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MOTIVATION OF STUDENTS PURSUING THE  
INTERNATIONAL BACCALAUREATE  
DIPLOMA PROGRAMME

MOTIVACE STUDENTŮ V PROGRAMU INTERNATIONAL  
BACCALAUREATE DIPLOMA PROGRAMME



Bachelor thesis

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**Declaration**

I declare that I wrote the Bachelor thesis on the topic: "Motivation of students pursuing the International Baccalaureate Diploma Programme" independently under the expert supervision of my thesis supervisor, and that I have listed all the used materials and literature.

In Olomouc on .....

Signature .....

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# Introduction

High school students are often quite unmotivated. They are in school to suffer through it and then real life can begin. Some dream of going off to university and finally studying only what they enjoy (they will learn the hard way). Others equate high school to a purgatory filled with torment and fire - all they want to do is pass the finals and throw their textbooks into a slightly-out-of-control bonfire in the woods, at least according to the latest teen comedies.

There is a tendency to say that it is the students' responsibility to thrive in school and be up to date with all their assignments. It is their future after all, which is true enough. However, should it not be up to the school to provide a stimulating environment, which will encourage the students to dive into their topics of interest and boost their creativity and motivation? If the students had more autonomy over their learning, would they perhaps be more motivated to do so?

In this thesis, we are going to explore if the structure of a high school programme has any influence on students' academic motivation. Two programmes will be analysed in this thesis: the International Baccalaureate Diploma Programme (IBDP) and the Higher General Examination Programme - *studentereksamen* (STX) Danish high school programme.

This thesis will compare structures of the two high school programmes to see if one is more autonomous than the other. Furthermore, this thesis will compare the academic motivation of students in those programmes, to see if the structure of the programmes and the autonomy they provide makes any difference in the motivation of students.

In addition to this, this thesis will explore the nature of motivation behind the decision to join the International Baccalaureate Diploma Programme, one of the mentioned high school programmes, in order to better understand why adolescents choose this programme rather than the standard high school education provided in their home countries. Lastly, the role of parents in the students' high school programme selection will also be explored in this thesis.

## **THEORETICAL PART**



# 1 Motivation

Motivation plays a crucial role in our daily lives. It is something we experience every day first thing in the morning when we have to get out of bed. To leave such a place of comfort, we can be motivated by a number of factors. For some, it can be the fear of showing up late to work, therefore losing their job and consequently not being able to pay rent and becoming homeless. Some get up early in the morning with the desire to read a new book and expand their knowledge. Then again, some prefer to start their day on an energetic note and exercise. Such motivations shape our everyday actions and experiences. To explore the multifaceted nature of motivation and its impact on our lives, this discussion will draw on the renowned Self-Determination Theory (Ryan & Deci, 2017), its relevance to different motivational factors and their influence on daily routines and behaviours.

## 1.1 Self-Determination Theory

Self-Determination Theory (SDT) is a psychological framework developed by Edward L. Deci and Richard M. Ryan which focuses on human behaviour and the motivation behind it (Ryan & Deci, 2017). The main focus of the theory is on the ways in which psychological needs are satisfied and the role that intrinsic motivation plays in fostering optimal functioning, well-being, and personal development (Ryan & Deci, 2017). One of the cornerstones of the theory is the assumption that humans have an innate need to be curious, self-motivated and committed to personal growth (Ryan & Deci, 2000b).

According to SDT, humans have three basic needs: the need for competence, the need for autonomy and the need for relatedness (Ryan & Deci, 2000c). The need for autonomy pertains to the desire to feel in control of one's own behaviour and goals, the need for competence refers to the desire to interact effectively with one's environment and the need for relatedness concerns the desire to feel connected to others and experience the feeling of being included. These needs are inherent to human nature and can be applied universally across the population, going beyond variables like age, culture or sex (Ryan & Deci, 2000c). Furthermore, the fulfilment of

these needs is crucial for motivation, well-being and personal growth (Ryan & Deci, 2017).

Deci, Vallerand, Pelletier and Ryan (1991) divide motivation into three categories: intrinsic motivation, extrinsic motivation and amotivation. Based on the category of motivation, we can conclude just how self-determined an individual is. If one is intrinsically motivated, then they participate in an activity purely for the enjoyment they experience during that activity, rather than undergoing the activity with the expectation of external rewards (Ryan & Deci, 2000a). With extrinsic motivation, the reasons for participating in a specific activity are often external and have more to do with receiving rewards or avoiding punishment, rather than doing a specific activity simply for the pleasure of it. Behaviour then tends to be regulated by external influences rather than by personal interest (Ryan & Deci, 2000a). In Deci, Vallerand, Pelletier and Ryan (1991) amotivation is described as a state in which an individual lacks motivation or they believe themselves to be incompetent in relation to an activity or a task.

## **1.2 Types of motivation in SDT**

One of the main divisions of motivation in SDT is the division between autonomous and controlled motivation (Deci & Ryan, 2012). Autonomous motivation reflects an individual's genuine interest and enjoyment of the action itself. It can be recognised through sense of choice, volition and personal endorsement of the activity (Deci & Ryan, 2012). On the other hand, controlled motivation is fueled by external pressures or rewards. Individuals undertake a given action because of distinct consequences, which are often seen as rewards or penalties, depending on the consequence (Deci & Ryan, 2012).

According to SDT, autonomous motivation is associated with better performance and well-being, while controlled motivation has been linked to diminished performance and decreased well-being (Deci & Ryan, 2012). Furthermore, links between negative impacts such as depression or anxiety and controlled motivation have also been discovered in the past (Twenge et al., 2010). The division between external (extrinsic) and internal (intrinsic) motivation has been established way before Deci and Ryan dove into motivation research. Already in

1959, Herzberg's Two-Factor Theory described external and internal factors of motivation. However, it was only in 1972 that Deci introduced the idea that extrinsic and intrinsic motivation do not exist separately, but they rather influence each other. Meta analysis of studies conducted in this area showed that when extrinsic motivation is strengthened (for example by the prospect of monetary reward), intrinsic motivation decreases (Deci et al., 1999).

These conclusions were crucial for the field of motivation, as they showed that individuals can experience both intrinsic and extrinsic motivation at the same time, and that these two types of motivation can be heavily influenced by external factors (Deci et al., 1999).

Since intrinsic motivation originates from genuine interest and satisfaction of the task at hand, it is seen as the model for autonomous motivation (Deci & Ryan, 2012). On the other hand, extrinsic motivation is frequently perceived as controlled since it involves engaging in an activity because it results in a specific outcome. However, the distinction between the two cannot be universally applied. Deci and Ryan (2012) argue that extrinsic motivation can also be autonomous if it is properly internalised and integrated with one's sense of self. Therefore, while controlled motivation only refers to non-integrated extrinsic motivation, autonomous motivation includes both intrinsic and well-internalised extrinsic motivation (Deci & Ryan, 2012). In SDT, intrinsic and extrinsic motivation is further divided into several subtypes, which will be addressed in the following paragraphs.

### **1.2.1 Intrinsic motivation**

Intrinsic motivation can be further divided into three subtypes: intrinsic motivation to know, intrinsic motivation toward accomplishments and intrinsic motivation to experience stimulation (Vallerand et al., 1992).

*Intrinsic motivation to know* refers to the motivation one experiences when they are engaging in activities simply for the pleasure they experience from learning them (Vallerand et al., 1992). This subtype refers to motivation to search for new knowledge, to explore past known horizons (Vallerand et al., 1992). An example of the intrinsic motivation to know could be a high school student who engages in their interest in ships by visiting a maritime museum.

*Intrinsic motivation toward accomplishments* refers to the motivation to surpass oneself (Carbonneau et al., 2012). Individuals who experience this type of motivation are driven by the satisfaction they receive from overcoming challenges and accomplishing increasingly difficult tasks (Carbonneau et al., 2012). One could say it is more about the journey rather than the destination for those who are driven by this type of motivation. A student who decides to make a hundred paper flowers, even though the assignment only asked for ten, simply to experience pleasure from accomplishing such a difficult task, can be an example of someone who is driven by the intrinsic motivation toward accomplishments.

*Intrinsic motivation to experience stimulation* refers to a scenario in which one participates in an activity in order to experience the sensory and emotional stimulations that arise from such an activity (Carbonneau et al., 2012). Individuals driven by this motivation take part in an activity simply for the pleasure and excitement it provides. Students who join a Model United Nations debate club just to experience the rush of a heated debate can serve as an example of people who are driven by the intrinsic motivation to experience stimulation.

### **1.2.2 Extrinsic motivation**

In the past, extrinsic motivation has been described as impoverished (deChams, 1968, as cited in Ryan & Deci, 2000a) compared to the deep and personal intrinsic motivation. However, SDT presents several subtypes of extrinsic motivation and argues that while some subtypes are quite weak compared to the intrinsic kind of motivation, others are strong and show engaged, autonomous states (Ryan & Deci, 2000a). Extrinsic motivation can be divided into four subtypes which vary in terms of their level of autonomy (Ryan & Deci, 2000a).

*External regulation* refers to the most external form of extrinsic motivation. Behaviour is conducted in order to satisfy external requests or comply with societal pressures (Burgueño et al., 2017). A conditional reward which relies on the completion of a task (salaries for example) where an individual does not experience pleasure in completing the task whatsoever but does it with the promise of getting paid, can serve as an example of externally regulated behaviour.

*Introjected regulation* is a type of motivation where the individual starts to internalise some of the external elements, but the internalisation is not truly self-determined, since it only consists of previous external circumstances (Vallerand et al., 1992). An individual only engages in the given behaviour in order to avoid guilt or anxiety (Ryan & Deci, 2000a). Adolescents who only call their grandmother in order to prevent the feeling of guilt from not reaching out can be an example of a behaviour motivated by introjected regulation.

*Identified regulation* is more autonomous than the previously mentioned subtypes. In this subtype, the individual has recognised the personal significance of the activity and accepted it as their own (Ryan & Deci, 2000a). A way in which identified regulation manifests could be a student who wants to build a career abroad and needs to learn a new language, therefore doing it for their future rather than for the enjoyment of studying a new language.

*Integrated regulation* represents the most autonomous form of extrinsic motivation. These individuals have incorporated the behaviour into their sense of self and aligned it with their values (Burgueño et al., 2017). For example, integrated regulation is the motivation when an adolescent is fully committed to a healthy lifestyle and truly believes that exercise, a balanced diet and an adequate amount of sleep improves their well-being in the long run.

### **1.2.3 Amotivation**

Deci and Ryan introduced a third motivational construct in their SDT called amotivation. Amotivation can be defined as a state in which an individual lacks an intention to act (Ryan & Deci, 2000a). These individuals are not motivated intrinsically or extrinsically (Vallerand et al., 1992). The state may arise from undervaluing an activity, believing it will not produce the desired goal or feeling incapable of carrying it out (Ryan & Deci, 2000a). An example of amotivation can be a student who was given an assignment they perceived as meaningless, and now they struggle to complete it, wondering what is the point of it all. They do not see how this assignment could be beneficial for their career or further studies and they feel like they do not have any control over the situation.

### **1.3 SDT and motivation for learning**

In certain learning environments, students tend to be more proactive, pick up new skills and assist their peers more than in others. This phenomenon can be related to the three fundamental needs as they were described by Ryan and Deci (2000c): the need for competence, the need for autonomy and the need for relatedness. If those needs are met, then individuals have space to feel motivated and grow as human beings (Ryan & Deci, 2017). In other words, students need to relate to their fellow learners, they need to feel competent enough to do the work that is asked of them, and they need to feel like they have a choice in the matter in order to produce their best work.

It has been repeatedly shown that students who have intrinsic motivation towards learning show higher well-being scores as well as more success in academic settings (Howard et al., 2021). Autonomy, being the basic need it is, plays a key role in academic intrinsic motivation, and if provided to the students, it can enhance their learning capabilities (Córdova & Lepper, 1996). Motivational embellishments that raise the levels of autonomy, such as personalisation and choice, lead to higher levels of academic intrinsic motivation and to overall better learning outcomes among students (Córdova & Lepper, 1996).

Reeve & Cheon (2021) published a comprehensive review which includes results from 51 studies focused on autonomy-supportive teaching. This review showed that autonomy-supportive teaching is based on the principles of self-determination theory and aims to support intrinsic motivation and internalisation in students. It has been linked to increased engagement, self-regulated learning and higher academic achievement among students (Reeve & Cheon, 2021). The review mentions the Self-Determination Theory by Ryan & Deci (2000c) as the key theoretical basis for autonomy-supportive teaching (Reeve & Cheon, 2021).

