three-year-long study at Akershus University College in Norway.

Aims and objectives
The aim of the research is to get empirically based knowledge about the characteristic features of the students’ study situation, their self-perception of their dyslectic difficulties and how they experience and manage the problems that dyslexia causes them.

The main issue is:

*How do students in Technical and Vocational Teacher Education experience their study situation related to their personal dyslectic difficulties?*

The individual and the context of her study situation are studied from a unified point of view. The aims in such case studies are to extract the essence of complex phenomena and contexts. The study may potentially lead to advances in understanding and richer practical repertoires for the informants through acts of narrating. The knowledge gained may in turn lead to a
better understanding of other similar cases, which involves a generalizing transference of knowledge.

It is important that students with dyslexia are met with understanding of their disabilities and offered special arrangements in certain situations, when necessary. It is also important that these adaptations do not result in a reduction of academic requirements of the individual courses.

THEMATIC FRAMEWORK

“Knowledge Promotion” – A new education reform
A new reform in primary, lower and upper secondary education and training is introduced in August 2006. Under “Knowledge Promotion”, schools are to prioritize the cultivation of basic skills in all subjects as an important foundation for all other learning. Among these five basic skills are:

• the ability to read
• the ability to express oneself in writing

These fundamental skills have been incorporated into the syllabuses for all subjects. All teachers are therefore responsible for enabling pupils and apprentices/trainee teachers to develop basic skills through their work in various subjects. An emphasis on reading and writing from the first grade is an integral part of “Knowledge Promotion”. (St.meld. nr 30, 2003 - 2004).

The implementation of the new curricula offers new challenges for all vocational teachers, especially those with dyslexia. As vocational teachers, they may also find that 20% of the pupils in their classes have a language-related learning disability according to the national tests.

We know from a country-wide inquiry in Upper Secondary School in 1999 that 67% of the teachers in vocational training report that they teach pupils with specific learning difficulties. Furthermore, 38% of the teachers express that they experience a lack of knowledge about how to meet these pupils’ special educational needs (Borgå & Holmberg 2001).

Access to higher education
The principle of universal design has its starting point in basic ideas and notions about architecture (that is to reduce physical barriers), but is today used in a much broader sense, also within education and culture. The focus is on equality and access for everyone (Andersen, 2003). The opportunity to participation in society depends upon the individual’s access to education, if necessary through special tuition.

The learning environment has to be designed according to the principles of universal design. The students’ rights and obligations are founded on the Act relating to universities and university colleges. The Act, § 4-3-5 Learning Environment states:

The institution shall, to the extent possible and reasonable, adapt study provisions for students with special needs. This adaptation must not result in a reduction of academic requirements of the individual courses.
The act implies special adaptation for students with dyslexia. On the other hand it does not say what kind of rights is included, and therefore gives rise for different interpretations and unequal practices. But no matter, the higher education institutions have the obligation to accept responsibility for all students and to meet the challenge of growing heterogeneity among students (Strømso 1997, Helland 2002).

**Students with dyslexia**
The students’ dyslexia is manifested by variable difficulty with the different forms of language, often including, in addition to problems with reading, a conspicuous problem with acquiring proficiency in writing and spelling.

The definition of dyslexia used in this study is a follows:

Dyslexia is a specific learning disability that is neurological in origin. It is characterized by difficulties with accurate and/or fluent word recognition and by poor spelling and decoding abilities. These difficulties typically result from a deficit in the phonological component of language that is often unexpected in relation to other cognitive abilities and the provision of effective classroom instruction. Secondary consequences may include problems in reading comprehension and reduced reading experience that can impede growth of vocabulary and background knowledge.

(The international Dyslexia Association, 2002)

**Students’ learning strategies and coping strategies**
This paper will focus on the students’ learning and coping strategies. Learning strategies are considered to be any behaviours or thoughts that facilitate encoding in such a way that knowledge integration and retrieval are enhanced. More specifically, these thoughts and behaviours constitute organized plans of action designed to achieve a goal (Weinstein 1988).

The students’ strategies are dynamic and imply consciousness about how they think and act. Coping strategies are considered to be any behaviours or thoughts used to manage stress (Lazarus 1998) in the study situations to compensate for or overcome the dyslectic difficulties.

