THE DISCOVERY OF MINDSETS:
How to observe and identify Mindsets in university students of English language

Master's thesis

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Tiivistelmä – Abstract

Jokaisella yksilöllä on oma tapansa reagoida vastoinkäymisiin elämänsä aikana. Osa meistä kokee vastoinkäymiset heikentävinä, kun toiset saavat niistä lisää motivaatiota jatkaa. Carol Dweck Stanfordin yliopistosta on kollegoidensa avulla kehittänyt attribuutioteoriaan kuuluvan kasvun ajattelutavan (Mindset), joka osaltaan selittää tätä ilmiötä. Tämän tutkielman tarkoituksena oli selvittää millaisilla kysymyksillä ohjaaja voi havainnoida ja tunnistaa ohjattavan opiskelijansa kasvun ajattelutapaa, sekä pohtia mitä mahdollisuuksia ohjaajalla on vaikuttaa ohjattaviensa ajattelutapaan päivittäisen kanssakäymisen aikana. Tutkimuksen aineisto koostuu kahdesta kyselystä: määrällisestä Likert-kyselystä, jossa osallistujat vastasivat paperi-lomakkeella, kuinka vahvasti he ovat yksimielisiä yhdentoista väittämän kanssa, sekä laadullisesta seitsemän kysymyksen avoimesta kyselystä, jossa osallistujat saivat mahdollisuuden vastata tutkijan esittämiin kysymyksiin verkossa Webropol-alustalla. Aineiston analysointi koostuu sekä määrällisestä että laadullisesta analyysistä. Määrällisessä analyysissä käytettiin Hansonin (2015) kuvailemaa Likert-kyselyä ja laadullisessa analyysissä käytettiin sisältö- ja teema-analyysiä. Tutkimus osoitti, että avoimilla kysymyksillä kyettiin tunnistamaan kasvun ajattelutapaan liittyviä ilmiöitä, jotka kykenevät myöhemmin tuomaan ohjaajalle ratkaisevaa informaatiota hänen ohjaamansa ryhmän kasvun ajattelutavasta. Tutkimuksen metodit eivät kuitenkaan tuottaneet luotettavaa ratkaisua ajattelutapojen identifioimiseen yksilötasolla. Tutkimus nosti kuitenkin esille tärkeitä huomioita koskien kasvun ajattelutavan mahdollista muuttamista jokapäiväisessä opiskeluympäristössä.

Asiasanat – Keywords

Attribution theory, self-efficacy, motivation, Mindsets, Growth Mindset, Fixed Mindset, feedback, development, persistence

Säilytyspaikka – Depository

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Muita tietoja – Additional information

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GM = Growth Mindset

FM = Fixed Mindset

Q1-8 = Question one to eight

1 INTRODUCTION

"Collectively, these findings suggest that the achievement of difficult goals entails not only talent but also the sustained and focused application of talent over time."
Duckworth, Peterson, Mathews, Kelly (2007:1087)

We are all surrounded by the same outside world, but we all interact with it in different ways. While others strive through challenges they face, others struggle or give up. The pedagogical field is riddled with different aspects to explain why; providing viewpoints, sets of beliefs and paradigms that are all trying to resolve how to make our students learn and what makes a learner a good one.

According to Halinen et. al. (2016:81) there is not one complete story to solve this riddle. One could summarise that at the end of the 1980's "the good learner" field of research was booming and the academic field had a wide range of qualities that were supposed to make a learner a good learner (Ellis 1985). By the end of the 1990's that list had shrunken into two aspects: how well the student was able to handle uncertainty and how self-efficate the student was, in other words: how well they believed in their skills and capabilities.

During my studies I was content with these findings, until I encountered Carol Dweck's research on Mindset. Carol Dweck is one of the giants in the field of motivation psychology, and she has done extensive research on developmental, pedagogical and achievement psychology, specialising in human behaviour when they are faced with challenges.

Early on her career at the Stanford University, Carol Dweck became interested on how students reacted to academic failure (Dweck 2000). She soon found an interesting pattern, and together with her colleagues, started to form her own tentative ideas on what could cause one's reactions when facing a challenge or academic setback (Dweck 2000). Today her theory is called Mindset, but during those early years, up until now, the theory has had many names (Tirri et. al. 2018). Perhaps due to the abundance of headings, it seems that in the hands of scholars the theory has become chattered and unnecessarily complex, but according to Dweck (2000, 2017, Dweck and Yeager 2019) the main idea, and the root cause of behaviour when

one is faced with a challenge, derives from the individual's beliefs about their own and others' capabilities to change; their Mindset. Dweck (2017) suggests that the way individuals see their own and everyone else's capability to change and evolve affects their behaviour in all areas of life, and the one area where this phenomena is notably evident is the world of academia.

Following this discovery, I became interested to find out if the Mindset could be detected among university students, and possibly alter it. Therefore, in the present study I set out to determine if I could develop questions and tools to aide mentors, teachers, and fellow humans to detect individual mindsets and possibly enhance motivation, self-efficacy and performance in the academic environment through the insights that arise from the current study. As the scope of a master's thesis is limited, I had to restrict my inquiry. Trying to alter mindsets was too far reaching for a master's thesis, but the prospect and possible tools for such change are thoroughly discussed throughout the thesis.

In the current thesis, I conducted both quantitative and qualitative analysis of the target group to determine their Mindsets. I created seven qualitative open-ended question for the current study, and determined the participants Mindsets by evaluating what Mindset-related phenomena could be detected in the responses to the questions. This qualitative analysis was compared with the quantitative analysis for reliability. As my target group, I chose the participants of a basic level English studies course, because in my own evaluation, the students of Languages, Linguistics and Culture are especially exposed to study requirements and methods which highlight the stress and vulnerabilities of a Fixed Mindset, and therefore are a valid subject group for this study. Based on the findings, I produced short practical guidelines to keep in mind while working with Mindsets and for further research.

2 BACKGROUND LITERATURE

Let us start from the beginning; the place where my inquiry commenced and where I was introduced to Dweck: pedagogy. There is not one full and holistic theory on pedagogy which could explain everything there is to know about learning. According to Halinen et. al.

(2016:81), the factors the learning process involves - the learner, the teacher, the environment and all available resources - are so numerous and complex in nature that to encompass them all in one theory is a task yet to be accomplished. Halinen et. al. continue that even though we do not have the full and perfect picture, we still know that cognition and cognitive skills are at the core of all human behaviour, including thinking and learning, and if we look at the different aspects affecting learning and cognition we might better understand what drives our actions and our learning. Halinen et. al. (2016:81) state that one of the major ingredients of cognition are our beliefs, and according to them, beliefs are the cornerstone of what controls how we use and develop our cognitive capacity.

Cognition and cognitive capacity

According to the Merriam-Webster online dictionary "cognitive" is defined as "of, relating to, being, or involving conscious intellectual activity (such as thinking, reasoning, or remembering)." (Merriam-Webster, 2019). All cognitive theories are involved in how the human mind works. Halinen et. al. (2016:51) separate the main cognitive theories into two main paradigms: nature and nurture. In their opinion, majority of cognitive theories concentrate on intelligence and see intelligence as a stable and inherited asset that individuals posses. This tradition of thought argues that the genetic fabric is the key to understand human behaviour or beliefs, and Halinen et. al. (2016:51) speculate that this is the reason why few of the theories try to explore how to teach or grow intelligence, even though, majority of them admit that the environment plays a major role on how intelligent an individual is. Perhaps the reasoning has been that if intelligence is stable and inherited, there would be no reason to teach it.