Regarding the need for competence, it has been shown that perceived competence is positively correlated with intrinsic motivation (Deci & Ryan, 1985). The field of education is no exception to this trend. The higher competence one believes to have, the more intrinsically motivated for learning they tend to be (Barić et al., 2014). Here we can ask the question of whether the educational system should

be structured as a competitive one, or rather be focused on collaboration. Vallerand et al. (1986) illustrated that when a child perceives themselves as the one on the “losing team”, their perceived competence drops alongside their intrinsic motivation.

In environments that support relatedness, people are more likely to show their inherent capacity to learn and develop (Ryan & Powelson, 1991). Therefore, if students feel like they can identify with others and feel like they have a sense of belonging, the likelihood of academic success should increase. Relatedness is therefore an important factor that needs to be considered when fostering an environment that supports academic intrinsic motivation and engagement in learning.

## **2 Adolescence and academic motivation**

Adolescence ranges from years ten to nineteen and can be described as a period of life between childhood and becoming an adult (World Health Organization, 2019). Many crucial decisions are made in this life phase. Oftentimes, it is this period that sets up an individual's trajectory for their future. The academic motivation of adolescents is a rather complex construct influenced by a wide range of intrinsic and extrinsic variables. SDT by Ryan and Deci (2000b) provides a detailed guide for understanding the different types of motivation and the factors that influence them. Some of the key factors identified to influence academic motivation in adolescents are gender and personality (McGeown et al., 2014; Vallerand & Bissonnette, 1992).

### **2.1 Gender and academic motivation in adolescence**

Academic intrinsic motivation tends to decrease in adolescence (Gnambs & Hanfstingl, 2015). An active student can turn into a demotivated one in a relatively short span of time. While there are many variables at play in this phenomenon, there are certain factors one can follow to predict how academic intrinsic motivation is going to unfold in adolescence.

Gender was identified as one of the key factors that influence motivation to learn in adolescents (Vallerand & Bissonnette, 1992). Girls in high school were found to have higher intrinsic motivation to learn compared to the boys (Barkoukis et al., 2008; Vallerand & Bissonnette, 1992). Furthermore, boys were found to have higher amotivation compared to the girls (Barkoukis et al., 2008). Compared to the male students, female students were found to be less externally regulated and more identified and integrated (Vallerand & Bissonnette, 1992). Female students also showed greater levels of behavioural persistence compared to the male ones (Vallerand & Bissonnette, 1992).

This trend has been found across multiple age categories. Ranging from elementary school children to junior college students and even senior citizens, women from all of those age groups appear to be more self-directed than men (Vallerand & Bissonnette, 1992).



## **2.2 Personality traits and academic motivation in adolescence**

Personality traits play an important role in shaping one's academic motivation (Müller et al., 2006). Taking the personality of students into consideration in an academic setting may provide a deeper understanding of the perceived learning environment from the students' point of view (Müller et al., 2006). The Big Five personality framework has been repeatedly studied in relation to academic motivation, revealing links between certain personality traits and types of motivation (Komarraju & Karau, 2005).

### **2.2.1 The Big Five personality framework**

The Big Five personality model consists of the following personality traits: agreeableness, extraversion, emotional regulation (neuroticism), openness to new experiences and conscientiousness (Costa & McCrae, 1992). These traits go under the acronym OCEAN.

The qualities of being open to new experiences include creativity, sense of adventure and openness to emotions and behaviours (Cherry, 2023). People with high openness to new experiences like to broaden their horizons, both intellectually and physically, and they often go outside their comfort zone (Cherry, 2023). Conscientiousness can be described by characteristics like competency, diligence and thoughtfulness. Individuals that have high conscientiousness tend to be organised and mindful of the deadlines (Cherry, 2023).

Qualities like trustworthiness and tender-heartedness are examples of being agreeable. Highly agreeable people are good team players and tend to be well liked by others (Lim, 2023). Extraversion can be described by the following characteristics: assertiveness, friendliness and gregariousness. People who have high extraversion make friends easily and often "thrive in social situations and feel comfortable voicing their opinions" (Lim, 2023, Extraversion section).

Lastly, characteristics like anxiety, insecurity or low self-regard are used when describing someone neurotic (Lim, 2023). Those who have high neuroticism tend to experience mood swings more often. Individuals who are high on neuroticism are "prone to excessive sadness" (Lim, 2023, Neuroticism section).

### **2.2.2 The Big Five and academic motivation**

Out of the Big Five personality traits, conscientiousness has been found to be the strongest predictor of academic intrinsic motivation amongst adolescents (McGeown et al., 2014). This can be explained by the conclusion that conscientious students are more likely to be self-motivated, since they are achievement-oriented and academically self-disciplined (McGeown et al., 2014). Furthermore, pupils who scored high on openness to new experiences also showed higher levels of academic intrinsic motivation. Higher scorers for this attribute tend to be more intellectually curious, which suggests that they may be more eager to learn (McGeown et al., 2014). The findings mentioned above are consistent with the conclusions drawn by Komarraju et al. (2009), who were focusing on the college students. This further confirms that personality can be a useful indicator regarding predicting academic intrinsic motivation (McGeown et al., 2014).

## **3 High school study programmes**

Choosing a high school programme is not an easy task. Already in their early teens, we ask adolescents to choose the direction in which their future is going to lead. With the abundance of options nowadays, the task of finding the perfect school can prove challenging (Taylor & Woollard, 2003). Various factors come into play when choosing the best high school programme. Some of those factors, like socioeconomic factors and the role of parents, will be discussed in the sections below. This chapter will also introduce two high school programmes, the International Baccalaureate Diploma Programme (IBDP) and the Higher General Examination Programme - *studentereksamen* (STX).

### **3.1 Role of parents in programme selection**

Parents play an important role when it comes to adolescents and their high school programme choices. In a survey made in the Czech Republic from 2021 to 2022, participating high schoolers reported that the opinion of their parents was the second most important aspect they considered when they were choosing their high school programme (Krausová, 2022). The only aspect that high schoolers considered to be more important was their own interest in the subject (Krausová, 2022).

However, another survey made in the Czech Republic in 2023 suggests that listening to the opinion of parents when choosing a high school programme might not be beneficial for the adolescents (Galová, 2024). According to the survey results, only 47% of high schoolers in their final year said that they would choose their high school programme again if they had the choice. Forty percent of the high school students in their final year reported that they would choose a completely different high school programme if they could go back in time. Pupils who were dissatisfied with their high school programme reported that they mostly listened to their parents regarding the programme selection (Galová, 2024).

## **3.2 Role of socioeconomic factors in programme selection**

Socioeconomic factors, such as perceived salary and job prospects, play an important role in adolescents' decision on which high school programme to attend. A study by Trhlíková (2013) showed that perceived job prospects were the second most frequent reason for selecting a given high school programme, beaten only by the pupils' interest in a specific field of study. Perceived salary was the fourth most frequent reason (Trhlíková, 2013).

Results of a survey conducted in 2023 amongst Czech high school students in their final year showed that perceived salary was the fifth most frequent reason why pupils chose their high school programme (Galová, 2024).

## **3.3 International Baccalaureate Diploma Programme (IBDP)**

A globally recognised educational framework called the International Baccalaureate Diploma Programme (IBDP) was created to support the holistic development of students between the ages of 16 and 19 (International Baccalaureate Organisation, 2009). This programme is taught in over 160 countries around the world and can be studied in three languages: English, French and Spanish. Offering an alternative high school education, the programme was created in 1968 in Geneva, Switzerland by the International Baccalaureate Organisation. The goal was to offer a demanding curriculum with an emphasis on critical thinking, intercultural comprehension and community service (International Baccalaureate Organisation, 2009). This programme spans over two academic years (International Baccalaureate Organisation, 2023b). The popularity of the IBDP is increasing, as seen in how the number of the IBDP taught worldwide grew by 34.2% between 2018 and 2022 (International Baccalaureate Organisation, 2023b).

### **3.3.1 Structure of the IBDP**

The IBDP's structure consists of two main components, the Diploma Programme Core and six subject groups (International Baccalaureate Organisation, 2017). The six subject groups include *Studies in language and literature*, *Language*

*acquisition, Individuals and societies, Sciences, Mathematics and the Arts.* An overview of offered subjects can be found in Table 1. Students must select one course from each of the first five categories. The sixth subject may be any subject from the first five groups or an arts course from the sixth group. Some courses will be taken at Higher Level (HL), while others will be taken at Standard Level (SL). Subjects at Standard Level require 150 teaching hours, while Higher Level requires 240 teaching hours (International Baccalaureate Organisation, 2017).

Table 1: List of subjects offered in the IBDP

Subject group	Offered subjects
Studies in language and literature	Language A: literature Language A: language and literature Literature and performance
Language acquisition	Classical languages Language Ab initio Language B
Individuals and societies	Business management Digital society Economics Geography Global politics History Language and culture Philosophy Psychology Social and cultural anthropology World religions
Sciences	Biology Chemistry Computer science Design technology Environmental systems and societies Physics Sports, exercise and health science
Mathematics	Analysis and approaches Applications and interpretation
Arts	Dance Film Music Theatre Visual arts

*Note.* The data presented in Table 1 were gathered from the International Baccalaureate Organisation (2023, November 24). *DP Curriculum*.

<https://www.ibo.org/programmes/diploma-programme/curriculum/>

In addition to that, students are required to complete the following components established in the Diploma Programme Core: the Extended Essay (EE), Theory of Knowledge (ToK) and Creativity, Activity and Service (CAS) (International Baccalaureate Organisation, 2017). In ToK, students have to consider the nature of knowledge and knowledge acquisition (International Baccalaureate Organisation, 2017). The EE is not a subject per se, but rather an independent research assignment. Students have to write an essay of up to 4000 words in any given subject (Tripathi, 2023). The EE can also be based on a collaboration between multiple subjects (Tripathi, 2023).

In order to fulfil the CAS requirement, students have to carry out tasks related to the three areas making up this component (International Baccalaureate Organisation, 2023a). In the *activity* part, students have to undertake physical activities, usually in relation to another IBDP subject (International Baccalaureate Organisation, 2023a). For example, one of the science classes a student can choose is called “Sports, exercise and health science” (Zurich International School, n.d.). Extracurricular assignments taken in this class would count toward the activity requirement of CAS.

The *service* part refers to voluntary activities that contain some kind of a learning opportunity for the student (World Schools, 2024). Pupils are meant to learn the importance of personal freedoms and understand the dignity everyone deserves to be treated with (World Schools, 2024). Students can for example choose to work with non-governmental organisations such as the Red Cross or Amnesty International. Organising a charity bake sale or tutoring another student for free would also count towards completing the curriculum requirements.

The *creativity* requirement can be fulfilled in various ways. Here, students partake in an activity involving creative thinking (International Baccalaureate Organisation, 2023a). Students have to keep a CAS portfolio, where they have to document all of the projects and tasks they have done, in addition to signatures from their supervisors (International Baccalaureate Organisation, 2023a). Taking part in a school play, founding a new school club or reinventing the school’s vision board are just a few examples of activities that would fulfil this requirement.

## 3.4 STX

The Danish high school programme *studentereksamen* (STX), also known as the Higher General Examination Programme, is a full-time three-year high school programme (Ministry of Children and Education, 2022). It is offered at 146 schools in Denmark and can only be studied in Danish (European Commission, 2023). Provided by upper secondary schools (*Gymnasium* in Danish), the STX curriculum focuses on improving students' general knowledge in the social sciences, natural sciences, and humanities in order to better prepare them for higher education (Ministry of Children and Education, 2022).

### 3.4.1 Structure of the STX

The structure of the STX is divided into a foundation course and a specialised study programme (Ministry of Children and Education, 2022). The foundation course is three months long and when students successfully complete it, they get to continue their studies in a specialised study programme, which spans over the next two years and nine months. *English, Mathematics, Danish* and *Social Sciences* are mandatory subjects in the foundation course, in addition to an introductory course on the basic knowledge of languages and natural sciences. Subjects included in the chosen specialised study programme are also part of the foundation course (Ministry of Children and Education, 2022).