**ASPECTS OF METHODOLOGY**
The research project has an exploring character and does not have the basis in a specific theoretical model with integrated, clear expectations of evidences and findings. However, it is founded on a firm grasp of the issues being studied (Borgå 1997, Borgå 2005) and unbiased by preconceived notions, including those derived from theory.

**Multiple-case design**
The research has a multiple case design to address the research questions, where every respondent is regarded as a case (Yin 2003). In his definition of case study as a research strategy Yin states:
"A case study is an empirical inquiry that investigates a contemporary phenomenon within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident" (ibid, s. 13)

The use of the case study method is chosen deliberately to cover contextual conditions, believing that they might be highly pertinent to the phenomenon of study. The overall perspective in these cases will include both students with dyslexia and their study environments.

The multiple cases are considered to follow a “replication” logic. An important step in all these replication procedures is the development of a rich theoretical framework. The framework needs to state the conditions under which a particular phenomenon is likely to be found as well as the conditions when it is not likely to be found.

Qualitative approach
One of the distinctive features of qualitative approaches is that they employ words and free forms of expression. The qualitative interviews are often relatively intuitive and not very formalised. But this also positions them strategically to make unexpected discoveries and uncover distinctive features (Befring 2004).

The interviews appeared to be open dialogues in the form of free and flexible conversation rather than guided conversations and structured queries, providing perceived casual inferences. It was, however, sometimes necessary to ask the actual (conversational) questions in an unbiased manner that served the needs of the line of inquiry.

The interviews took place at the university college, and lasted on average 1 hour 25 minutes. The information was registered by using a tape recorder to avoid inaccuracies due to poor recall and interference. To make information from the informants available, it has first of all been necessary to transcribe tape recordings and notes. The entire interviews have been transcribed. The data has then been transferred to an overall, structured level based on the interview guide, starting from identifying special features and phenomena, and then proceeding to find common features that seem to be characteristic.

Interview guide
The informants were given the opportunity to express themselves in a free and natural manner, to tell their stories on their own terms. However, the interviews were planned in detail in the form of an interview guide. The topics/questions were targeted, focusing directly on case study topics. The guide was constructed to avoid bias due to poorly constructed questions, but was in fact merely used as a check list.

Actual issues to bring up were:
- What kind of difficulties and challenges do the students think their dyslexia causes them in their study situation?
- What strategies do they use to master their situation?
- How does Akershus University College attend to their special educational needs?

Other questions were of a more retroactive and proactive character to shed light on the students’ present study situation.

Pilot study
The final preparation for data collection was the conduct of a pilot study. This helped to refine the data collection plans with respect to both the content of the data and the procedures to be followed. The interviews of two former students at TVTE were broader and less focused than the ultimate data collection plan. The narratives of the former students described what they at particular moments in their lives as students and in particular study situations experienced. The pilot study was formative, assisting to develop relevant lines of questions. The aims were to gain an overview, or to test if the formulated questions and problem statements were relevant for an extensive study. It also offered good practice for the interviewer, in being a good listener and remaining neutral, but showing sympathy and tolerance for the answers given and stories told.

Population
The population is the students with dyslexia in TVTE. A letter of introduction was distributed to all the students in TVTE giving information about the study limiting the possibilities to participate to students with documented diagnosis of dyslexia. Seven students got in contact, six were interviewed. It was voluntarily to take part in the study, and all participants were guaranteed full anonymity.

Screening tests
To ensure the documentation of dyslexia at the time of the interviews, all students had to do a screening test of their reading and writing skills. The test is a norm-referenced standardized test for students in higher education. A stanine scaled score with nine units from 1 (low) to 9 (high) is used to describe the results. The students’ scores are all in the 1st and 2nd stanine. These are not proofs of dyslexia, but strong indicators of severe reading and writing disabilities.

SIX NARRATIVES PRESENTED TOGETHER
Due to the guarantee given of anonymity the presentation of results will not contain the individual case narratives, but will contain the cross-case analysis and results. The entire study is thereby orchestrated and coordinated as a single undertaking.

Common features
The specific writing and reading disabilities of the informants create many stressful situations every day. It is characterized by difficulties with word recognition and spelling, secondary by difficulties in reading comprehension and building of written sentences and structures.