Intelligence is one of the main ingredient in Dweck's theory on Mindsets and since so much credit is given to inborn aspects of it, we need to discuss "intelligence" as a concept a little further. According to Dweck (2000, 2017) the Mindsets consist of beliefs on human traits, and throughout Dweck's studies the beliefs on intelligence have been the main subject of her research. It is certain that when we are dealing with cognitive capacities, abilities and potential, we are simultaneously dealing with the concept of intelligence. Likewise, the way we define intelligence is veritably at the core of Dweck's Mindset Theory.

Ellis (1985:110) defined intelligence as the ability to master academic skills, and since everyone masters their first language, he challenged the idea that intelligence would be relevant for the degree of success students gained in their L2, hence, undermining the importance of inherent intelligence.

Dweck (2000) argued that our definitions of intelligence had a greater effect on outcomes than our actual level of intelligence. She argued that measuring intelligence was a muddy business and that there were not any reliable tools to measure intelligence without cultural bias. In her studies, Dweck (2000) had found that the IQ student's started with, their measured level of intelligence, did not correlate with the level of success they maintained during their academic careers. She also emphasised that the common tool we use, the IQ-test, was originally designed to measure if the French Public Schools had succeeded in their job and if remedial work and extra resources were needed. It was designed to measure the schools' performance, not to evaluate individual students.
To emphasise the point that inborn intelligence may have been given too much credit, both Ellis (1985:222) , and Waring and Evans (2015:72, 76-77) list student features which result in better learning, but on neither of these lists intelligence is mentioned as a potent indicator of a successful learner.

According to Halinen et. al. (2016:52), before Piaget, the cognitive field saw intelligence mainly as an inherited trait that defined the potential of human capacity. Piaget changed the cognitive field with his revolutionary idea that intelligence evolves throughout our lives and our environment has its hand in the developmental process, and introduced nurture to the spectrum of cognitive theories (Halinen et. al. 2016:52). Since then, the wrestle between nature and nurture has been ever going and no end seems to be visible in the imminent future.

However, Halinen et. al. argue (2016:53) that neither of these aspects on their own - nature or nurture - gives us enough substance to truly understand how our minds work, and therefore they introduced the holistic view by Demetrion in which both of these aspects affecting cognition are integrated into one holistic view.

In Halinen et. al.'s (2016:53) description of Demetrion's views, our cognitive skills develop in interaction with our environment, and the culture in which we are cultivated has a great impact on how our cognitive resources turn out to function. This is not far off from Piaget's original ideas, and it is very close to Dweck's (2017) holistic theory on motivation and development, where genetic qualities guide our perceptions of our life-event, producing our initial beliefs. Such interplay is of a major importance when we are to consider individual cognitive capacities.

This interplay of nature and nurture is evident in various studies, an example of which is a study described by Halinen et. al. (2016:85) where Finnish students' skills for learning were evaluated at the end of their primary school careers. The study confirmed that beliefs have an impact on cognitive behaviour: the more convinced the students were of their skills, abilities and luck, the less they persisted or put any effort in their work and the less they felt they could impact their learning results. The students who believed that effort and persistence could gain them new knowledge, applied their cognitive capacities to their tasks, and had greater success, even though their starting levels and aptitude were taken into consideration. To stress this, Halinen et. al. (2016:87) go on to note that when major research results are taken into consideration, it is fair to say that students who strive well in their academic careers do not tend to consider themselves better than other learners, but their success is a result of continuous effort to seek out opportunities to use their abilities and learning skills in an abundance of ways to reach their goals. To put it more explicitly: successful students seek out means to reach their goals and use the capacities they possess. There is no benefit to have strong cognitive abilities, such as intelligence, if one does not use it properly, hence, what the person believes about themselves affects their actions and therefore, learning.

Ellis (1985:99-100) agrees with this notion. He states that there is not one full agreement on what are the defining qualities of a good learner, and he (Ellis, 1985:222) goes on to list a comprehensive list of qualities associated with a good learner. In this list he emphasises (Ellis, 1985:102) the importance of the learner's self-image as an important factor for successful learning.

Framework on learning - constructivism

Agreeing with the notion that no theory on learning is perfect and that cognition and mental processes play a major role in learning, we still need a framework to study how understanding, comprehension and learning might happen. One such plausible theory is constructivism. Waring and Evans (2015:49) describe constructivism as a process where learners actively build their own mental scheme to recall, integrate and build patterns of information.

To examine a bit more closely how constructivism works, let us take the concept of a forest for an example. A child may have an image of a forest in their minds with trees and bushes. They may be told stories and information about the forest, animals and plants that may inhabit the forest. The nature of the stories affects the way the child will construct information around the concept of a forest. Let us say that the given child will go for a little walk to a forest: they see, hear and feel new things. Whatever new information the child gathers from that experience, it will be integrated to what he or she already thought about a forest. If the child had been told stories about elves and giants throwing rocks around the forest, then the great rocks lying around the forest bed will be an affirmation to that belief. If she had been told about the great glaciers melting and moving these rocks to their places, perhaps she can better remember it when she sees the actual results of happenings long gone. However the thought process might end, it is evident that our cognitive processes, the substance of our thoughts, are altered by our experiences and beliefs, and our beliefs and experiences are altered by our thoughts and our relationship with the world. Our selves are altered with every such occurrence. Considering this, we have come to a full circle: the individual chooses to integrate new knowledge on the basis of old knowledge, and with this notion beliefs and agency come again to the picture.

Mind as a stock of knowledge

According to Waring and Evans (2015:49) this stock of knowledge is continuously evolving through new understanding and experiences which the learner is exposed to and exposes themselves to. This theoretical notion of altered constructions of information while gaining

exposure to experiences and new knowledge is supported by the concept of brain plasticity. According to Waring and Evans (2015:83, 135, 139) resent research confirms that when an individual is influenced by their environment through academic medium - or everyday activities - their brain structure changes and their new understanding physically re-organises their brain, very much how constructivist approach defines learning on a theoretical level. This structural and physical change in the brain is called *brain plasticity* and this gives us tremendous potential, understanding and hope on how humans are capable to change and alter their minds. When we learn and when we think, our brains do not form solid unchanging routes, but we mould our brains' physical structure every time we activate them and hence also the way we function in the future. Waring and Evans (2015:49) summarise this notion by remarking that brain plasticity means new connections, new patterns and new emotional memories in the brain.

When we reach the causatum that new knowledge and ideas are integrated to what existed before, changing bit by bit our minds even on the physical level, we likewise need to consider how this integration happens on the cognitive level.

Dweck and Yeager (2019:482) note that it is inevitable and crucial for people to develop belief about the world to successfully navigate it. In Demetrion's theory the concept of beliefs comes also to the frontlines. Accoring to Demetrion's theory there are two major cognitive facets that affect how our minds function: our skills for self-regulation and evaluation, and our conscious and subconscious beliefs (Halinen et. al. 2016:53). Halinen et. al. (2016:57) go on to argue that the majority of human thinking is done intuitively: we form our decisions and insights in a matter of seconds, and habits and patterns of thinking guide our thoughts. If this is true, our beliefs truly drive our cognitive capacities to further lengths than most of us realise. These views are in line with what we discussed before, however, if our minds and cognitive processes are driven by our selves, we need to better understand the 'self' which decides the paths to the construction of information that later on define how we act in the world.

Self - me, myself and I

According to Halinen et. al. (2016), our self-image is a belief system built through social interaction which can be altered through discourse. A part of our self-image are the ideas of what we can do, and what we are good at, but according to research results (Halinen et. al. 2016:86), our self-confidence, our steadfast belief in steady talent is less valuable to learning and intellectual progress than the active application of ourselves to seek out opportunities to learn and accomplish our goals.