After a student completes the foundation course, they pursue their chosen specialised area of study. Specialisations can be within the areas of *Languages, Science, Social Science* or *Arts* (European Commission, 2023). Every school is required to provide students a choice of eighteen standardised programmes (Ministry of Children and Education, 2022). Each specialised study programme includes two to three specialised subjects (European Commission, 2023). Subjects are taught at three varying levels - A, B and C - where A corresponds to the highest number of teaching hours and C corresponds to the lowest number of teaching hours. Outside of the chosen specialised study programme, students must choose a number of elective courses. In their final year of the STX, students must write a core



assignment in which they are required to combine knowledge from at least two specialised study subjects (European Commission, 2023).

Regardless of what specialised study programme a student chooses, they are required to have the following 12 compulsory subjects (described in Table 2) as part of their studies.

Table 2: List of compulsory subjects in the STX

Subject	Level
Danish	A
English	B
History	A
Physics	C
Classical studies	C
Physical education (PE) and sport	C
Artistic subject (choice between Visual arts, Theatre, Music or Media studies)	C
Mathematics	B (C level is possible if the student has 3 foreign languages or more)
Religion	C
Second foreign language	A/B (if the student chooses a second foreign language on beginner level, it has to be on A level)
Social sciences	C
Biology/Informatics/Chemistry (at least 2 out of the 3 courses)	C

*Note.* The data presented in Table 2 were gathered from the Ministry of Children and Education. (2022, October 4). *The Higher General Examination Programme (stx)*. UVM. <https://eng.uvm.dk/upper-secondary-education/national-upper-secondary-education-programmes/the-higher-general-examination-programme--stx->

The choice of second foreign language is between *Spanish* advanced B or beginner A, *German* advanced B, *French* advanced B and *Russian A, Italian A and Chinese A* (European Commission, 2023; Ministry of Children and Education, 2022).

### **3.5 Comparison of autonomous learning in the IBDP and the STX**

As previously established, autonomy lies in having the opportunity to choose and being in control of one's own goals (Ryan & Deci, 2000c). In a school setting, the amount of autonomy a student has in their education could be assessed by the measure of flexibility they have in choosing and scheduling their subjects. Autonomous learning, however, covers more than just the management of one's schedule and subjects (Horváth, 2007). It contains critical thinking, planning, assessing and reflection. There needs to be an intentional effort on the part of the learner to continuously monitor their own learning process (Horváth, 2007). Teaching that is supportive of such autonomous learning has also been shown to correlate positively with higher engagement and increased self-regulated learning of students (Reeve & Cheon, 2021).

In terms of subject choices, the IBDP is more autonomous than the STX due to its focus on a broader and more flexible range of subjects. IBDP students can choose from any of the courses in the six groups and thus do not have any obligatory classes amongst the six (International Baccalaureate Organisation, 2017). Furthermore, students have the flexibility of choosing which subjects they want to study at HL and which at SL. In the IBDP, students are allowed to have a minimum of three and a maximum of four subjects at HL (International Baccalaureate Organisation, 2017).

In contrast, the STX has a more fixed set of mandatory subjects, where students have to take at least 12 specific mandatory subjects throughout their course of studies (Ministry of Children and Education, 2022), which limits their autonomy and flexibility regarding course selection. Students also have limited flexibility when picking the level at which they will study their courses, since the levels of courses varying from A to C are usually predetermined by the eighteen specialised study programmes the STX consists of (European Commission, 2023).

In addition to that, the core parts of the IBDP - the ToK, the EE and the CAS programme - are specifically intended to encourage autonomous study, critical thinking and self-directed engagement regarding not only learning, but also service-oriented activities (International Baccalaureate Organisation, 2023c). This creates a focus on developing a comprehensive combination of skills and traits that promote independent thinking and self-directed learning. The IBDP therefore differentiates itself from the STX programme, which does not contain any subjects similar to those in the core of the IBDP.

Additionally, the IBDP is more autonomous in terms of language of instruction compared to the STX. The IBDP is offered in three working languages: French, Spanish and English (International Baccalaureate Organisation, 2014). The IBDP also provides services and documents in other languages they consider to be strategically important, also known as access languages in the IBDP (International Baccalaureate Organisation, 2014). Under some restrictions, the IBDP also allows schools to administer its programmes in languages other than the three working languages (International Baccalaureate Organisation, 2014). In comparison, the STX can only be studied in Danish (European Commission, 2023).

## **EXPLORATORY PART**

## 4 Research problem

In this thesis, the nature of academic motivation of high school students in two different high school programmes is explored. The goal is to find out if the IBDP students and the STX students differ in the nature of their academic motivation, and if so, what variables might play a role in that.

In the previous section of the thesis, a theoretical foundation was illustrated, showing how high school students who are taught with a more autonomous approach might be more intrinsically motivated to learn. Reeve & Cheon (2021) illustrated that autonomy-supportive teaching is linked to increased engagement of students in classes, higher academic achievements of pupils and increased self-regulation of learning. Their review uses the Self-Determination Theory by Ryan & Deci (2000c) as the key theoretical basis for autonomy-supportive teaching. In the review, SDT is used to demonstrate the meaning of autonomy and its importance in learning (Reeve & Cheon, 2021).

Areepattamannil et al. (2011) conducted a study comparing intrinsic motivation, extrinsic motivation and academic achievement between Indian high schoolers in India and Indian immigrant adolescents in Canada. The study used SDT by Ryan & Deci (2000c) as a key theoretical basis for intrinsic and extrinsic motivation. Results from the Academic Motivation Scale (AMS) - High School version by Vallerand et al. (1992) showed that Indian immigrant adolescents in Canada have higher academic intrinsic motivation than Indian students in India (Areepattamannil et al., 2011). Higher academic intrinsic motivation also corresponded to a higher academic achievement. Recommendation for Indian high school classes to become more autonomy supportive was made in this study (Areepattamannil et al., 2011).

Despite the IBDP's worldwide presence, studies where the IBDP students would be compared to students of other high school programmes in terms of their academic motivation are lacking. Based on this situation, the aim of our research was decided. The exploratory part of this thesis will focus on the results of a research that was conducted on precisely this topic. We are exploring which programme has more intrinsically motivated students in terms of academic motivation, whether that is the IBDP or the STX programme.

The following research questions were established for this research:

**RQ1: To what extent do the IBDP students differ from students pursuing the STX (Danish high school programme) in terms of their intrinsic and extrinsic motivation?**

**RQ2: What is the most frequent type of motivation (in terms of intrinsic motivation, extrinsic motivation and amotivation) among the IBDP students?**

Furthermore, we are asking whether there are any gender differences between the types of academic motivation found in high school students. We also explore other variables that might affect academic motivation such as personality or perceived relatedness.

Lastly, two areas providing deeper insight into students' academic motivation are being explored in the qualitative part of the research: the role of parents in participants' high school programme choice and the reasons behind students' decision to join the IBDP.

## 5 Type of research and used methods

Given the nature of this project and the formulation of research questions, a mixed methods research approach was chosen. This was done in order to understand the nature of motivation more deeply and from different angles. Mixed methods research combines parts of quantitative and qualitative research methodologies in order to reach a deeper understanding of the topic at hand (Schoonenboom & Johnson, 2017). By bridging the gap between the quantitative and qualitative paradigms, mixed methods research gives a flexible and inventive manner to handle research issues and produces more thorough results (Johnson & Onwuegbuzie, 2004).

Mixed methods research has several strengths. It allows the researcher to establish a greater range of research questions, since the research is not associated solely with one approach or method (Johnson & Onwuegbuzie, 2004). Also, weak points of a specific method used in the research can be addressed by adding another method with attributes that will balance out the weaknesses. Lastly, the conclusion made from mixed methods research often has more weight to it, as findings from both qualitative and quantitative parts of the research are combined to support it (Schoonenboom & Johnson, 2017).

The main weaknesses of mixed methods research are that this kind of research is often costly and quite time-consuming (Johnson & Onwuegbuzie, 2004). This is given by the fact that it is difficult to carry out this research with only one researcher, and therefore additional force needs to be hired. Also, the researchers working on this type of research often need to get familiar with a plethora of methods and designs, which can take up a lot of time (Johnson & Onwuegbuzie, 2004). The methodological stance in this project is mostly quantitative, since the research questions, especially *RQ2*, aim to gather data from a large sample of participants. Additional information required to have a deeper understanding of the research topic was gathered using qualitative methods.

For the purpose of this research project, concurrent triangulation design was used. Concurrent triangulation design is one of the mixed methods research designs (Georgia State University Library, 2023). It allows the researcher to collect both quantitative and qualitative data at the same moment. Each dataset is analysed on its

own, and the quantitative and qualitative results are then compared to each other (Georgia State University Library, 2023).

As was established above, mixed methods research contains both quantitative and qualitative methods. Those methods used in the research project can be found in the following sections.

## **5.1 Quantitative methods**

In this section, the three methods administered to high school students participating in the research are described. Academic motivation was measured according to the AMS - High School version (Vallerand et al., 1992). Personality traits were explored according to the Mini International Personality Item Pool (Donnellan et al., 2006). Subjective social status was mapped out by the MacArthur Scale of Subjective Social Status - Youth Version (Goodman et al., 2001). In this section, the hypotheses set for the quantitative part of the research are also listed.

### **5.1.1 Academic Motivation Scale - High School version**

To explore the academic motivation of high school students, the Academic Motivation Scale - High School version by Vallerand et al. (1992) was used. Originally published in French under the name *Échelle de Motivation en Éducation*, it consists of 28 items (Vallerand et al., 1992). The scale is based on the Self-Determination Theory by Ryan & Deci (2000c) dividing the 28 items into seven subscales that measure different types of motivation. The three main subscales are the ones measuring extrinsic motivation, intrinsic motivation and amotivation (Vallerand et al., 1992).

The subscale exploring extrinsic motivation is further divided into three scales: extrinsic motivation (introjected), extrinsic motivation (identified) and extrinsic motivation (external regulation) (Vallerand et al., 1992). The subscale that focuses on intrinsic motivation is divided into three subscales as well. Those are intrinsic motivation (to know), intrinsic motivation (toward accomplishment) and intrinsic motivation (to experience stimulation).



The questionnaire is introduced by a single question: *Why do you go to school?* Under this question, respondents find 28 items taking the form of statements that they need to answer (Vallerand et al., 1992). Each subscale has 4 items, and each item is measured according to a Likert Scale ranging from 1 to 7, with 1 meaning *does not correspond at all*, 2-3 *corresponds a little*, 4 *corresponds moderately*, 5-6 *corresponds a lot* and 7 meaning *corresponds exactly* (Vallerand et al., 1992).

### **5.1.2 Mini International Personality Item Pool (Mini - IPIP)**

The Mini IPIP scale is a 20 item short version of the notorious International Personality Item Pool-Five-Factor Model measure. Developed by Donnellan et al. (2006), it measures the Big Five factors of personality: neuroticism, agreeableness, openness to new experiences, extraversion and conscientiousness. Each factor is measured by 4 items in the scale. Every item has a form of a statement and is answered on a Likert Scale ranging from 1 to 5, with 1 corresponding to *strongly disagree*, 2 *somewhat disagree*, 3 *neither agree or disagree*, 4 *somewhat agree*, 5 *strongly agree* (Donnellan et al., 2006).

This method was administered in order to measure the personalities of the respondents, since it has been shown in the theoretical part of the thesis that certain personality traits, such as conscientiousness and openness to new experiences, have been positively correlated with academic intrinsic motivation (McGeown et al., 2014). Therefore, the results from the Mini IPIP scale can help us understand the differences between students regarding their academic motivation.

### **5.1.3 MacArthur Scale of Subjective Social Status - Youth Version**

The MacArthur Scale of Subjective Social Status - Youth Version was developed by Goodman et al. (2001). It is a two-item scale that measures how an adolescent views the standing of their family in society as well as the adolescent's own standing in their school setting (SPARQTools, n.d.). Both items on the scale are ladders. Each ladder comes with its own set of instructions: the first ladder asks the respondent to rank where they think their family fits in their country's society. The second ladder asks the respondent to highlight where they think they fit based on

the social standing they have in school. Each ladder has 10 rungs, with 1 being the lowest rung and 10 being the highest, best fitting rung (SPARQTools, n.d.).