The informants experience a great amount of time pressure. They are aware that this will follow them all through their studies and are willing to study hard. They are willing to use their spare time and holidays to succeed.

They all share the same dream and their goal is to become teachers in vocational subjects. This gives them the motivation to carry on.

They have a mental attitude to give their very best to each educational endeavour. They know they may not succeed to display their achievement in learning evaluations that will mirror their efforts and time used studying. They know their learning strengths and weaknesses and are willing to adjust their anticipations.
They all have a network of private supporters, families and friends. The employees at the university college are not mentioned among their supporters.

Theoretically they all say it is important to be open and tell about having dyslexia. But only one of the informants is totally open. The others have informed when necessary where there has been an urgent need to explain. Generally they do not want to tell about or to discuss their learning needs or seek academic assistance. One even feels a sense of victory about not being revealed. Their reasons are different: the fears of being rejected, stigmatised, pitied, felt sorry for, and worst of all the fear of being considered unfit to become teachers.

None of the informants receive any special tuition or study provisions. Two of them say they will ask for it later, if necessary. They express optimism and positive attitudes, and in spite of their difficulties enjoy being students.

**Strategies of learning and coping**

The informants have developed many different strategies of learning and coping to compensate for and overcome their disabilities. It is difficult to be able to indicate how well these coping patterns used by the individual students facilitate learning and help them in their study situation, or are counterproductive in some sense. There are not any notions and evidence about which strategies that are effective and which that are ineffective. The following presentation is, therefore, just based on the students’ narratives joined together.

**To read study literature**

All the informants have difficulties in single word recognition and therefore read very slowly, and secondary get problems with reading comprehensions. They experience great difficulty reading a textbook in spite of the large amount of time and effort they devote to the task. They do not know how to select the main ideas and important details. They treat every sentence as if it were just as important as every other sentence. Not knowing about different text structures or how to identify important information makes reading a textbook an almost impossible task.

They know they cannot read all the literature required and try to select the most essential. They all depend on the lecturers and peers to find the important parts to read. They also try to find alternatives to the textbooks like articles, students’ essays, summaries etc.

To take part in students’ discussion groups offer them good insight and opportunities to discuss subjects that is difficult to read.

None of the informants have used audio books or digital textbooks, but they all express interest in using it. One has actually tried to find some, but has not succeeded. Some have used synthetic speech on the personal computers (PC). Three of them are very satisfied with it, but one claims she will never use it, because she dislikes the synthetic way of speaking.

Most of the students get help from friends and families, when it comes to read through their own essays or written work (correction of errors).

**To attend lectures**
The informants find the lectures important and interesting. But they all have problems listening and taking notes simultaneously. Printed handouts contribute greatly to grasping lectured material. Most of the informants do not take any notes, but choose to listen carefully and rely on memory. Some say they have a very good memory. However, others try to take notes and to copy what is written on white boards during the sessions.

One informant finds making mind-maps helpful. None of them use PC to take notes. Two informants have arranged for fellow students to share their notes with them, whereas others are afraid to ask for such help. None of the informants have asked or want to tape record lectures.

To work in groups with fellow students
The informants find discussions with their fellow students very rewarding. But when it comes to reading and writing tasks, they find working in groups very challenging. Only the student who has been open about her dyslexia seems to be comfortable in groups, even if she too has experienced some major difficulties in the beginning. The main problem for the other informants is the fear of not being good enough, using too much time, misunderstanding or/and expressing themselves badly and spelling poorly.

If possible, the informants prefer to work individually with written tasks. If not, they feel they have to inform the others in the group. Then they can avoid being referents and doing spelling correction, but instead may work with lay-outs or doing parts of the work where they have their strengths.

To speak in plenary sessions
All the informants state they now feel comfortable about speaking in front of an audience. We know from research that many dyslectics are very competent in oral language, but for some the process has been very long. The best situation is when they can prepare themselves and find support in a digital presentation. They all avoid writing on the boards or spontaneously read aloud.

To write essays, reports and exams
Writing seems to cause more stress than reading, perhaps because the product will be read and evaluated by others, and their difficulties thereby become more obvious to others.

All the informants express satisfaction with the options for alternative forms of testing such as the combination of written and oral documentation, and the home exams. All the informants claim that their PC is indispensable and that they would not have managed without it. It is particularly the spell checker and grammar control that is appreciated. However, sentence building and structure in writing still remain problems.