According to Dweck (2000), we are blocks of beliefs, values and goal. These define us and make us do what we do. Dweck (2017) has proposed a unified theory of the self where personality and integrated identity are the results of a process where an individual starts out as an agent seeking to fulfil core psychological needs, gains experiences and evaluates these through the inherited temperament and perspectives provided by their genes. These interpretations later build beliefs, thoughts, patterns of reactions and behaviour, which later on, when more complex cognitive processes emerge, affect further the interpretations of the life experiences and further strengthens the previous beliefs. Dweck's concept is not far off from the one Demetrioun presents.

Based on these theories, our 'selves' are an ever changing construct driven by perceptions, beliefs and interaction with our environment which drive our thinking, learning and doing.

We have come to the summit of what is contained in our minds and our selves, and how these are formed and moulded on the theoretical levels. What lies ahead is the pursuit to understand what drives us towards change, towards action and towards knowledge. In the following paragraphs we will dwell on the field of motivational theories and how we navigate our own minds towards the goals we set.

2.1 Motivational theories - at the core

Jan Erik Nurmi and Katariina Salmela-Aro (2017:9) state that we humans do not simply react or drift into a situation. According to them (2017:9-10) we are driven by our motivation which answers to the questions of why, what, and how we act. Dweck (2017:697) defines motivation

as the forces that drive and direct behavior, whereas, Nurmi and Salmela-Aro (2017:9) define motivation as the feelings, hopes, goals and passion we maintain towards a particular issue we are interested in. In these short statement there are already a heap of interesting points to examine: we need to be interested in a certain issue to act upon it, we have our feelings and hopes, which are derived from our beliefs (Aragao 2011:303), and we have our goals and passions entwined. Therefore, our identity, what we want to become and achieve, is tightly interwoven within our motivation.

Motivation has intrigued us for quite a while now and like the field of pedagogy, the field of motivation psychology has yielded several theories to answer to the question of what truly makes us motivated to act (Nurmi and Salmela-Aro, 2017:10, 14). In the literature Nurmi and Salmela-Aro describe several theories of motivation which have been particularly popular during the recent decades and where these theories came from. While I have acquainted myself with these theories I have come to notice that most of these theories tend to answer only one or some of the phases in our action processes and a whole holistic view seems to be often absent. Features prevalent in the theories are very similar to each other, and Nurmi and Salmera-Aro (2017:9-11) do portray the central questions linked to motivation theories.

Why, What and How

At the core of all actions there is always the question of why. Nurmi and Salmela-Aro (2017:10) summarise that person's values, what they appreciate, genes, and therefore their personality and temperament, and basic psychological needs answer why they act. Nurmi and Salmela-Aro go on to state that these features or reasons rarely are conscious. This echoes Halinen et. al.'s (2016:57) argument that most of our decisions are done intuitively and are automated.

The next question is what. What is the person trying to achieve, what is the target or goal of their effort (Nurmi and S-A, 2017:10). Nurmi and Salmela-Aro argue that these sections of motivation are usually consciously made, but I strongly view that the goals and pursuits are on their own motivated by the answers to the question of why. Hence, the notion of consciousness is problematic. It could be contested, that something can not be called

“conscious” if it is strongly affected by subconscious beliefs. Nevertheless, ‘what’ is an important ingredient when motivation is moulded and we could agree with Nurmi and Salmela-Aro and argue that we tend to be more aware of our goals than we are about the beliefs that direct them.

The final question is how. How the goals will be achieved, what strategies will the person employ, and how will they monitor their work and progress. Nurmi and Salmela-Aro (2017:10-11) state that these elements of motivation tend to be automated over time, even though they are originally chosen consciously.

These main questions Nurmi and Salmela-Aro present are in line with Carver and Scheier’s theory of Self-Control introduced by Burnette et. al. (2013:656). Carver and Scheier’s theory of Self-Control provides an interesting and clear outline and understanding of how our motivational action process functions, but before we go into aforesaid detail, we need to look into the wider perspective of motivation and motivation psychology. To place us inside the context of motivational psychology and to understand Dweck’s relevance and importance, we will have a quick look of some of the evolution of motivation theory and what do the most prominent theories look like today.

2.2 Motivational theories - how we got here

All motivational theories emerge from a psychological background stretching to our history. Several rivalling theories have affected the course of development, and our understanding of the human mind has increased with each. We could look at these theories as the building blocks which try to describe and understand the workings of the mind, but all of them are still limited even in their full strength. For us to grasp the wider picture of what is the background we are dealing with, let us look at the main events in our path to where we are today.

Freud is usually seen as the first notorious character to describe the reasons behind people’s motivations to act. Nurmi and Salmela-Aho (2017:11-13) paint a somewhat noir picture along with Freud’s voice: people were driven and enslaved by their dark and secret desires, usually related to their latent sexual inhibitions. Dweck and Yeager (2019:482-483) start their

historical account on behaviourism, which is second on Nurmi and Salmela-Aho's (2017:11-13) list. According to behaviourism humans are conditioned by their environment and experiences to act without any self-control. This indeed could be seen as an embryonic version of Dweck's (2019) unification theory, where the environment affects beliefs and therefore actions, but just as Dweck and Yeager (2019:482) point out, after behaviorism the pendulum of progress swung to the other end of the continuum, and cognitive processes - the way humans think, organise and develop their intellectual activities - became the centre of attention.

Nurmi and Salmela-Aho's (2017:11-13) go on to describe the path of motivational theory towards what it is today. According to them (2017) Maslow's theory of basic needs dominated the field of motivation psychology for 30 years. Positive psychology followed, with inner desires, goals and impulses at the forefront with the constraints of outer opportunities limiting motivation.

In the 1950's it was proposed that the personal motivations and the outer world were in a communicative relationship, whereas later motivation was put into hierarchical systems: individuals first have a goal which prompts action. This propelled a one kind of renaissance of motivational theory in the United States, where researchers concentrated mainly on individual goals that people harboured. Dweck (together with Yeager, 2019:483) describes the progress in similar terms than Nurmi and Salmela-Aho's (2017), but as people who experienced and worked as researchers of motivation at the time, Dweck, and later Yeager, describe the progress in a slightly different focus. According to Dweck and Yeager (2019) one of the major discoveries towards modern motivation theories was the discovery of learned helplessness in animals in the 1960's. A mammal could be conditioned to believe they did not hold any control to a situation, and when they finally did, they did not act upon an opportunity because they had integrated the belief that action would not yield any beneficial results. The mammals had learned to be helpless. This finding led to the development of the Attribution Theory, which, according to Dweck (2000), is where the Mindset paradigm falls into.

The Attribution theory

The Attribution Theory looked into people's desire to find explanations - attributions - for what happened to them, and that these explanations later shaped their reactions and actions in future events (Dweck 2019:483). Halinen et. al. (2016: 89) divide the Attribution Theory into two separate attribution categories: inner and outer attributions, and state that the theory has been widely studied with the conclusion that the experience or feeling of control increases motivation and gives people the will to continue and strive forward even when the situation would get demanding. In other words: *if people attribute their success to things they themselves feel they can control, they are more likely to feel motivated and less likely to give up*. If they give credit to attributions that come from sources they are not able to control, for example genes, a teacher, or an institution, people feel demotivated and are more likely to give up (Halinen et. al. 2016).

Nurmi and Salmela-Aho's (2017: 14-17) end their historical recount to the recent developments: there exists an emerging consensus that motivation is a learnable and evolvable skill which is built together with the individuals environment; where co-agency between people and interactive relationships play a major role in motivation development.