The first ladder deals with the socioeconomic status of the student's family. This includes factors such as the education of their parents and their income (SPARQTools, n.d.). The second ladder explores the student's perceived standing in their high school. The ladder instructs the student to consider the peers with the highest level of respect, grades and social standing. The pupil is then asked to consider the people with low respect and low social standing (SPARQTools, n.d.). This ladder can serve as an indicator to show how well the student relates to their peers and environment.

This scale was administered in order to explore the students' perceived social status, both in society and in their high school setting. Knowing how the students perceive their standing, especially in their school setting, can help us to understand just how well they relate to their peers and learning environment. It has been shown that people are more likely to show their inherent capacity to develop and learn in environments they can relate to (Ryan & Powelson, 1991). Therefore, in order to understand the students' motivation for learning on a deeper level, it is important to know just how well they relate to their surroundings.

The scale was slightly adjusted for the purposes of this research. The original instructions for the second ladder ask the participant to: "Imagine that this ladder pictures how American society is set up" (SPARQTools, n.d., first ladder) In order to fit better for the target population of the research project, this sentence was changed to: "Imagine that this ladder pictures how society in your country is set up."

#### **5.1.4 Hypotheses for the quantitative part**

For the quantitative part of the project, the following hypotheses were set:

**H1:** The IBDP students have higher intrinsic motivation rates for learning compared to the STX students.

**H2:** Women in their teenage years have higher intrinsic motivation rates for learning than men in their teenage years.

## 5.2 Qualitative methods

For the qualitative part of the research, the collective case study approach was chosen. The collective case study approach involves the study of multiple cases, which can be individuals or events (Creswell, 2013). Such an approach is essential for gaining a comprehensive understanding of complex phenomena, as it allows the researcher to illustrate the studied issue from various perspectives (Creswell, 2013).

Such an approach was chosen due to the nature of the studied population and the established research questions. Since the aim of this research was not to create a new theory but instead to understand the nature of students' academic motivation, this method seemed like the most logical approach. When it comes to specific methods of gathering qualitative data, semi-structured interviews and unstructured observation were used.

### 5.2.1 Semi-structured interviews

Semi-structured interviews are a qualitative research technique and combine a predetermined set of open-ended questions with the freedom to explore relevant lines of enquiry throughout the conversation (Jamshed, 2014). Because participant responses can inform future research questions, therefore contributing to a more thorough understanding of the subject, semi-structured interviews are especially helpful for answering exploratory research questions (Creswell, 2013).

One of the main advantages of semi-structured interviews is the possibility of having a focused interview while also allowing the researcher to explore relevant areas that may come up during the interview (Adeoye-Olatunde & Olenik, 2021). This can further improve comprehension of the topic. Using semi-structured interviews provides us with knowledge that cannot be determined only from quantitative data, but when this knowledge is combined with the quantitative data, as in a mixed methods approach, it can be utilised to deepen the findings of the latter (Adeoye-Olatunde & Olenik, 2021).

The structure of the interview followed the outline laid out by Ferjenčík (2008). He divides the interview process into the *preparatory* part, the *introductory* part, the *central* part, the *concluding section* and the *analysis of the interview*.

In the preparatory part of the interview, three main questions - *how, what about and with who* - were answered, and with these answers in mind, the first set of questions was drafted. These questions were later modified to be better suited for the aim of the project and its target audience. Other details, such as the estimated duration of the interview and a proper place to conduct it, were considered.

In the introductory part of the interview, the participants were informed about the aims of the research project and about the interview process. The participants were also briefed about the fact that the interviews will be recorded for the purpose of analysing the data. Furthermore, they were informed how the data gathered from the interviews will be analysed and stored, in addition to being told about their rights regarding the manipulation of the collected data and the possibility of withdrawal from participation in the research project.

The central part of the interview contained the prepared questions for the participants. The aim of this part of the interview is to get the “key information” (Ferjenčík, 2008, p. 180). In order to collect such information with the semi-structured interview, the researcher has to find a balance between asking the prepared questions and realising the potential in the participants’ answers, which might require the researcher to cut some prepared questions or to introduce new ones in the moment (Ferjenčík, 2008). All the prepared questions in the semi-structured interview were created with consideration of the Self-Determination Theory by Ryan & Deci (2000c) and the Academic Motivation Scale - High School version by Vallerand et al. (1992). These two theories served as the theoretical foundation based on which the questions in the central part of the interview were drafted.

For the central part of the interview, an outline dividing the prepared questions into five sections was created. The first section contained questions that were meant to explore the nature of the academic motivation of the participant, with the focus on whether their motivation was more intrinsically or extrinsically leaning. Given the aim of the research project, the questions were mainly targeted to explore motivation towards learning and the participants’ desire to know. The questions in this section were as follows:

1. Why do you go to school?
2. What led you to choose this high school program? What aspects did you consider when choosing your high school programme?
3. What role did your parents play in your high school programme selection?
4. What does a standard high school education look like in your home country?
5. What do you plan to do with this degree?
6. What motivates you to do your school work?
7. What demotivates you when it comes to school work?
8. Do you ever research topics you discuss in class after class? Why do you do that?

The second section of the central part contained questions focused on the autonomy of the participant in relation to their school work. For the purpose of this research project, the definition of autonomy that is used is the one by Ryan & Deci (2000c) mentioned in the theoretical part. The questions in this section were as follows:

9. Do you prefer to have strict deadlines you have to follow, or would you rather have the whole study period to do the work, so you can decide yourself when you are going to complete it?
10. When given a writing assignment, do you prefer a free choice of topic or fixed instructions? Why?
11. Would you rather build your own schedule, knowing you will have to pick and choose between subjects, or would you rather be given a fixed schedule, where you don't have to think about it at all?
12. How do you find essay writing exams?

The third section of the central part had questions focused on perceived competence in relation to school work. The questions in this section were as follows:

13. To what extent do you feel competent to do your school work?
14. How do you find the workload in this programme? (Is it challenging for you?)

The fourth section of the central part of the interview contained questions targeting the perceived relatedness of the participants to their school peers and

environment. In this section, the funnel method of asking questions was used and the questions were ordered from more general ones to those which are more emotionally tinged (Ferjenčik, 2008). The questions in this section were as follows:

15. How would you describe your relationship to your classmates? To what extent do you feel like you understand them? Have you ever compared each others' goals?
16. Would you say you have a close friend(s) in the class?
17. Do you ever feel excluded from the class?

The final section of the central part contained one question, which was meant to explore the participants' goals in life, notably whether they are more extrinsically or intrinsically oriented. The question was the following:

18. What are your goals in life?

As demonstrated by the questions above, the interview questions were primarily focused on the nature of academic motivation and the three basic human needs outlined in the Self-Determination Theory by Ryan & Deci (2000c): the need for relatedness, competence and autonomy. Given the nature of the research project and the fact that the Academic Motivation Scale - High School version by Vallerand et al. (1992) was the primary method of the quantitative part of the research, the majority of the questions were focused on the students' school environment. In the concluding section of the interview, gratitude was expressed to the participants for being willing to take part in the research project. Participants also had the option to ask any questions they had about the interview process, the aims of the research and how their data will be processed going forward. Analysis of the interviews will be discussed in the next chapter.

## **5.2.2 Unstructured observation**

Unstructured observation is a qualitative research technique in which data is gathered by means of the investigator's descriptive, unfiltered perception of occurrences as they happen (Fetters & Rubinstein, 2019). The researcher writes down the collected observations in their own words. Even though the observation

notes do not follow any set structure, the observations themselves are focused on particular occurrences or research issues, giving the researcher the freedom of what they choose to document (Fetters & Rubinstein, 2019).

## 6 Data collection and research set

Given the specific focus of the research project, only high school students of one of the two studied programmes, the IBDP and the STX, were deemed eligible for the research. Considering the scope of the project, it was decided that data would be collected at a single Danish high school where both study programmes are taught alongside each other. Struer Statsgymnasium, located in Mid-Jutland, was the high school chosen for the project. Both programmes are well-established at this school, and the student count of both programmes proved satisfactory for data collection purposes.

Purposive sampling was used to select the participants for the research. Purposive sampling is a non-probability sampling method that involves selecting a specific group of individuals who meet certain criteria or characteristics (Palinkas et al., 2013). Those characteristics tend to be either experience or knowledge of a certain phenomenon. Another important characteristic of participants picked by purposive sampling is that they must be willing and able to share their experiences in a reflective and articulate way (Palinkas et al., 2013).

The disadvantage of purposive sampling lies in its non-probability (Palinkas et al., 2013). With this type of sampling, the generalisability of findings cannot be ensured, since there is a potential for bias in selection. Furthermore, it is difficult to control the influence of known and unknown confounders (Palinkas et al., 2013).

As previously mentioned, mixed methods design was used in this research. Therefore, the selection of participants was done in two parts. For the quantitative part, high school students attending either their first or second year of the IBDP and high school students in their second or third year of the STX were asked to take part in the research. Pupils in higher years of the study programmes were selected on purpose, since it was assumed that they would have more experience with their study programme and would have been affected by it for a longer period of time.

For high school students in their first year of the IBDP, it is possible that it was the first year of the programme for some pupils, and their experience was therefore limited. However, this occurrence was unavoidable, since without it, the sample size of the IBDP students would not have been sufficient for our research purposes. The collection of data happened in February with the presumption that,



given the fact that the school year in Denmark starts in August, the students would have a grasp on what it means to study the IBDP by then. Also, in Denmark students have the option to take part in a pre-IB programme, which is a high school programme that lasts one year and its purpose is to familiarise the students with the IBDP and prepare them for a successful completion of it (Nørre Gymnasium, n.d.). Therefore, it is possible that some of the first-year IBDP students took this programme and had prior knowledge of the IBDP.

Participants in the quantitative part were given test batteries which consisted of the introduction page where participants provided demographic data and three questionnaires: the AMS - High School version by Vallerand et al. (1992), the Mini - IPIP by Donnellan et al. (2006) and the MacArthur Scale of Subjective Social Status - Youth Version by Goodman et al. (2001). Participants filled out the questionnaires in the order that they are listed here.

Participants were asked to fill out the questionnaires during their class time. This was previously communicated with all the teachers, and they gave their permission for the researcher to disrupt the class. The data was collected over the course of three consecutive days, at different times throughout the day.

A pilot study with three high school students from the Czech Republic, all aged 18, was conducted prior to the visit to Struer Statsgymnasium in order to find out whether the questionnaire is understandable and how long it takes to fill it out. There were not any problems reported by the students in the pilot study in regard to the questionnaire. On average, it took the respondents in the pilot study ten minutes to fill out the questionnaire.

In total, 171 pupils from Struer Statsgymnasium filled out the questionnaires. In order to deem the completed questionnaire valid for statistical analysis, participants had to answer at least 75% of the questions in the given questionnaire. For example, if a participant answered 80% of the questions from the AMS - High School version by Vallerand et al. (1992) and 70% of the questions in the Mini-IPIP scale by Donnellan et al. (2006), then only the answers from the AMS - High School version by Vallerand et al. (1992) would be included in the correspondent statistical analysis. Overall, there were no participants who had to be excluded from the research project entirely. The overview of the study programmes the participants came from can be found in Table 3.

Table 3: The overview of the study programmes the participants came from

Study programme and year	Number of pupils	% of all participants
Second year of STX	44	26
Third year of STX	52	30
First year of IBDP	37	22
Second year of IBDP	38	22
IBDP in total	75	44
STX in total	96	56

Forty five of the respondents were male (26%), one hundred and twenty three were female (72%). Three respondents identified as non-binary (2%). Only three respondents listed English as their native language. At the time the data collection was conducted, there were around 350 STX students and 130 IBDP students in total at Struer Statsgymnasium (M.Jensen, personal communication, February 19, 2023).

In total, 166 respondents had written down their age. From those responses, the median age of the participants was 18. The average age of the respondents was 18.04, with a standard deviation of 0.92.

For the qualitative part, 8 volunteers were recruited among the pupils who already filled out the questionnaires in the quantitative part of the research. Each interview happened only after the pupil filled out the quantitative part of the research in full. Interviews were conducted face-to-face at different times throughout the day. The interviews took place over the course of two consecutive days. Details about the volunteers can be found in Table 4 below. The names of the participants were changed, in order to protect their privacy.

