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Important notice:

- This fact sheet is provided for the exclusive use of all the people involved in teaching at EPFL (hereafter “teaching staff”) and is not meant to be transmitted to students. Any use outside of this context, any distribution or publication, even partial, is prohibited.
- The goal of this fact sheet is to provide information to facilitate the interaction between EPFL teaching staff and EPFL students with disabilities.
- Teaching staff are free to apply this information according to their teaching context and the learning objectives to be achieved and as long as these measures do not create an advantage for students with disabilities.
- This fact sheet does not invalidate the study arrangements which have been granted by the special needs Commission to students with a disability.

Autism spectrum disorder (ASD)

1. Description of the disability

ASD is a neurological and developmental disorder that is often diagnosed in early childhood. The causes of this disorder are both genetic and environmental. Approximately 1 in 100 people suffer from ASD.

The degree of severity varies from person to person. ASD may or may not be associated with an intellectual disability.

The type of ASD without intellectual disability and without language delay used to be called “Asperger syndrome”. This syndrome is not associated with significant developmental, intellectual or language limitations. It is often referred to as an “invisible” disability because it is not physically apparent. However, the behavior of a person with ASD may be somewhat unsettling or awkward for others and may result in social rejection.

Learning may be acquired through different modalities, such as lectures, series of exercises, working in a laboratory, group work or practical exercises. Each of these modalities implies different social abilities as well as adaptive and communication skills. This also applies to an examination context.

It is therefore critical to be aware of the students’ struggles that are described below and that may appear with varying intensity depending on the context and the person concerned.

ASD entails **persistent deficits in communication and social interaction.**

Concerning verbal communication, students may experience difficulties engaging in and carrying on a conversation and may also speak and express themselves in an unusual way. Pragmatic language skills are negatively impacted: students have difficulty adapting language to a specific context, especially a social context; comprehending implicit messages and making inferences (i.e. coming to and verbalising a conclusion by deriving it from a fact or situation). Any metaphorical messages, allusions, humour or sarcasm can be misinterpreted as affected students have a literal interpretation of language.

Concerning non-verbal communication, students may find it difficult to use and decipher non-verbal behaviour such as facial expressions, glances, gestures, smiles, etc. Their own facial expressions may seem limited (ex. impression of apathy, avoiding eye contact) or inappropriate (ex. smiling in an inappropriate context).

Concerning *social interactions*, habitual mechanism are affected: recognizing emotions (in others and self), knowledge and comprehension of standard social rules, expressing empathy. Students will struggle to comprehend their own and other people's emotions. They will be less able to anticipate other people's behaviour and then adapt their own response. This difficulty in social-emotional reciprocity can lead to an inability to understand how groups operate. Students with ASD may not initiate interactions with peers or professors. Other times, students' social interactions might be relatively appropriate, but often clumsy or incompatible with group dynamics.

- **Restricted and repetitive patterns in *behavior, interests and activities*.**

People living with ASD are often afflicted with *difficult sensory processing* that may involve all five senses and that can seriously interfere with social and cognitive functioning. For example, they may experience increased or decreased sensitivity to noise, light, taste, odor and texture.

ASD is a permanent condition even though some people may be able to compensate for the disability. For example, they may engage in training for specific social skills. Issues with sensory processing can be dealt with by using individualised strategies.

2. Aspects linked to studies

- **Weak points:** processing speed, motor skills (fine and gross), memory (depending on the subject), language, integrating information, attention.
- **Strong points:** visuo-spatial ability, analytical thinking, deductive and sequential reasoning, memory (depending on the subject).

Students may, or may not (depending on their specific problems) and regardless of their intellectual capacities, face the issues described below.

Students' issue	Cause/origin of the issue	What is beneficial to students?
Slower pace of study compared to other students	Linked to decoding verbal and nonverbal information, linked to planning tasks and sensory hypersensitivity	Receiving precise information in short sentences, providing students with information about deadlines well in advance
Trouble paying attention and concentrating	Linked to the continuous effort demanded when deciphering information and to sensory hypersensitivity	Reducing visual and acoustic distractions, taking breaks
Trouble managing time	Linked to the attentional effort demanded when executing and planning tasks	Receiving precise information including time frames so students can prioritise tasks

Students' issue	Cause/origin of the issue	What's beneficial to students?
Being disorganized, trouble establishing an agenda with academic deadlines	Linked to trouble with planning and anticipating tasks	Putting any deadlines in writing
Trouble following instructions and comprehending instructions that are not specific enough	Lacking comprehension of the logic behind the steps to follow and of verbal instructions, trouble comprehending implicit messages	Receiving instructions in short sentences without metaphors and without implicit content
"Freezing" or presenting behavioral difficulties	Linked to an emotional overload generated by the amount of information to process	Encouraging students to take a break and communicating by using simple and short phrases
Trouble handling informal talks, group work and social events	Linked to difficulty in handling social interactions	Explaining to students which approach to use in order to integrate into a group and asking that other students behave in a welcoming manner
Feelings of profound anxiety that may not be obvious to others	Linked to the difficulties inherent to their general condition and to social and academic expectations	Contacting Student Affairs (SAE) who may refer the student to a coach specialized in ASD

The cognitive strong point of people with ASD is their visual processing of information. Therefore, any kind of written support (ex. course material and slides provided before the course, outlines illustrating oral explanations, checklists, conceptual maps, written timetables) will be helpful for students with ASD. These teaching aids and visual supports will allow students to better comprehend the subject matter and render abstract concepts more concrete.

Students with ASD need routine and predictability and might feel distressed when adapting to changing conditions, particularly for practical exercises. If given the opportunity to anticipate change, these students will feel more secure. In case of an unexpected event, providing information as soon as possible and helping students to visualize a change in their schedule can be useful.

Students with ASD need time to adapt to new situations, while also facing the usual changes linked to university studies such as new group dynamics, friendships, love life and complex social interactions on campus (community life, hierarchical relations, etc.). All of these challenges can have an important impact on students' quality of life and their mental health.

For additional information or if one of your students is facing these challenges, please contact sae.amenagements@epfl.ch

For more information:

Conference « Autisme à l'école » (Autism in school), N. Chabane, March 2017, *Vimeo*, <https://vimeo.com/208625721>