In more simple words: people affect how others behave. This effect of socialisations, where the surrounding social environment and culture shape how people's behaviour develops, is further discussed when we will look more closely how Mindsets are formed, how they evolve and what kind of interventions have succeeded in shaping Mindsets.

2.3 Motivational theories - close theories to consider

Both Nurmi (2017:13-15) and Halinen et. al. (2016:85, 88) list several motivational theories which are considered popular at the moment among scholars in the educational and psychological field. All these theories seem to concentrate on one or two aspects of motivation processes; what makes people to begin, what makes people to continue, what makes people to stop. All the theories have their one specific concept, but Dweck seems to have grasped a more holistic point of view. In my opinion, Dweck has looked at the

background of human behaviour, instead of merely looking into what happens. Dweck and her colleagues are looking into *why* something happens, and what is the underlying mechanism of human behaviour and how this behaviour could be altered.

Nevertheless, among the several motivational theories mentioned before, Deci and Ryan's Self-Determination Theory is taken here into closer consideration due to the proximity and popularity of it. Bandura's self-efficacy theory is also closely related and has several shared similarities with Dweck's theory, but for the sake of scope, we need to leave Bandura's self-efficacy theory to another time. According to Nurmi and Salmela-Aro (2017:14-15) the Self-Determination Theory is one of the most popular motivational theories of the 2010's. The Self-Determination Theory has been created, studied and further evolved by the two researchers from the University of Rochester: Edward L. Deci and Richard M. Ryan and their multiple colleagues. Vasalampi (2017: 54) claims that the theory is one of the most studied in the world and I am inclined to add that this indeed is perhaps the most well known motivation theory in Finland. This is one of the few theories I have encountered outside my pedagogical studies, and the one which is most discussed among my professional peers, hence, the relevance of Self-Determination Theory to Dweck's theory is of major importance to understand its relevance to the whole field and what it has to add to it.

According to Vasalampi (2017:54), the Self-Determination Theory views people as curious and creative entities who set goals, strive to conquer challenges and integrate these challenges into their self-image. Vasalampi (2017) continues that social environment and the social influences people experience influence the formation of motivation and the personal development an individual experiences. This concept continues on the same path as the the constructivist framework we introduced earlier; we built upon earlier experiences and construct our views, knowledge and beliefs in co-operation and reciprocality with our environment.

Additionally, a major notion in Self-Determination Theory is the distinction between different types of motivation. According to Vasalampi (2017:54-55) the theory emphasises the importance of the type of motivation a person has over the actual amount of it. Deci and Ryan

divide motivation into intrinsic and extrinsic motivation. Intrinsic motivation has been deemed more beneficial and useful since the beginning of Deci and Ryan's studies (Vasalampi 2017:55) and the outline of the theory has several similarities to Dweck's Mindset theory.

According to SDT we act to satisfy our basic psychological needs: autonomy, competence and relatedness, and the reasons and the way we satisfy them creates either intrinsic or extrinsic motivation. Haimovitz et. al. (2011:747) note that intrinsic motivation has been associated with adaptive classroom behaviour, such as persistence, cognitive flexibility, preference for challenge, coping strategies and engagement in learning, and hence it is a major contributor to academic success. They (2011:747-748) continue and point out that strong intrinsic motivation has been seriously linked with academic success, but that this kind of motivation tends to decline over students' academic years. Haimovitz et. al. (2011:747) summarize a number of motivational theories which have tried to pin point the reasons behind the decline of intrinsic motivation. They point out (2011:747-748) that even though important theories name contextual factors for motivational change, (extrinsic reward, environment, social support), in their opinion, personally controllable individual characteristics, such as individuals' beliefs, are what should be looked at when we are trying to find tools for maintaining and producing intrinsic motivation. Haimovitz et. al. (2011:748) go on to argue that these beliefs may even be more malleable than the students' outer contexts, and may serve as a shield against the negative influences an environment may have on a student. Out of the different theories that relate to individual beliefs, Haimovitz et al. (2011:748) elaborate the importance of students' beliefs on the malleability of intelligence, because on their opinion this construct provides a powerful and predictive framework to work with. This notion links Dweck's Mindset theory closely to the Self-Determination Theory.

To test this idea, Haimovitz. et. al. (2011) conducted a study to scope the mediating aspects to the decline of intrinsic motivation. They were able to link Entity Theory, the belief that intelligence is a fixed trait in humans and Ability-Validation Goals, where the student seeks out opportunities to validate their abilities instead of challenging themselves to gain new knowledge, to the decline of intrinsic motivation. The students' entity theory was a significant predictor of decline and maintenance of intrinsic motivation during an academic year *in all*

age groups from third to eight graders (Haimovitz et. el. 2011:750). This provides significant indications that the Self-Determination Theory is closely linked to Dweck's.

As mentioned above, Deci and Ryan have noted that people have different orientations on how they interpret their environment and experiences, and these perceptions affect how they evaluate their needs to be fulfilled. The concept of orientations and perceptions is strikingly similar to the main conclusions in Dweck's Theory and the different paradigms provided by the Fixed and Growth Mindsets. Inside the Self-Determination Theory the orientations also affect how strongly a person feels their need are fulfilled by extrinsic rewards vs. intrinsic rewards. Inside the Self-Determination Theory, autonomy-oriented individuals perceive situations so that they have a possibility to affect situations, controlled-oriented see similar situations as if they don't posses any autonomy, and it seems that Deci and Ryan are talking about the same phenomena, the same mechanisms as Dweck, but they have a different perspective and approach to the same aspects.

What Dweck does, is, she pinpoints the beliefs which are at the core of the orientations, the reasons why people choose to perceive and interpret situations differently and she also theorises how to move peoples' attention towards a direction which increases autonomy-orientation. It is time we finally drove deeper into Dweck's realm. Let's look closer, what are the Mindsets.

2.4 The Mindsets - an overview

"Mindsets are beliefs about whether human attributes are fixed or malleable."

Dweck and Yeager, 2019:486

The core idea and concept of Mindsets is very simple. If a person believes human attributes are malleable, there is a possibility of change, and of control, and therefore there is a reason to act. If a person believes human attributes are fixed, there is no possibility of change, no control, and therefore it would be absolutely ludicrous to even try to act.

Dweck started her career in the 1970's by building upon the fresh foundations of the attribution theory (Dweck and Yeager 2019, Dweck 2000). Dweck and her colleagues soon found out that some of the children they were studying would give up soon after a setback arrived, but some would do the complete opposite and instead of giving up, they would set to work with even greater vigour (Dweck 2000). It was confirmed that children who had equal ability, but different attributions, assigned reasons to success and failure, and would react differently to failure (Dweck and Yeager 2019:483). The attributions could predict a helpless-orientation or mastery-orientation, depending on how they would interpret the failure. The children with helpless-orientation would give up, blame outside factors, entertain themselves with frivolous activities such as drawing or joking, or just simply randomly poke the subject and guess the answer, even if just a while back they had executed successful learning strategies to solve similar problems (Dweck 2000). The children who took on master-orientation tried to seek out what was the root of the problem, used metacognitive thinking to evaluate their process, decided on new strategies and applied greater effort (Tirri et. al. 2018). This work lead Dweck and colleagues to formulate upon the Achievement Goal versus Learning Goal Theory. In the 1980's they concentrated to verify that people tended to have either of the goals and this would greatly impact their long term success. Dweck started to wonder, why would some students be more invested in proving ability (Achievement Goal) and others improving ability (Learning Goal) and from these vigorous studies, and paper after paper, the first forms of *Implicit Theories of Intelligence* emerged (Dweck & Yearger 2019:483-484, Dweck 2000, Tirri et. al. 2018).