Table 4: List of students taking part in the qualitative part of the research

Name	Gender	Age	Programme	Year of study
Edward	Male	17	IBDP	1
Carlisle	Male	17	IBDP	1
Alice	Female	18	IBDP	2
Jacob	Male	18	IBDP	2
Isabella	Female	18	STX	2
Esme	Female	18	STX	2
Victoria	Female	18	STX	3
Rosalie	Female	19	STX	3

Out of all the IBDP students chosen for the qualitative part of the research project, only Alice was a Danish national. The other three IBDP students selected for the semi-structured interviews were from abroad, and they came to Denmark with the sole purpose of studying at Struer Statsgymnasium. Their countries of origin are not specified in order to protect their privacy. All of the STX students who took part in the qualitative part of the research project were Danish nationals. None of the participants in the interviews had English as their first language. The interview quotes mentioned in this research project were left exactly as they were worded by the participants, there were not any corrections made to them.

## 6.1 Ethics and privacy protection

In the research project, ethics were taken into serious consideration. The protection of privacy was kept in mind when the research project was designed, and also throughout the whole process of gathering, analysing and storing data. To prevent any harm to the participants in the research, extra care was taken to ensure that the procedures in the research project were conducted in a standardised way. Special emphasis was placed on the ethical areas listed by Ferjenčik (2008), which are the following: right to information, right to privacy, respect in relation to the participants and the right to withdraw from the research.

All the data gathered in this research were anonymised. Every participant in the research was informed about the aim of the project. No one was lied to in the project. The only way of identifying someone in the quantitative part of the research was via a personal code, which every participant made and put down on the first page of the given test battery. Thanks to this personal code, participants had the option of contacting the researcher in case they decided to withdraw from the research at a later date. In the qualitative part, the only way of identifying someone was via their alias. The use of an alias was implemented so that participants could later decide if they wanted to retract their interview.

Before every questionnaire collection and every interview, participants were verbally informed of their rights by the researcher. Every test battery included the aim of the research, the handling of data and the contact information of the researcher on the front page. The participants were made aware of the fact that by filling out the test battery in front of them, they give the researcher the right to use the data in the research project. This information was verbally made clear to the participants before every questionnaire collection and every interview, and was also written on the first page of every test battery. Every participant was made aware that participation in the research is voluntary.

The questions in the research project were not aimed to collect sensitive information. There were not any questions regarding names, religion or the addresses of the participants. The participants were informed that if they did not feel like answering any specific questions, they were welcome to skip them. All the gathered test batteries were kept in a locked wardrobe until the data from them was transferred to the Microsoft Excel spreadsheet. The audio recordings of the interviews conducted in the qualitative part of the research were kept in a special computer file protected by a password in order to prevent any leaks of information.

It is important to emphasise that all the participants in the research were aged 15 and above, many of them being 18 years old. The research project followed the guidelines set for Denmark in the "Child participation in research" document published by the European Union Agency for Fundamental Rights (2014).

## 6.2 Reflection of the researcher

As researchers, it is crucial to acknowledge our own biases and reflect on our attitudes towards the topic being explored. This is due to the possibility of biased outcomes resulting from the interpretation and analysis of data influenced by our individual experiences and views. If we are aware of our own biases, we can try to minimise the impact they have on our research project, in order to ensure that our findings are as objective as possible. According to Jamieson et al. (2023), reflexivity helps with the continual reevaluation of openness and transparency in psychology by forcing researchers to confront and centre their own positions and to interact more thoughtfully with each stage of the research process.

I believe I need to clarify my position in relation to the STX, the IBDP and Struer Statsgymnasium as a whole in this section. I am a graduate from Struer Statsgymnasium, a proud holder of the IBDP Diploma. I spent three years at the school, during which I had the option to learn about both the IBDP and the STX programmes in depth.

I realise that my position in the research project comes with its own set of biases, since I am conducting it as someone who has graduated from the IBDP and enjoyed studying it tremendously. I genuinely adore the structure of the IBDP and the focus it offers on critical thinking. I believe that the IBDP should be more widespread, since it offers students the autonomy in learning that many traditional high school programmes lack. Therefore, my tendencies might be naturally leaning in favour of the IBDP and its structure. In order to minimise the impact of my biased position, I noted all my opinions in regard to the IBDP down on paper prior to starting the project, and I regularly reminded myself of those biases as I was conducting the research.

On the other hand, it is exactly my biased background and position which allowed me the unique access to the IBDP and the STX students. Without my passion for the IBDP and my history with it, I highly doubt I would ever be able to conduct such a research. I explained my background to all the participants in the research, and it relieves me to say that none of the students who participated in the project have known me. I never met any of them before and never interacted with any of them in any way prior to conducting my research. Some of them recognised my face

from the time I took part in a theatre play in Struer, however I never interacted with any of those students back then.

I am aware of the fact that my biased position can especially affect the qualitative part of the project, since the interpretation of the data from the interviews tends to be more subjective than the statistical analysis of the quantitative part of the collected data.

## **7 Work with data and research results**

This chapter describes the procedures used to analyse the collected data, and it contains the results of the research project. Since the used research design was mixed methods design, this chapter is divided into two main sections: a quantitative one and a qualitative one.

### **7.1 Quantitative part**

In this section, various outcomes from the test batteries are portrayed. All the statistical analyses listed below were conducted using the Statistica computer programme.

#### **7.1.1 Zero-order correlation table**

Table 5 shows the values of Pearson's correlation coefficient ( $r$ ) for the variables deemed relevant for the research project. The table consists of zero-order correlations, which can be defined as a "simple association between two variables that does not control for the possible influence of other variables" (American Psychological Organisation, 2018, zero-order correlation section). With the  $r$  value, one indicates a full correlation between the variables, whereas zero indicates none at all (Akoğlu, 2018). The correlation's direction is shown by the sign of the  $r$ : inverse relationships between the variables are indicated by a negative  $r$ . The correlation's strength rises from 0 to +1 as well as from 0 to -1 (Akoğlu, 2018).

Table 5: Pearson correlation coefficient (r) values for the relevant variables

	SP	A	G	IMT	AM	IM	EM	CO	OP	L2	L1
SP	1.00										
A	-0.27	1.00									
G	0.03	-0.02	1.00								
IMT	0.33	-0.07	0.09	1.00							
AM	-0.09	0.01	-0.14	-0.42	1.00						
IM	0.34	-0.06	0.17	0.89	-0.40	1.00					
EM	0.25	0.00	0.15	0.48	-0.16	0.55	1.00				
CO	-0.09	-0.18	-0.10	0.14	-0.36	0.10	0.07	1.00			
OP	0.29	-0.03	-0.14	0.21	-0.03	0.12	-0.04	-0.09	1.00		
L2	0.11	-0.18	-0.19	0.09	-0.24	0.18	0.06	0.29	0.08	1.00	
L1	0.00	-0.17	-0.13	-0.01	0.02	-0.07	-0.06	0.18	0.00	0.20	1.00

SP = study programme; A = age; G = gender; IMT = intrinsic motivation to know; AM = amotivation; IM = intrinsic motivation; EM = extrinsic motivation; CO = conscientiousness; OP = openness to new experiences; L2 = perceived standing in high school; L1 = perceived standing of family in home country's society

A statistical concept known as multicollinearity describes the correlation between multiple independent variables in a model (Hayes, 2023). When two variables have a correlation coefficient of +/- 1.0, they are said to be fully collinear. Reliability of statistical conclusions is reduced when independent variables are multicollinear (Hayes, 2023). Since the r values for the relevant variables in our project are nowhere near 1.0 (except for the high correlation coefficient between *intrinsic motivation to know* and *intrinsic motivation* where a high correlation can be expected), we can conclude that multicollinearity does not present an issue in this project.



## 7.1.2 Academic motivation

One of the aims of this research project was to explore which type of motivation - intrinsic, extrinsic or amotivation - is the most frequent one among the participants. Descriptive statistics were used in order to determine the answer. Histograms for each motivation subtype were created in the Statistica programme. The data set for intrinsic motivation appeared normally distributed. The data set for extrinsic motivation indicated that the distribution was skewed slightly to the left. The skewness value of -0.85 further supported this observation. The data set for amotivation did not appear to be normally distributed either. The skewness value of 0.63 suggested that the distribution of the data was skewed to the right.

There were 171 valid questionnaires for this analysis. The mean value for each subtype of motivation was determined. It was revealed that extrinsic motivation is the most frequent subtype of motivation, with the mean value of 4.90 and a standard deviation of 1.03. It was followed by intrinsic motivation with the mean value of 3.83 and standard deviation of 1.08. Amotivation turned out to be the least frequent subtype, with the mean value of 2.48 and standard deviation of 1.26.

To explore the most frequent motivation further, the data set was divided according to the study programme of the participants. Using the independent samples t-test, it was revealed that the most frequent subtype of motivation overall matched the most frequent subtype in each study programme. For the IBDP students, extrinsic motivation with the mean value of 5.02 and standard deviation of 1.01 was in the lead, followed by intrinsic motivation with the mean value of 4.24 and standard deviation of 0.96, with the last being amotivation with the mean value of 2.34 and standard deviation of 1.25. For the STX students, extrinsic motivation was also in the lead with the mean value of 4.82 and standard deviation of 1.05, followed by intrinsic motivation with the mean value of 3.50 and standard deviation of 1.07, with the last being amotivation with the mean value of 2.59 and standard deviation of 1.26. The intrinsic motivation was the *only subtype* of motivation where the difference between IBDP and STX students was statistically *significant*.

### 7.1.2.1 Motivation for learning

The primary focus of the two hypotheses set for the quantitative part of this research project was motivation for learning. Out of all the subscales of the AMS - High School version by Vallerand et al. (1992), the one measuring intrinsic motivation to know was selected in order to determine the validity of the two hypotheses. A histogram was created in the Statistica programme for that data in question, and they appeared to be normally distributed.

There were 171 valid questionnaires for this subscale. The mean value in the subscale was 4.32. The standard deviation was 1.23. Median value was equal to 4.50. Minimum score was 1.00 and maximum score was 7.00.

The H1 hypothesis: “The IBDP students have higher intrinsic motivation rates for learning compared to the STX students” was tested using the independent samples t-test. There were 171 valid responses included in this statistical analysis. Results of this test showed a significant difference between the groups, with the IBDP students outperforming the STX students. The mean value for the IBDP students equaled 4.77; standard deviation = 0.96 and the mean value for the STX students equaled 3.96; standard deviation = 1.30. The results of the t-test were as follows:  $t(169) = 4.52$ ;  $p < 0.001$ ;  $d = 3.47$ .

The H2 hypothesis: “Women in their teenage years have higher intrinsic motivation rates for learning than men in their teenage years” was tested using the independent samples t-test. There were 168 valid responses included in this statistical analysis. Since the hypothesis was specifically targeted towards individuals who either identified as female or male, those who identified as non binary (3 in total) were excluded from this statistical analysis. Results of this test showed insignificant differences between genders, with the mean value for men equaling 4.14; standard deviation = 1.48 and the mean value for women equaling 4.39; standard deviation = 1.13. The results of the t-test were as follows:  $t(166) = 1.18$ ;  $p = 0.240$ ;  $d = 0.19$ .

From the paragraphs above we can conclude the following:

**H1:** “The IBDP students have higher intrinsic motivation rates for learning compared to the STX students.” We accept the alternative hypothesis and reject the null hypothesis ( $t[169] = 4.52$ ;  $p < 0.001$ ;  $d = 3.47$ ).

**H2:** “Women in their teenage years have higher intrinsic motivation rates for learning than men in their teenage years.” We cannot reject the null hypothesis and we cannot accept the alternative hypothesis ( $t[166] = 1.18$ ;  $p = 0.240$ ;  $d = 0.19$ ).

### 7.1.3 Personality

Outside the scope of the hypotheses, the research project explored the personality traits of the participants, since it was demonstrated in the theoretical part of this thesis that certain personality traits, such as conscientiousness and openness to new experiences, can play a role in one’s academic motivation (McGeown et al., 2014). The personality traits were measured using the Mini-IPIP scale by Donnellan et al. (2006).

The aim of the statistical analysis was to compare the personality traits of the IBDP students and the STX students and determine whether there are any significant differences between the two groups. Given the aim of the research project and the theoretical foundation laid by McGeown et al. (2014), only two personality traits were selected for this analysis: openness to new experiences and conscientiousness.

Histograms for the data collected in regard to both openness to new experiences and conscientiousness were created in the Statistica programme, and while the data set for conscientiousness appeared to be normally distributed, the one for openness to new experiences did not. The skewness value for openness to new experiences was found to be equal to -0.22, indicating that the distribution was skewed to the left.