The use of mind maps seems to be a good starting point for some. Others depend on good guidance before they really dare to start the writing. They try to focus on the content and use words they are familiar with. Some are told their language is rather oral and not academic. Only one of the informants uses a pen scanner to move text to their PC. As mentioned previously they rely on friends and family to correct their spelling.

To receive guidance and assessments
All the informants find the guidance very useful and supporting, especially guidance that offers concrete help when it comes to structure and content.
Two of the informants sometimes find the guidance challenging. They think, from earlier experiences, that they easily regard all criticism as negative and often misinterpret the behaviour and language of the tutors.

When it comes to written work, the students find it difficult to show their competence. If the assessments focus more on spelling and sentence structure than content, they find it unfair and unmotivating. But on the whole they are satisfied with the assessments they get, which usually are given both orally and written. They also appreciate that there are no use of grades during the semesters, and that the evaluations are based on both oral and written documentations.

**Pedagogical practice**
The periods of pedagogical practice are experienced as very good. The students do not find that their dyslexia creates any problems, but that it takes its toll when it comes to being prepared and writing reports.

Their best strategies are to be well prepared, have good knowledge about the pupils and their educational needs, be open if necessary, and avoid writing on the boards and reading aloud. They use different kind of teaching methods according to their strengths and present material both in visual/digital and auditory form.

Some of them say they feel somewhat nervous from being observed, but they do not think this has anything to do with their dyslectic problems.

**Other strategies**
When asked if there are other strategies they employ that they have not already mentioned, the students state that it is most crucial to find enough time available to study.

Another strategy lies in good planning. They all find it important to be provided with a detailed course syllabus indicating requirements, deadlines and grade guidelines, and to develop individual study plans, establish priorities and set a time schedule.

Others think it is helpful to establish learning goals, assessing the degree to which these goals are being met, and if necessary, modifying the strategies being used to facilitate goal achievement. They feel they need to have some knowledge about the nature of the tasks they are about to perform as well as the anticipated or desired outcomes.

Finding the best location for seating to be able to pay attention to what is going on at the moment is another challenge. The informants find it necessary to provide a quiet location free from distractions and feel the importance of concentrating all their attention on the college-related tasks.

The informants also find it useful to reframe what has happened and see their study situation from another perspective. They do not expect to get very good grades. Some compare their situation with other people’s situations or diagnosis, like one said: “Dyslexia is not a death sentence”.

To find a balance in their lives they seem to focus on their best abilities in their spare time, and express that management and success in other areas do something with their general self-esteem.
Although these last described strategies may not be directly responsible for knowledge and skill acquisition, they help to create a context in which effective learning can take place and to create and maintain suitable internal and external climates for learning.

**Hopes for the future**

All the informants’ goals are to be teachers in Upper secondary school after graduation. There lies the drive for their motivation. They do not see any barriers getting a job or working as teachers. There will be challenges, but they think they will know how to cope with them. They want to be frank with their pupils and expect young people will accept and find it comforting that others have problems as well, even teachers.

They also think they will be good teachers. From tough experience they know a lot about failure and success, and think they have developed both empathy and intuition due to their dyslexia.

Two of them have more revolutionary ideas about reforming the school system: get rid of the grades, use different methods of teaching, produce audio books, focus on different learning styles, focus on pupils’ strengths and proximate developmental zones etc.

**CLOSING REMARKS**

We have to bear in mind the important roles that universities and schools can play by contributing to the development of socially just and inclusive societies. We should be alert to the ways in which, intended or not, the structures, procedures, practices and culture of the higher education systems can exclude or disadvantage some groups, such as students with dyslexia. Change is necessary if our goal is for these students to achieve educational equity.

Dyslexia is a context related problem which means it is a problem in those situations where writing and reading abilities are needed. It is therefore important that students with dyslexia are met with understanding of their disabilities and offered special arrangements in certain situations, when necessary.

This empirical study can be nothing but a step in the desired direction. It presents ideas and attempts to raise awareness of the issues and dilemmas. The study may potentially lead to advances in understanding, greater interpretive competences and richer practical repertoires for the informants through acts of narrating. Hopefully, it also offers visions and possibilities that may change practice for other students with dyslexia and is a starting point for the discovery of more.

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