Dweck named her theory *implicit*, since the beliefs people hold are usually ideas they are unaware of, and the theory was divided into Entity and Incremental Theories if intelligence. Entity representing the idea that intelligence is an entity; a whole fixed existence inside ourselves, whereas incremental referred to the malleability of intelligence through effort and work. Later on the names were given a facelift so that they could be understood by a wider audience, and the Mindsets are now called the Fixed Mindset (entity) and the Growth Mindset (incremental) (Tirri et. al. 2018, Dweck and Yeager 2019).

Dweck became to theorise that based on their experiences, people formed beliefs which would later on guide perceptions, motivation and behaviour (Dweck&Yeager 2019:483). Dweck and colleagues went on to discover that the Mindsets, which emerge through beliefs and experiences, would form whole meaning systems, consisting of goals, beliefs, attributions and behaviour, that would affect individual behaviour on multiple levels, and eventually their results and success in all areas of life, including the academia.

With both the Fixed and Growth Mindsets, variables such as effort, failure and ability take on different meanings and varied importance, and experiences are interpret through completely different filters (Dweck and Yeager 2019:483).

One of the studies that proved the force and impact a Mindset has through meaning systems, was done at the University of Hong Kong in 1998 (Dweck 2000:22-23). In their study, Dweck and her colleagues collaborated with the University of Hong Kong, where all studies are done in English, to evaluate all the first year students' Mindsets as part of their enrolment questionnaire. The students were asked if they would like to participate in a remedial English course if the University provided such a course. Out of the students who needed the course, majority of the ones with a Fixed Mindset declined the offer, whereas, majority of the ones with a Growth Mindset eagerly said yes!

The Fixed Mindset students would rather take the risk of failure, or ignore the failure, than to confess to themselves or others that they may have a flaw, or that they may have already failed, because, through the logic of a Fixed Mindset, if they had a flaw and they would not be perfect, this flaw would determine and define their abilities as a learner indefinitely.

Mindset variables

The variables that are most strikingly different between the Mindsets, and have such a huge impact, are *effort, failure and ability.* The definitions and meanings the different Mindsets give to these are strikingly different and in the case of the Fixed Mindset, unforgiving. The definitions are presented in the Table 1.

Table 1. Mindset variables

Variable	Fixed Mindset	Growth Mindset
Ability, Intelligence, Talent	Inherited, innert, fixed, automatic, natural.	Maintained and gained through practice and work. Can be evolved and altered with effort.
Effort	A proof of the lack of ability.	A tool and proof that one is progressing and learning new things. A necessary part of learning.
Failure	A proof of lack of ability in all areas the failure touches. A proof of failure to succeed in the said area in the future. Defines abilities, defines possibilities.	A proof that one is progressing and learning new things. A necessary part of learning. Provides necessary information about the learning process. Typically triggers strategy monitoring and greater effort.

Mindset as a cause

Dweck did not only settle to see if Mindsets and outcomes correlated, but she wanted to see if Mindsets *caused* outcomes. The causal role of Mindsets was studied through several interventions and experiments where students were primed for either Mindsets, and consecutive results were measured. When the Mindset was altered, even for a brief moment, the responses and reactions altered with them. One such study was done at the Stanford University in 1998 by Aronson and Fried (Dweck 2000: 35-37). Aronson ja Fried tried to see whether Mindset interventions might remedy the effects of a stereotype threat. Stereotype threat was first linked to Mindsets by Richard Robins and Jennifer Pals at the University of California at Berkeley. They had discovered that the Mindsets were linked to stereotype threat, when they discovered that the African American students at Berkeley were underperforming compared to their Scholastic Aptitute Tests they had taken before entering the university, and that the students with a Growth Mindset were affected significantly less in

a four year longitudial study, than their Fixed Mindset peers (Dweck 2000: 35-37). In their intervention study, Aronson and Fried (Dweck 2000: 35-37) provided Mindset interventions to the African American student population of Stanford University, where they used short films to teach undergraduates about Incremental Theory (Growth and Fixed Mindsets), emphasising the message that every time individuals meet a challenge and use mental effort and learn new things, their brain grows neurons and they become smarter. The students also wrote a motivational letter to their future younger peers, so that the message became more personal to them. The average grades at the end of the school year were measured, and the students who had not received the intervention continued to underperform compared to their caucasian peers, but the students who got the intervention reduced the performance gap appreciably (Dweck 2000: 35-37). This was one of the many studies where the causal link between the Mindset and performance could be reliably measured.

Mindsets and the focus of attention

At the beginning of the 2010's Mindset was taken into new, exciting arenas, when the attendees brain activity was measured on a neural level. The Mindsets predicted how the brain would "light up" after an error. Growth mindset would activate areas related to learning and greater focus, which was not seen with the Fixed Mindset control (Dweck and Yeager 2019). The continuous focus Growth Mindset individuals present to tasks after a failure is one of the striking differences between the Mindsets and one indicator to explain why Growth Mindset is more beneficial for long-term success as it enhances perseverance over giving up.

Greater scale

Now, at the end of the 2010's Mindset interventions are being designed and tested for online scalable level and with two recent studies conducted with 14 000 9th graders and 100 000 primary students in the United States, the correlation of Fixed Mindset and GPA was once again confirmed, together with the assertion that Growth Mindset can promote challenge seeking, resilience and positive outcomes, and that a Growth Mindset can form the core of a larger meaning system that, under favourable conditions, can help people produce thoughts and actions that can help them achieve their goal (Dweck and Yeager 2019).

Critique

Even though the majority of studies on Mindsets confirm Dweck's assumption about the effects Mindsets have on our lives, there are studies where the Mindsets were not found to have an effect, or the Mindset conveyed only minimal effect on a person's life-events or results. Some of the studies which contradict the majority of results concerning Mindsets were summarized by Zhang et. al. (2017:1370). Examples of such studies were French and Greek studies conducted in the early 2000's which did not provide support for the notion that incremental theories affect academic success directly, even tough they did find a correlation between Learning goals and academic success (Zhang et. al. 2017:1370). Both of these studies were done with older university students, and Zhang et. al. (2017:1370) speculate that even though the direct link between Mindsets and academic performance was not confirmed in these studies, it still could be argued that the Mindsets had an impact through goal orientation, in this case; the learning goal.

A number of the most successful interventions in the literature were done with communities which were under a stereotype threat, but with major potential for good results. It is no wonder that these interventions were so successful, since the participants abilities and circumstances were beneficial for success and the only thing hindering their improvement was the thought that they could not control their results. We could argue that in the older students' circumstances where the Mindsets did not provide a clear correlation with the academic results, the Mindsets did not correlate because there was no stereotype threat, the students abilities were high, and they had learning goals even though they lacked a Growth Mindset. However, a meta-analysis by Burnette et. al. (2013) disagrees with this notion by stressing the importance of monitoring and choosing one's strategies.

2.4.1 How the Mindsets function

Dweck herself summarised (Dweck 2000, Dweck and Yeager 2019) that Mindsets work through meaning systems. This means that when an individual has a belief, this beliefs affects the individuals behaviour on multiple and synchronised levels.