Openness to new experiences was analysed using the independent samples t-test. There were 170 valid questionnaires in this analysis. The results of this test showed a significant difference between the groups, with the IBDP students outperforming the STX students, with the mean value for the IBDP students being 3.97; standard deviation = 0.80, and the mean value for the STX students being 3.47;

standard deviation = 0.73. The results of the t-test were as follows:  $t(168) = 4.24$ ;  $p < 0.001$ ;  $d = 0.65$ .

Conscientiousness was analysed using the independent samples t-test. There were 170 valid questionnaires in this analysis. Results of this test did not show any significant differences between the two student groups. The mean value for the IBDP students was 3.14; standard deviation = 0.90, and the mean value for the STX students was 3.27; standard deviation = 0.76. The results of the t-test were as follows:  $t(168) = -1.09$ ;  $p = 0.278$ ;  $d = 0.17$ .

#### **7.1.4 Subjective Social Status**

Another factor explored in this research project was relatedness to the learning environment and one's society. The MacArthur Scale of Subjective Social Status - Youth Version by Goodman et al. (2001) was used to measure this factor. The aim of the statistical analysis was to compare the subjective social status of the IBDP and the STX students and determine whether there are any significant differences between the two groups. Histograms for the data collected in regard to both ladders were created in the Statistica programme, and both sets appeared to be normally distributed.

For the first ladder focused on perceived social status in one's society, the independent samples t-test was used to analyse the collected data. There were 158 valid questionnaires for this statistical analysis. The results did not show any significant differences between the groups. The mean value for the IBDP students was 6.14; standard deviation = 1.68, and the mean value for the STX students was 6.21; standard deviation = 1.58. The results of the t-test were as follows:  $t(156) = -0.25$ ;  $p = 0.800$ ;  $d = 0.04$ .

For the second ladder focused on perceived social status in school, the independent samples t-test was also used for the statistical analysis. There were 141 valid questionnaires for this analysis. The results did not show any significant differences between the groups. The mean value for the IBDP students was 6.56; standard deviation = 1.69, and for the STX students it was 6.17; standard deviation = 1.73. The results of the t-test were as follows:  $t(139) = 1.34$ ;  $p = 0.183$ ;  $d = 0.23$ .

## 7.2 Qualitative part

All the audio recordings of the semi-structured interviews were transcribed into written form. The transcribing function in the Microsoft Teams programme was used in this process. The resulting words were checked and corrected over multiple rounds, since the “audio to text” function in Microsoft Teams does not produce perfect results.

For the analysis of the transcribed data, a reflexive thematic analysis (RTA) was chosen. The RTA is a qualitative research method which allows for locating, classifying and providing context for themes (patterns of meaning) across a dataset (Braun & Clarke, 2012). It enables the researcher to see and interpret shared or collective meanings and experiences by concentrating on the meaning across a dataset (Braun & Clarke, 2012). During the process of conducting the RTA, observation notes taken during the semi-structured interviews were also taken into consideration.

The RTA emphasises the importance of the researcher's reflexivity in the process of data analysis. Braun and Clarke discuss the value of reflective practice in comprehending and unpacking assumptions, which are bound to be present in qualitative research (2019). According to the authors, researchers should focus on identifying their own assumptions and question whether these assumptions influence their current research project (Braun & Clarke, 2019).

One of the main advantages of RTA is its flexibility. Due to its nature, it can be applied to various theoretical frameworks, and it does not require the data to be embedded in any theory; its goal is to merely explore the research topic at hand (Brooks et al., 2014). However, such flexibility can also serve as a disadvantage for the researcher. Though RTA is very adaptable, this adaptability may result in inconsistent and nonsensical concepts when a researcher is creating themes from the study data (Holloway & Todres, 2003).

The RTA involves a six-phase process which includes the following steps (Braun & Clarke, 2012):

1. Familiarising oneself with the data
2. Generating initial codes
3. Finding themes
4. Reviewing potential themes
5. Defining and naming themes
6. Producing the report

This six-phase process was followed in the research project. After the data from the interviews was transcribed and triple-checked, the coding process began. During this process, many codes were created. Some were later modified, and some were removed from the analysis. Themes began to emerge during this process as well. After careful review of the emerged themes, some were removed since they were not particularly relevant to the research questions.

In the following sections, the results of the RTA will be discussed in relation to the previously established research question RQ1. RQ2 is better suited for the quantitative part of the research project, and therefore it will not be taken into consideration here.

### **7.2.1 Differences in extrinsic and intrinsic motivation**

The results relating to the research question RQ1: “To what extent do IBDP students differ from students pursuing STX (Danish high school programme) in terms of their intrinsic and extrinsic motivation?” are discussed in this section.

A recurring theme that emerged from the interviews was *the desire to learn*. When the participants were asked why they go to school, all four IBDP students mentioned their goal to improve their English proficiency. Furthermore, two IBDP students mentioned the desire to learn and improve in general. Alice said that: “I go to school mostly to learn and improve myself constantly.” Carlisle said: “I go to school because I really like it, I like the discussions with the teachers.”

When the STX students were asked why they go to school, the answers mostly revolved around a desire to attend university and the promise of a prestigious career. Esme said: "I need to study this in order to study further. To get the job I want. I want to be a lawyer in the future." It is worth noting here that the desire to attend university was mentioned by three IBDP students as well when they were asked why they attend school.

The theme of *securing a fulfilling future* was a recurring one in the interviews. When asked why they attend school, most participants included university education and the desire to have a future in their answers. Carlisle said: "I chose my subjects so that I can have a future with them." When the respondents were asked about their goals in life, most participants expressed the desire to live a comfortable lifestyle. Three IBDP students and one STX student specifically mentioned that they would like to be happy in life. Victoria said: "I just want to be happy, I guess." Most participants mentioned the desire to be financially secure in the future. Isabella mentioned: "I heard someone retired at the age of 38, and I was like, that's my life, that's what I want." Isabella was the only participant who specifically stated that they would like to help people in the future: "I want to help people in my own small way."

*Influences in programme choice* was another recurring theme. All four IBDP students stated that they chose the IBDP because they wanted to leave their home country. Jacob said: "I just wanted to get out of the country." Alice mentioned: "The fact that I want to study abroad was kind of the main factor. Yeah. And it was a bit more challenging, and I kind of felt like I needed that."

Furthermore, all three non-Danish IBDP students were motivated to choose the IBDP by the state of education in their home countries. Carlisle said: "I chose IB because in my country, it was a bit too old the school and the education in general." Edward said:

I didn't know I was choosing IB, like dude, I was just going to escape home. And I just chose this school because it is free and it is far from home. The standard of education there is low, I think.

Jacob said:

My education even though is strong, it does not have any prospects of, like, I would say, you cannot go anywhere. It's mostly recognised only in post-Soviet

countries, which is really not my option. So I believe that I need to finish my study in one of the European countries.

When it came to parental influences, all participants reported that they chose their designated study programmes themselves, without parental guidance. Most of the parents were supportive of their child's choice, only one being against. Alice said:

They were very against me choosing the IB. I think my dad said: 'I don't think you'd feel comfortable not being the smartest person in the room,' yeah, so that was kind of something that I, like, had in the back of my mind while choosing, because they thought that I'd be better off in a Danish system.

Three STX students said in their interviews that their choice of study programme was influenced by the fact that STX is the most common one in Denmark. Esme said: "I just needed something very basic. It was a very safe choice for me." Rosalie said: "Well, I took the most basic line where, you know, you have all the other subjects you need to have. So you can, you know, prove that you have taken an education." Victoria said: "Well, it's the most common one. And it provided what I needed."

A theme exclusive to the STX students was one where they *questioned the necessity of the study requirements*. Isabella said:

I just feel like, sometimes, I could have used those hours I used on homework to do something more beneficial. Also in the school field, but maybe also personal things like going to work out. I work a lot also.

Rosalie mentioned:

You know, what's the point of doing it all when you know you won't get a good grade? So I think that, and then maybe also that we have a lot of assignments and homeworks, and it's just a lot.

When it comes to aspects that motivate participants in their school work, the school environment was mentioned equally by both the IBDP and the STX students. Jacob said: "What motivates me? Well, I would say the environment. First of all, it's a huge contrast from my last school. To be suddenly with people, especially those ones that are smart and smarter than me." Esme said: "So, mostly, like, classmates, those motivate me."



When it comes to aspects that demotivate participants to do their school work, the workload was mentioned equally by the IBDP and the STX students. Isabella said:

I feel like the way the high school is it's very, like, draining. It's like it crushes my curiosity to learn new things. And also, it crushes my ability to kind of learn new things. We have to do a five-page assignment, and then it's just, like, I can't do it anymore.

There were not any significant differences between the two student groups in regard to their preference in deadlines, fixed instructions or the autonomy of building one's own schedule. Most students preferred strict deadlines that would keep them on track rather than having a long period of time to finish all their assigned work. When it came to fixed instructions, they were equally torn between a preference for fixed instructions on an assignment and the choice of a free topic. When it came to the option of structuring their own schedule versus receiving a prepared one by someone else instead, most students would prefer to build their own schedule.

When it came to their feelings regarding essay-style exams, there was only one STX student who expressed a negative opinion, the rest reacting positively. Rosalie said:

I don't really like the essays, because you always have one text in the exam, you only have one option to write about and you know with different takes on it of course, but you always have to write an analytical essay, no matter what.

When it came to perceived competence in doing the school work, there was only one STX student who felt a lack of competence, with the rest expressing confidence in their abilities to handle the workload. Victoria said:

No, no, no, I don't really pay attention in class. I'm definitely missing out on a lot. Other people, they get like these medium grades, and I'm sitting there with my low grades, and I'm just like are you really complaining about that, like, really?

Despite feeling mostly competent in doing their school work, all participants agreed that their chosen study programme is challenging for them. Esme said: "It can be hard, like a lot in math. For example, math is my absolute most-hated subject, and, like, if you don't follow instructions in one math lesson, you're lost for the rest of it."

In terms of relatedness, most participants reported that they feel close to their classmates. However, two STX students had the opposite experience. Rosalie said: "So, we are a class that can talk with each other, but we are very split into the groups we talk to. It's difficult." Victoria labelled the relationship with her classmates in the following way: "It does not exist. Okay, I look very different, and I don't really fit in."

When asked about any close friends in class, everyone except Victoria reported having at least one. When it came to understanding others, most participants expressed that they felt like they understand their peers. Esme said:

I am closer to others than some. I have two very good friends in there. And then I have some I know pretty well, and then I have some I don't really talk to, but we still, like, understand each other pretty well.

While the STX students kept their answers focused on general understanding, the IBDP students mentioned dealing with peers coming from different cultures.

Jacob said:

My system of values differs a bit from Europe. So sometimes, in case I want to make a joke or something, I better think it through several times, and then I decide to say it or not. But in general, yes, I understand them pretty well.

Carlisle said:

At the beginning, it was very difficult understanding people from other countries, because of the different traditions, different feelings, different emotions, different sayings. But always, more and more with time, more time with them, I feel like I understand them.

Alice said: "I feel like I'm beginning to understand them more. I think, as we're moving towards, like, the same goal, it becomes increasingly, like, easy to kind of, like, empathise with them."

The feeling of being excluded from class was not foreign to three participants. Alice said:

It can be weird when you're in a classroom, and for example, like in biology, I am the only Danish person and the only Danish speaker, and then there is, like, a larger Russian speaking crowd, and then sometimes you can kind of feel distance from them.

Rosalie said: “Yeah, we had some instances where they [fellow classmates of Rosalie] didn’t invite us [Rosalie and her friend group] to parties.” Victoria also reported the feeling of not belonging in her class.

When it came to comparing each other's goals with their classmates, all participants reported that they have done that in the past.

## 8 Discussion

The aim of this project was to explore the nature of the academic motivation of high school students enrolled in the IBDP and the STX programme and to find out whether it significantly differs between the two programmes. Data was collected using both quantitative methods - Mini IPIP scale by Donnellan et al. (2006), MacArthur Scale of Subjective Social Status - Youth Version (Goodman et al., 2001) and AMS - High School version by Vallerand et al. (1992) and qualitative methods (semi-structured interviews and unstructured observation). Collected quantitative data was analysed using various descriptive statistical methods in the Statistica programme. Qualitative data was analysed based on the principle of reflexive thematic analysis described by Braun & Clarke (2012).

Overall, the results of the project suggest that IBDP students are more intrinsically motivated to learn than STX students. This can be seen in the results from the AMS - High School version by Vallerand et al. (1992), where the IBDP students scored significantly higher rates, not only for intrinsic motivation to know, but for academic intrinsic motivation in general. We can find additional evidence for this in the qualitative thematic analysis, where all four interviewed IBDP students reported a desire to improve and learn more, while the answers from the STX students revolved mostly around topics falling under extrinsic motivation, such as job prospects.

These results are in line with the results of a comprehensive review compiled by Reeve & Cheon (2021), which showed that autonomy-supportive teaching is linked to increased engagement of students in class, higher academic achievements of pupils and increased self-regulation of learning. The review mentions the Self-Determination Theory by Ryan & Deci (2000c) as the key theoretical basis for autonomy-supportive teaching. In the review, SDT is used to demonstrate the meaning of autonomy and its importance in learning (Reeve & Cheon, 2021).

These results are further supported by results from a study conducted by Areepattamannil et al. (2011), where high school pupils taught in a more autonomy-supportive learning environment had higher academic intrinsic motivation rates than the students who were taught in a more traditional learning environment.

Córdova and Lepper (1996) showed in their study that motivational embellishments that raise the levels of autonomy, such as personalization and choice, lead to higher levels of academic intrinsic motivation and to overall better learning outcomes among the students. Such findings also further support this conclusion.

When it comes to the most frequent type of academic motivation, in terms of intrinsic motivation, extrinsic motivation and amotivation, as defined by Ryan & Deci (2000c) and measured by AMS - High School version by Vallerand et al. (1992), extrinsic motivation was the leading subtype for both groups of students. Intrinsic motivation was the second-most frequent subtype. It was also the only subtype where a significant difference between the IBDP students and the STX students was found, with the IBDP students being more intrinsically motivated. Amotivation was the least frequent subtype.

This statistical data corresponds to the findings from the thematic analysis. Overall, the majority of interviewed students expressed extrinsic motivation when it came to questions about learning. Themes such as the desire to get a well-paying job and attending a prestigious university were emerging equally often between the IBDP and the STX students. It is important to note here that, while both the STX and the IBDP students gave extrinsically-oriented answers to questions about learning, the IBDP students added answers which were more intrinsically-leaning, such as the desire to improve their English and to simply learn more in general. This phenomenon corresponds to the results of the statistical analysis, where the IBDP students were seen to be significantly more intrinsically motivated than the STX students.

According to the statistical analysis, there were no significant differences found in academic intrinsic motivation between male and female students. While there was a trend of women having slightly higher rates for intrinsic motivation to know according to the AMS - High School version by Vallerand et al. (1992), the difference between men and women was not great enough to be statistically significant. This finding goes against the results of the study conducted by Barkoukis et al. (2008), where high school girls scored significantly higher in academic intrinsic motivation than high school boys. Vallerand & Bissonnette (1992) also found significant differences between female high school students and male ones, where

female students were more intrinsically motivated and self-directed. Therefore, findings from both of these studies go against the results of our research project.

The results of the statistical analysis conducted for this project correspond to the answers given in the semi-structured interviews. There were no hints in the answers given by the interviewed men or women that would suggest either one of the genders to be more intrinsically motivated than the other.

According to the thematic analysis, the role of parents in the participants' high school programme selection was minimal. When it came to parental influences, all the interviewed pupils reported that they chose their designated study programmes themselves, without parental guidance. This result goes against the survey results from the Czech Republic described by Krausová (2022), in which high school students reported the opinion of their parents as being the second-most important, right after their own interest. The result of the thematic analysis suggests that students in Denmark and students who choose to pursue studies abroad might be more independent than the average Czech high school student. In another survey conducted in the Czech Republic in 2023, high school students who were dissatisfied with their study programme reported that they mostly trusted their parents' opinion when it came to the high school programme selection (Galová, 2024). Such survey results suggest that it might be beneficial for the adolescent to be independent in their high school programme selection. This topic could be worth further pursuit in the future.

The thematic analysis of the collected data revealed socioeconomic factors to be a crucial factor for adolescents deciding on their high school programme. All interviewed IBDP students reported that the desire to leave their home country played a role in their decision to pursue the IBDP. All of the international IBDP students reported that they had the desire to escape the school system in their countries of origin, since they found it old-fashioned and of low standard. These opinions were closely tied with the desire of the IBDP students to receive prestigious employment and attend prestigious universities.

Students pursuing the STX have not expressed the same reasoning as the IBDP students regarding their choice of programme. Most of them reported that they chose the STX because it was the most common high school programme in Denmark that could provide them what they needed for their future.

In terms of personality traits, as described by the Big Five personality model (Costa & McCrae, 1992), openness to new experiences and conscientiousness were explored in the quantitative part of this research project. Results of the independent samples t-test revealed a significant difference in openness to new experiences between the IBDP and the STX students, with IBDP students scoring significantly higher than STX pupils. This result matches the results of a study conducted by McGeown et al. (2014), where adolescents who scored higher on openness to new experiences also showed higher levels of academic intrinsic motivation, just like in our research project.

When it comes to conscientiousness, there were no significant differences found between the students of the two high school programmes according to the conducted t-test. A trend could be found where the STX students scored slightly higher than the IBDP students. This trend goes against the results of a study conducted by McGeown et al. (2014), where conscientiousness has been found to be the greatest predictor of academic intrinsic motivation among adolescents. In our sample, the IBDP students came out as more intrinsically motivated overall, so they should have scored higher than the STX students on the conscientiousness scale, which they did not.

Given the fact that results for openness to new experiences matched the theoretical foundation laid out by McGeown et al. (2014) and Komarraju et al. (2009), but that the results for conscientiousness did not, it is difficult to determine just how much personality affects the resulting academic intrinsic motivation values. The fact that the results for conscientiousness showed a trend going into an opposite direction from what the theoretical foundation predicted further complicates the possibility of offering any clear conclusion on this matter.

The results of the MacArthur Scale of Subjective Social Status - Youth Version by Goodman et al. (2001) did not show any significant differences between the IBDP and the STX students, neither in the perception of their families in society nor in their own standings in their school setting. These results suggest that both the IBDP and the STX students felt equally related to their societies and school setting, so the impact of this phenomenon on the overall results of academic intrinsic motivation should be minimal. However, the thematic analysis of the semi-structured interviews painted a slightly different picture. Two STX students reported that they do not relate

particularly well to their classmates. One of the interviewed STX students said that they do not have any close friends in their class. Such answers from the STX students suggest that, while differences in relatedness between the IBDP and the STX might not appear on a surface level, if one goes a bit deeper and moves down from a group level to an individual one, they can be found.

In terms of the remaining two basic needs, the need for competence and the need for autonomy (Ryan & Deci, 2000c), the thematic analysis did not reveal any remarkable differences between the IBDP and the STX students.

A similar statement can be made about the motivating and demotivating aspects students face when it comes to their school work. Both the IBDP and the STX students mentioned their school environment as the main motivating factor and their heavy workload as the main demotivating factor.

Life goals slightly differed between the STX and the IBDP students. Most IBDP students mentioned general happiness in life as a goal, while only one STX student said so. The desire to learn, described in the paragraphs above and mentioned by all of the IBDP students, can be applied here as well. Overall, the thematic analysis results suggest that the goals of the IBDP students are more intrinsically oriented than those of the STX students.

The conducted research project had several limitations. Firstly, the ratio between men and women was imbalanced in the quantitative part of the research, with over 70% of the respondents being female. While a trend following the theoretical foundation was identified in the sense that women showed slightly higher rates for academic intrinsic motivation than men, we cannot say that men were fairly represented in the research project. The relatively low number of participating men could have an effect on the resulting values on its own. Unfortunately, the reality is that at least the IBDP tends to consist of mostly women.

Another limitation would be the fact that data was collected only from students at Struer Statsgymnasium and therefore cannot be generalised and applied to the overall population of the IBDP and the STX students across the country.

Also, first-year IBDP students took part in the project. Since the collection of data happened in February and the school year starts in August, it is safe to say that the students should have a grasp on what it means to study the IBDP by then. However, compared to the students of the second year of the IBDP and the students



of the second and the third year of the STX, the experience of first-year IBDP students is somewhat limited, which could have an effect on their answers in both the quantitative and the qualitative part of the project. However, in Denmark, students have the option to undergo a preparatory year before the IBDP called the pre-IB (Nørre Gymnasium, n.d.). It is possible that many pupils have taken part in this education and therefore have been quite familiar with the IBDP system and values. In future research, it would be prudent to inquire the participants about whether they have taken the pre-IB or not.

Another weakness of the research project lies in the chosen sampling method, since a non-probability sampling was used for the selection of participants. Given the nature of our research questions and the overall aim of the project, probability sampling relying purely on random selection was never an option. However, an approach that would make the resulting sample of participants more representable could have been applied in the qualitative part of the research. In our project, participants for the semi-structured interviews were chosen on a volunteer basis. For future research, participants could have been either selected randomly for the interviews or selected based on pre-established criteria.

The fact that all of the methods used in this research project were self-evaluative presents another limitation. Objective results, such as grades, could have been collected from the participants.

The data was collected over the course of four consecutive days, at various times and in various places, which presents another limitation to this research project. Factors such as tiredness, weather and the feelings students might carry toward the places where the data collection took place all come into play and could have affected the collected data.

Only three participants from the quantitative part of the project listed English as their native language. When this is considered in the context of how people from all around the world participated in this research project, the room for misunderstandings and various interpretations of terms becomes quite large. Given the fact that the test batteries were in English, it is entirely possible that some participants answered questions where they were only guessing the meaning behind them.

For future reference, I would recommend expanding the sample of participants to other schools. For the qualitative part of the project, I would recommend trying to randomise the sample chosen for the semi-structured interviews as much as possible. I would also recommend conducting more interviews in order to strengthen the thematic analysis. Asking participants in the IBDP whether they have already done the pre-IB year would also help in understanding the future samples of participants. Lastly, I would recommend expanding the number of study programmes that are being compared to the IBDP. Since the number of IBDP offered worldwide grew by 34.2% between 2018 and 2022 (International Baccalaureate Organisation, 2023b) it is likely that the number of schools teaching the IBDP will be increasing in the future, and it would be interesting to see how the programme fares in comparison to other national programmes.

## 9 Conclusion

This project presents the nature of the academic motivation of students from two high school study programmes, the International Baccalaureate Diploma Programme (IBDP) and the Higher General Examination Programme - *studentereksamen* (STX), which are taught alongside one another at Struer Statsgymnasium, an international high school in Denmark.

Mixed methods research approach was chosen for this project, meaning that both quantitative and qualitative research methods were used to explore the academic motivation of pupils. This was done in order to understand the nature of motivation more deeply and from different angles.

The Academic Motivation Scale - High School version by Vallerand et al. (1992) was used to measure academic motivation. Results from this project showed that the IBDP students were significantly more intrinsically motivated towards learning than the STX students. Furthermore, the IBDP students scored significantly higher in overall academic intrinsic motivation compared to the STX students.

The most frequent type of academic motivation amongst students from both study programmes was extrinsic motivation, followed by intrinsic motivation. Our project did not find any significant difference between the intrinsic motivation of male and female students. When academic motivation was discussed with selected participants in semi-structured interviews, it was discovered that most of the students joined their high school programme with the desire to pursue further studies at a university level and eventually attain reputable careers.

The IBDP students all reported that they chose this programme because they wanted to escape their home countries. Most of them considered the upper secondary education in their home countries to be outdated. Also, all of the IBDP students said that they joined the IBDP with the goal to improve their English language. The STX students reported that they chose their programme since it was the most common one in Denmark, and that it provides them all they need to pursue the goals they have for the future.

## Summary

This Bachelor thesis provides an insight into the academic motivation of high school students enrolled in two different study programmes: the International Baccalaureate Diploma Programme (IBDP) and the *studentereksamen* (STX) programme, which is also known as the Higher General Examination Programme in Denmark.

According to the Self-Determination Theory (SDT) by Ryan & Deci (2000a), motivation can be divided into three categories: intrinsic motivation, extrinsic motivation and amotivation. It has been repeatedly shown that students who have intrinsic motivation towards learning show more success in academic settings as well as higher well-being scores (Howard et al., 2021).