In 2011, Haimovitz. et. al. (2011:747) did a study with 978 students from primary and middle school from the third to eight grade. They did a survey at the beginning or the school year to determine the students theories on intelligence (entity or malleable), their need for validation (ability-validation goals) and level of intrinsic motivation. At the end of the school-year they surveyed the students' level of intrinsic motivation again. Haimovitz et. al. linked Ability-Validation Goals as the main mediators with the students who held the entity theory of intelligence. Ability-Validation Goals are goals where an individual seeks to validate their abilities and avoids situations where their presented abilities would be compromised: they try to avoid situations where they might fail. According to Haimovitz et. al. (2011: 748, 750) the students who held an entity theory had a need to validate their academic ability through their schoolwork and were preoccupied to protect their limited intelligence while at the same time their colleagues with a malleable theory of intelligence pursued deeper understanding and invested their energy and efforts to learning, hence, the students with a Learning Goal tried to enhance their learning, instead of just looking smart. Haimovitz et. al. (2011: 748) noted that students with ability-validation goals and entity theories persisted in their academic work and performed well in successful circumstances, but when they were faced with a challenge their performance became poor.

In a 2013 Meta analysis on Mindsets, Burnette et. al. (2013: 655) agrees with Haimovitz et-al.'s notion that goals indeed are a major mediator to understand how and why mindsets produce the results they produce, and that challenging situations are the key to understand the benefits of Growth Mindsets, but in their meta-analysis they were able to separate a more complex and informative pattern of effect and route for the mindsets to take full effect.

In their meta analysis (2013:656) they evaluated and analysed numerous studies, consisting of 113 samples and 28 272 participants. The analysis and evaluation was based on Carver and Scheier's theory of Self-Control (1998) where individual actions proceed through a four part self-control process consisting of

a) *goal setting*, where individuals decide to take on either performance or learning oriented goals, with tendencies of either to approach or avoid a result; for example, to approach

performing perfectly and avoid mistakes, or approach learning while seeking to avoid losing any opportunities to learn,

b) *goal operation*, where individuals act towards their goals with either helpless or mastery orientation,
c) *goal monitoring*, where individuals monitor their progress and adjust their behaviour accordingly, including emotions and expectations which guide their attention and behaviour, and
d) the outcome, *goal achievement*. (Burnette et. al. 2013:656)

Burnette et. al. (2013) were able to recognise this pattern, or flow of action if you will, and analysed correlations and effect sizes in relation to Mindsets. In their analysis Burnette et. al. (2013) were able to conclude that a Growth Mindset mediated the choice of leaning goals and mastery-oriented strategies, and the goal monitoring phase, where individuals would evaluate their progress and alter their strategies and behaviour accordingly. The goal orientation phase proved to have the strongest effect on the end result. The main reasons why this was the case was due to the different meanings individuals assigned to effort and failure.

For individuals with a Fixed Mindset, effort and failure, the signals for low ability, are detrimental and result in depressive thoughts, anxiety and hampered resilience, and hence the individuals do whatever it takes to avoid these feelings. One such example of avoidance is the varied reactions to the threat of failure. Burnette et. al. (2013: 676) summarised that when individuals with a Fixed Mindset are under failure threat they get disengaged from their goal in favour of protecting their self-esteem by avoiding the appearance of incompetence. The logic behind this is that if they fail again, they can protect their self-esteem by claiming that the goal is unimportant to them (Burnette et. al. 2013:676).

Whereas, while both Fixed and Growth Mindset individuals notice a failure, someone with a Growth mindset targets their attention to their failure and tries to find out what went wrong and seeks an altered and improved strategy to fix it (Burnette et. al. 2013: 678). This behaviour is called **mastery-oriented** strategy, whereas the strategy where individuals give up, target their attention to activities which would make them feel better (entertainment,

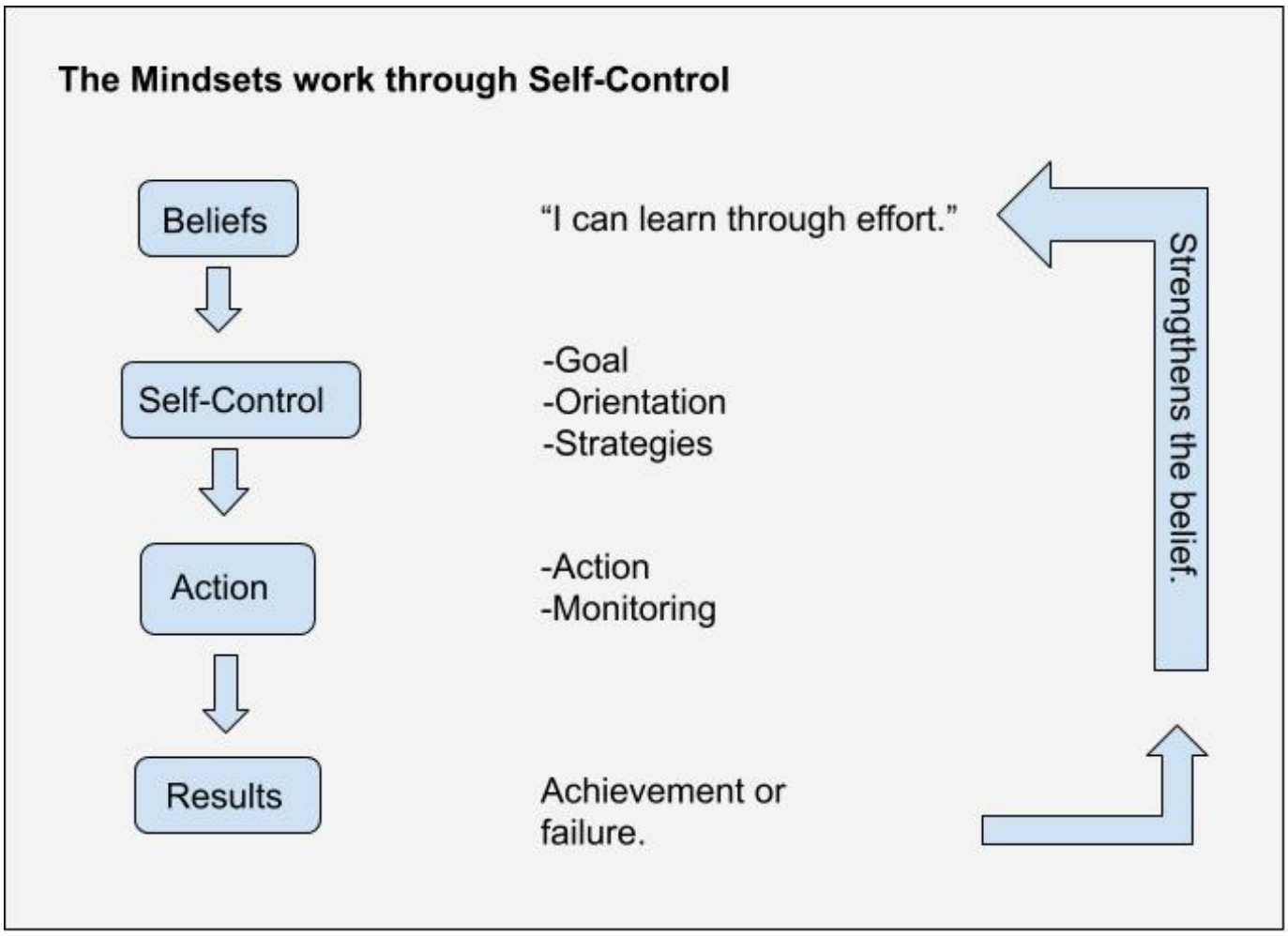
alcohol, drugs, explanation and excuses), or even self-sabotaging strategies, is called **helpless-orientation**.

Reading about self-sabotage was a real eye-opener for me. I quickly related my own way of approaching school work to what could be called self-sabotaging behaviour. Brunette et. al. (2013), Dweck (2000) and Tirri et. al. (2018) all mention this behaviour as a trait associated with the Fixed Mindset. While individuals with the Growth Mindset seek out opportunities to learn and improve themselves, the Fixed Mindsetters do their best to avoid noticing failure and tend to target their attention to things that make them feel good, instead of facing their challenges (2013:678). Not reading for an exam or leaving too little time to write your assignment are classical examples.

The gains for a Fixed Mindset out weight the possible loss. If they happen to gain good grades or finish on time, they gain proof of their intellect: “I mastered it without effort! How smart I am!”. If they get a bad grade or fail to finish on time, they can always say “If I had put a little effort to it I would have mastered it, no problem!”. Fixed Mindset chooses failure on purpose and underachieves, to protect their self-image. Realising there is another option was the first step for me to come out of the pits of the Fixed Mindset. The struggle against the anxiety, really putting effort and doing my best, was a fright, and a real-life example of the reasons why the Fixed Mindset hinders success.

The graph 1: how the Mindsets work through Self-control.

Based on Burnette et. al.’s findings and the literature mentioned in this chapter, I have produced the following chart to demonstrate how Mindsets function, Mindsets function in a self-feeding circular way: beliefs affect self-control orientation and strategies, these affect actions and they affect results. The results will affect the beliefs and the process starts again.



Graph 1. How Mindsets work

The beliefs an individual has about the malleability of a given attribute; for example intelligence, personality or physical fitness, produce belief systems where the individual *targets energy and attention to the things they believe they can control*. Individuals from both Growth and Fixed Mindset are able to execute beneficial strategies when they have not faced a challenge (Dweck 2000), because at that point both of them believe they have command over the situation. However, when a challenge is met, or a situation where a failure becomes a threat, the two Mindsets kick in and start to control the choices the individual makes on their behaviour. (Dweck 2000, Haimovitz 2016, Dweck and Yeager 2019).

If the individual believes new things can be learned or old ones improved through effort, they will place **learning goals**. After they have created their goals, they will use **mastery-oriented strategies** to target these goals. They will target attention to the things that will help them

move forward, and because errors are not a threat to their self-image, but a part of the working process where they gain knowledge of how to move forward more efficiently, they will place more attention to errors and try to correct them. They **monitor** their progress and adjust their strategies accordingly. All of this results in achievement strengthening their beliefs, and the process will start again.

If individuals believe new things can be learned only automatically, and if one has the intelligence and abilities to do it, and that effort is a sign of weakness, not progress, they will create **performance goals** that protect them from possible threats to their self-image. After they have created their goals, they will use **helpless-oriented strategies** to target these goals. They will target attention to things that prove their ability: they may cheat, give up, devalue their target action and they may not put attention to the strategies that are failing, but blame outside mediators for their failure. The process results in possible failure, which causes anxiety, which in turn is toned down by targeting attention to activities that make the individual feel better: entertainment, recounting previous successes, blame their superiors or colleagues, or any other chore to take their mind off from failure.

Brunette et. al. (2013) recount that the self-control phase with the most strong affect to success or failure was **the goal monitoring** phase, where an individual either targets attention to their errors, re-evaluates their strategies and proceeds to act on their evaluation, or targets attention to things that bring immediate pleasure and shift the attention away from the action that could have produced a favourable end result.

Brunette et. al. (2013:679) summarise that other strong mediators of Mindset to achievement are the adoption of mastery-oriented strategies and the avoidance of negative emotions. While the Growth Mindset produces more motivation and vigour when one is facing a challenge, the Fixed Mindset produces anxiety, fear, depression and disappointment. Anyone can understand the implications this has on the well-being and productivity of a person. A challenging situation makes others tick, while others suffer burn-outs. Brunette et. al. (2013) suggest that this should be taken into serious consideration, when Mindset interventions are planned, but before we can change Mindset we need to understand how they are formed.

2.4.2 How Mindsets are formed and how they can be altered

"People's behaviours often come from thoughts and feelings, which live in the brain, and can be changed."

Dweck and Yeager (2019:491)

While Dweck and her colleagues studied the phenomena of Mindset and how it manifested itself, they also tried to discover how the Mindsets were formed and how they could be altered (Dweck and Yeager 2019, Dweck 2000, Haimovitz 2011). Haimovitz and Dweck (2016) examined how parents' mindsets affect the formation of mindsets in children. Surprisingly, when they first examined the link between a parent's and their child's mindset, they found no significant correlation between the two. They went on to hypothesise that perhaps the parents intelligence mindset, and whether the parent perceived intelligence either as fixed or malleable, was not visible to the child, and perhaps what was more prominent were the parents perceptions on failure. Haimovitz and Dweck (2016:861) hypothesised that if parents feared failure to be delibitating, their reactions and behaviour would elicit a message to their children that performance and proof of ability are what they seek in their children, and this in turn would derive the result that the child would believe that intelligence and ability are fixed.

If the parents believed failure to be a part of learning, and a necessary part of it, the children would perceive that their parents were interested and invested in their learning and improving, and this in turn would conclude in the result that the children would come to believe that intelligence is malleable. Haimovitz and Dweck (2016:863) also tested for their hypothesis and other variables that might affect the mindset. One such noteworthy variable was the parent's perceptions of the child's capabilities. The parents' confidence in their child's abilities did *not* correlate with the child's intelligence mind-set, but more important was the parents failure orientation or mindset, just as they had proposed: the child's Mindset was moderated by the parents Failure Beliefs; whether they believed failure to be delibitating or necessary for learning.

According to these findings, what affected a child's Mindsets on intelligence was not what their parents believed, but what their parents presented and conveyed to their children. When the parents conveyed in their reactions and interaction the expectation that failure was not the end of the world, but a sign of an issue that needed more refining and work, and that positive attention and encouragement was given to effort and processes, this made the children to believe that abilities could be improved and that change was possible. This behaviour produced a Growth Mindset in the children.

The parents who worried about failure, pitied and consoled their child when they produced a failure, and targeted attention to successful results, made their children to believe that abilities can not be improved, failure should be avoided, and that the only thing that can be done is pity and emotional protection. This behaviour produced a Fixed Mindset in their children.

Children seem to deduct beliefs from their life experiences and these beliefs affect how they interpret their following experiences. Parents, and everyone in an individual's life, affects how children become to form their beliefs of the world, and later Mindsets. What we target our attention towards is what we prove to value, and this is what our children become to value in their own lives. Perhaps, if we targeted attention elsewhere and gave the children another perspective or a way to see their reality, they may be able to alter their Mindsets.

How mindsets have been changed

Even though Mindsets have been observed to be fairly stable, according to Burnette et. al. (2013:658) there are slight fluctuation of Mindsets from day-to-day, moment-to-moment events, and that temporary changes to Mindsets have been observed in laboratory settings. They state (2013:657-658) that different context and different domains may elicit different Mindsets from individuals and that (2013:679) interventions have been shown to improve both individual motivation and achievement. Much have been studied after 2013, and Dweck and Yeager (2019) account some of the studies done in relation to Mindset interventions until today.

Dweck has studied Mindset interventions in “laboratory settings” where individual Mindsets were influenced in classroom settings and a knowledgable researcher provided students with information about the malleability of ability, talent and intelligence, and the plasticity of the brain, followed by an exercise where the participants were asked to apply what they had just learned in meaningful ways, resulting generally with higher grades, enjoyment of school work and putting more value on academic work (Dweck and Yeager, 2019: 487).

The early interventions have been quite personal and have involved a highly knowledgable professional as the person leading the intervention. The main focus has been in knowledge, and in the idea that once individuals gain knowledge of the Mindsets, and implement this knowledge to their lives, a change in Mindsets is possible. However, as we could see from the earlier paragraphs, individuals are affected by their environments and the cues that they gain from their surroundings. Dweck and Yeager (2019:491) suggest that producing an environment where challenges are greeted with relish, mistakes are learned from and not punished, people collaborate to form effective learning strategies and everyone’s talents are deeply respected and vigorously developed, is an environment that may boost and produce Growth Mindset behaviour.