According to SDT, humans have three basic needs: the need for competence, the need for autonomy and the need for relatedness (Ryan & Deci, 2000c). The fulfilment of these needs is crucial for motivation, well-being and personal growth (Ryan & Deci, 2017). Autonomy, being the basic need it is, plays a key role in academic intrinsic motivation, and if provided to the students, it can enhance their learning capabilities (Córdova & Lepper, 1996). It has been shown that motivational embellishments that raise the levels of autonomy, such as personalisation and choice, lead to higher levels of intrinsic motivation and to overall better learning outcomes among the students (Córdova & Lepper, 1996).

Furthermore, academic intrinsic motivation in adolescence has been shown to be influenced by the gender and the personality of the adolescent. Female high school students have been shown to be more intrinsically motivated than their male counterparts (Barkoukis et al., 2008; Vallerand & Bissonnette, 1992). Personality traits such as conscientiousness and openness to new experiences have also been linked to academic intrinsic motivation. Pupils that scored high in these two traits also showed higher levels of academic intrinsic motivation (McGeown et al., 2014).

In this thesis, a comparison was drawn of the autonomous learning of the two high school programmes, the IBDP and the STX. The IBDP came out as more autonomous because of a few reasons. Firstly, it offers more flexibility in the choice of subjects compared to the STX programme (European Commission, 2023; International Baccalaureate Organisation, 2017).

Secondly, the core parts of the IBDP - the Theory of Knowledge, the Extended Essay and the Creativity, Activity and Service programme - are specifically intended to encourage autonomous study, critical thinking and self-directed engagement towards not only learning, but also service-oriented activities (International Baccalaureate Organisation, 2023c). All of the core parts of the IBDP are mandatory for all its students (International Baccalaureate Organisation, 2017). The STX programme does not have anything in its curriculum that could compare to the “core parts” section of the IBDP. Lastly, the IBDP as a whole is offered in three working languages: French, Spanish and English. The IBDP also provides services and documents in other languages they consider to be strategically important (International Baccalaureate Organisation, 2014). In comparison, the STX can only be studied in Danish (European Commission, 2023).

The exploratory part of the thesis focused on the comparison of academic motivation between the STX and the IBDP students. Previous research found out that students taught by a more autonomous approach (Córdova & Lepper, 1996; Reeve & Cheon, 2021) scored higher in academic intrinsic motivation. Based on this, the following research questions were created:

**RQ1: To what extent do the IBDP students differ from students pursuing the STX (Danish high school programme) in terms of their intrinsic and extrinsic motivation?**

**RQ2: What is the most frequent type of motivation (in terms of intrinsic motivation, extrinsic motivation and amotivation) among the IBDP students?**

In addition to the formulated research questions, the exploratory part of the thesis focused on determining whether there are any gender differences amongst high school students in terms of academic motivation. Also, other variables that might affect academic motivation, such as personality or perceived relatedness, were explored in our research.

The role of parents in participants’ high school programme choice and the reasons behind students’ decision to join the IBDP are two additional areas that were explored in our research in order to provide deeper insight into students’ academic motivation.

Given the exploratory nature of the established research questions, a mixed methods research approach was picked. This approach was chosen since it combines parts of quantitative and qualitative research methodologies and allows the researcher to reach a deeper understanding of the topic at hand (Schoonenboom & Johnson, 2017). For the quantitative part of the research, the following hypotheses were set:

**H1:** The IBDP students have higher intrinsic motivation rates for learning compared to the STX students.

**H2:** Women in their teenage years have higher intrinsic motivation rates for learning than men in their teenage years.

There were not any hypotheses set for the qualitative part of the research.

Several quantitative methods were used in our research. Firstly, academic motivation was measured via the Academic Motivation Scale (AMS) - High School version by Vallerand et al. (1992). The AMS consists of 28 items, and participants are asked to answer on a Likert Scale ranging from 1 to 7. This method explores academic motivation in terms of extrinsic motivation, intrinsic motivation and amotivation, as described by Ryan & Deci in their Self-Determination Theory (2000c). Secondly, the personality of participants was explored using the Mini International Personality Item Pool (Mini - IPIP) scale by Donnellan et al. (2006). This method uses 20 statements where participants answer on a Likert Scale from 1-5 to assess the personality of the respondents, as described in the Big Five personality model (Costa & McCrae, 1992). Lastly, participants' perceived social status was explored using the MacArthur Scale of Subjective Social Status - Youth Version (Goodman et al., 2001). This method uses pictures of two ladders. Participants are asked to circle one rung on each ladder to express how they view their standing in the society of their home country and in their school environment (SPARQ tools, n.d.). It can provide a better understanding as to how well the pupils relate to their school peers.

For the qualitative part of the research, semi-structured interviews and unstructured observation were selected as research methods. Semi-structured

interviews were selected since they allow the participant responses to inform future research questions, therefore contributing to a more thorough understanding of the subject (Creswell, 2013). Unstructured observation was selected since it gives the researcher the freedom to choose what occurrences they document, not limiting them to any structure (Fetters & Rubinstein, 2019).

Given the nature of the research, participants were selected using the purposive sampling method. The selection happened at Struer Statsgymnasium in Denmark, where both programmes are taught alongside each other. In total, 171 participants took part in the quantitative part of the research, and 8 students participated in the qualitative part. All the data was collected over the duration of four consecutive days.

The gathered quantitative data was entered into the Microsoft Excel programme and analysed in the Statistica programme using the independent samples t-test. The gathered qualitative data from the semi-structured interviews was transcribed using the Microsoft Teams programme and was later analysed based on the principle of reflexive thematic analysis described by Braun & Clarke (2012). Observation notes taken during the interview process were also taken into consideration in the thematic analysis.

The results of the statistical analysis showed the IBDP students to be more intrinsically motivated for learning than the STX students. Therefore, for H1, we accepted the alternative hypothesis and rejected the null hypothesis. Such conclusions correspond to the findings from the thematic analysis. Also, the statistical analysis revealed extrinsic motivation to be the most common subtype of academic motivation amongst both the IBDP and the STX students. This statistical data corresponds to the findings from the thematic analysis, where the majority of interviewed students expressed extrinsic motivation when it came to questions regarding learning.

Furthermore, the results of the statistical analysis showed that there is no significant difference in academic intrinsic motivation between men and women. Therefore, for H2, we could not reject the null hypothesis and could not accept the alternative hypothesis. The results of the statistical analysis corresponded to the answers given by the participants in the semi-structured interviews.

The role of personality on the academic intrinsic motivation of pupils turned out to be difficult to interpret, since results for one personality trait - openness to new experiences - matched the theoretical foundation laid down by McGeown et al. (2014) and Komarraju et al. (2009), but the results for the other explored personality trait - conscientiousness - did not.

Regarding the role of perceived social status, the MacArthur Scale of Subjective Social Status - Youth Version by Goodman et al. (2001) did not show any significant differences between the IBDP and the STX students on either ladder. This suggests that both IBDP and STX students feel equally related to their settings. However, findings from the thematic analysis revealed that half of the interviewed STX students experienced difficulties in relating to their classmates. Therefore, the impact of perceived relatedness on the overall results of academic intrinsic motivation might be greater than the quantitative data indicated.

The role of parents in the participants' high school programme selection was shown to be minimal in the thematic analysis.

Reasons as to why the IBDP students chose the IBDP in the first place were quite similar across all of the interviewed pupils. The majority of them reported the desire to leave their home country and its school systems behind. Other reasons were to attain a prestigious job later on in life and to be able to attend prestigious universities.



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# **Attachments**

List of attachments:

1. Abstract in the Czech language
2. Abstract in the English language
3. Data transcription sample

## Attachment 1: Abstract in the Czech language

# ABSTRAKT BAKALÁŘSKÉ PRÁCE

Název práce: Motivace studentů v programu International Baccalaureate Diploma Programme

Autor práce: Hanuš Patera

Vedoucí práce: prof. Konstantinos Kafetsios, Ph.D.

Počet stran a znaků: 81, 122 578

Počet příloh: 3

Počet titulů použité literatury: 70

Abstrakt (800–1200 zn.):

Tato práce se zabývá akademickou motivací studentů dvou středoškolských programů: International Baccalaureate Diploma Programme (IBDP) a dánského Higher General Examination Programme - *studentereksamen* (STX). Cílem této práce bylo prozkoumat akademickou motivaci studentů IBDP a zjistit, do jaké míry se liší od motivace studentů absolvujících STX. Vzhledem k povaze cílů této práce byl zvolen výzkumný přístup smíšených metod.

Na základě současných výzkumných závěrů byla vyslovena hypotéza, že vzhledem k tomu, že IBDP je z hlediska učebních stylů autonomnější než STX, budou studenti IBDP více vnitřně motivováni k učení. Výsledky statistické analýzy shromážděných kvantitativních dat odhalily významný rozdíl ve *vnitřní motivaci k poznání* mezi zkoumanými skupinami studentů, přičemž studenti IBDP překonali žáky STX.

V rámci výzkumu proběhly také polostrukturované rozhovory s dobrovolníky z obou programů. Závěry z tematické analýzy shromážděných kvalitativních dat podpořily výsledky dotazníku Academic Motivation Scale.

Klíčová slova: akademická motivace, STX, IBDP, učební styly, tematická analýza

## **Attachment 2: Abstract in the English language**

### **ABSTRACT OF THESIS**

Title: Motivation of students pursuing the International Baccalaureate Diploma Programme

Author: Hanuš Patera

Supervisor: prof. Konstantinos Kafetsios, Ph.D.

Number of pages and characters: 81, 122 578

Number of appendices: 3

Number of references: 70

Abstract (800–1200 characters):

This thesis explores the academic motivation of students in two high school programmes: the International Baccalaureate Diploma Programme and the Higher General Examination Programme - *studentereksamen* (STX) Danish high school programme. The goal of this thesis was to explore the academic motivation of the IBDP students and to find out to what extent it differs from the motivation of students pursuing the STX. Due to the nature of the aims of this thesis, a mixed methods research approach was chosen.

Based on the latest research, it was hypothesised that, due to the fact that the IBDP is more autonomous in terms of learning than the STX, the IBDP students will be more intrinsically motivated towards learning. Results of the statistical analysis conducted, using the gathered quantitative data, revealed a significant difference in *intrinsic motivation to know* between the two student groups, with the IBDP students outperforming the STX students.

Semi-structured interviews with volunteers from both programmes were also conducted. Conclusions drawn from the thematic analysis of the collected qualitative data supported the results from the Academic Motivation Scale questionnaire.

Key words: academic motivation, thematic analysis, mixed methods, STX, IBDP, learning

### **Attachment 3: Data transcription sample**

**Interview – Carlisle** (male, 17 years old, IBDP, international student)

A: Tell me, why do you go to school?

M: I go to school because I really like it, I like the discussions with the teachers. I really like seeing my friends. I like talking with them, talking with teachers, and because I think it's very important for my future, especially in this school, because I moved from Italy and it's very different from my own country. And in fact, now I have subjects that I would like to have a future with them. So, I like them because I think it is very important.

**Interview – Isabella** (female, 18 years old, STX, Danish national)

A: And what motivates you to do the schoolwork or to you know, try to improve like you just said?

L: Nothing. I'm very demotivated. I have been for until. like, four weeks ago. Actually, I have gotten some crazy motivation right now. And I don't know what it is. I feel like the way the high school is, it's very ,like, draining is ,like, it crushes my curiosity to learn new things. And also it crushes my ability to kind of learn new things. We have to do a five page assignment and then it's just like, I can't do it anymore. When we get like 10 pages of homework to read and then do something through the day. It's just like very, you kind of get strangled in when you just want to learn. I guess I get why they do it. It's, just, it feels horrible. But it's, again, they have to make us disciplined for the future for future schooling and future jobs and so on. So a good way to do it, but I thought maybe we should do a different system in that case.

**Interview – Alice** (female, 18 years old, IBDP, Danish national)

A: What about your class? Would you say you have close friends in your class?

J: I have a few. I used to have more, but they all dropped out. So now I have a few left. So I will say that my social life is not what's ,like, keeping me here. It's, yeah, it's quite a small circle.

A: And so do you ever feel excluded from the class?

J: Yes, sometimes, you know, it can be weird when you're in a classroom and for example, like in biology I am the only Danish person and the only Danish speaker and then there's like a larger Russian speaking crowd and then sometimes you can kind of feel distance from them.