However, for the students to benefit fully from their environments, a conscious change towards the Growth Mindset is needed. During the recent years Yeager and colleagues have scaled the Mindset interventions into online assignments, where any teacher with almost no prior education on the topic would be able to conduct short interventions on their classrooms (Dweck and Yeager 2019: 487-488).

These studies have provided us with the valuable insight that interventions that

a) focus on mainly Growth Mindset, and
b) highlight good strategy and the role of teacher’s mentorship and students’ access to resources,

provide the students with beneficial tools that may help them to achieve their goals (Dweck and Yeager, 2019: 489-490). These interventions were shown to increase the average grades

among the lower achieving students and raise challenge seeking in all achievement levels (2019:489).

These results are highly motivating for anyone seeking to find tools to motivate action in anyone in their circle of influence. This, indeed, is the main goal of the current Thesis: to find tools for exactly that.

2.5 Summary of the background literature

In her unified theory of motivation, personality and development, Dweck (2017:698-699) points out that the two beliefs that emerge as the most dominant and most effective in relation to motivation, personality and human development, are the dichotomy of good and evil; is the world for me or agains me, and if the person believes they have control over their lives.

Nurmi and Salmela-Aro (2017:14) echo this notion by condensing today's motivational research as follows:

> "There are several theories and the focus is usually in certain environments [education, business, sports]. Most of the theories deal with the same phenomena, but with different concepts…the central concepts affecting motivation are self-image, competence, interest, and the effect other people have on us."

In other words: do I have control, or does someone else have it.

The same idea is repeated in the Self Determination Theory by Deci and Ryan: I am able to alter our reality. What I choose to do has an impact. The parts of their theory; autonomy, accomplishment, and shared community, all link to the idea that an individual, alone and together, is able to alter the current reality: be it themselves or the surrounding entities.

Attribution theory presents multiple options for action, but the one attribution which increases motivation is control: I feel I can control the situation. I can try and even if I fail I can try again and I might succeed. I can affect the outcome (Halinen et. al. 2016:89).

With all these theories it seems to boil down to the one thing: am I able to alter the current condition? Can I change things? Do my actions alter the reality? Because, why would we do

anything if we did not believe our actions had an impact on ourselves and others' lives. If students believe that their grade is affected by the teachers' actions, their competence and teaching methods, or evaluation skills, the students are less likely to bring effort to action (Halinen et. al. 2016). In learned helplessness students blame their genes and outer factors (Dweck 2000). If students believe in their own skills they are less likely to give up, and if error is a sign of opportunities, and not a failure, they continue to work even when facing a challenge (Halinen et. al. 2016:90).

This is why "Yes, we can." works like a mental volcano erupting, releasing energy for action wherever it reaches. The idea that the things we do together can shape our reality is one of the most potent ideas of motivation. Now, the question remains: how do we harness this power?

In the following chapters I will discuss how, in our everyday life, we may detect whether an individual believes that their attributes are malleable (Growth Mindset) and they have control to change them, or if they believe that their attributes are fixed (Fixed Mindset) and they are able to only control their attention, not the end results. Let us find out.

3. THE RESEARCH AIMS AND QUESTIONS

The current study focuses on Carol Dweck's Mindset Theory and on finding ways it can be implemented in real-life mentoring situations in academic surroundings.

The study's main aims are to

(i) recognise from the background literature on Mindsets the characteristic behavioural patterns and beliefs which are typical to Growth and Fixed Mindsets, and

(ii) to determine whether or not these beliefs and patterns can be identified with open-ended questions that could be implemented in free discussions between a mentor and a student.

The study's secondary aim is to discuss whether and how this information could be used to facilitate the students' Mindset towards Growth Mindset.

To successfully reach these aims, the present study has the following research questions:

(i) Do the characteristic patterns and themes related to the Growth and Fixed Mindsets, presented by Tirri et. al. (2018), Burnette et. al. (2013) and Dweck and Yeager (2019), emerge from the qualitative research data through content analysis?
(ii) To what extend does the qualitative identification of patterns and themes related to the Growth and Fixed Mindsets yield information about the participants' Mindsets so that the individual Mindsets may be established as either Fixed or Growth?
(iii) Can the qualitatively established Mindsets be confirmed by quantitatively assigned Mindsets?

As discussed earlier in the background literature, the Fixed and Growth Mindsets tend to produce clear patterns of behaviour and themes within dialogue and thinking. The patterns and themes selected for this study are identified more clearly on the methods section, and explanations are given how and why these patterns were assumed to emerge. The current study aims to identify these phenomena within the qualitative data which was collected through an open-ended questionnaire, and to link this knowledge to a Fixed or Growth Mindset for the individual participants. The final aim of the study is to establish whether this qualitative assessment of Mindsets can be confirmed by quantitatively assigned Mindsets. Along with the qualitative measure, the participants will be assigned Mindsets by using a quantitative assessment tool, where the participants will answer a Likert-scale questionnaire, and based on their answers they will be assigned a Mindset. More detailed descriptions of these measures are presented in the method section.

4. METHODS - The main phases

The research data was collected on two separate sessions with the aim of establishing the participants' Mindsets both quantitatively and qualitatively by using two separate questionnaires. The quantitative questionnaire was used to determine a reliable evaluation on the participants' Mindsets and to use this as a ground evaluation and as a reliability check for

the qualitative measure. The qualitative measure was used because a) there are almost no pre-existing studies which have used qualitative methods to evaluate participants' Mindsets, and b) to identify questions which can be implemented in free discussions between a mentor and a student to establish the student's Mindset.

The data collection was done through two questionnaires presented to a basic studies level English course group at the Department of Language and Communication Studies English section at a Finnish University during the academic year of 2018-2019.

4.1 The target group

I chose this target group because at the beginning of their studies, the university students of Humanities, and especially those studying human sciences such as the English language, are quickly facing situations in which they need to implement new strategies, new understanding and cognitive processes that are unfamiliar to them. I have come to the understanding that in other departments studies involve individual and private performance, such as homework and laboratory work, and the public exposure to errors is not as present, and not as integrative part of the learning experience, than it is at the Department of Language and Communication Studies.

In addition to these observations, the students of English are working in a public arena through interactive group learning processes in which they are both supported and evaluated by their peers, and in which they most often need to use English as their second language. This situation leaves individuals with a Fixed Mindset especially vulnerable to anxieties and negative reactions, and it is reasonable to expect that such reactions will present themselves in the qualitative data. Hence, the students of the English language make an optimal target group.

This said, I am not stating that the first year experience is more harsh or demanding for Humanities students than the students of other departments, but simply presenting the reasoning why Humanities students are a suitable target group, as the method of studying at the Humanities brings out the benefits of a Growth Mindset more quickly and more vocally to

the forefront than it would at the other departments. I base these assumptions of the First Year Experience on my own, and on the experiences of my fellow colleagues from other departments, because within the scope of Master's Thesis I did not have the opportunity to explore more deeply on the field of First Year Experience.

The course which the participants were taking part, was a compulsory English course that is one of the first courses the students of English Language take part in, thus, I expected the students to be new at the University or just starting their studies of English language, and that the group would provide as varied and heterogenous group as possible. I chose this particular course, since the topics are not typically dwelled deeply in common Finnish High School English language studies before entering university, and thus were likely to provide challenges for the participants. I also assumed that the methods of studying during the course and the course exam would elicit typical feelings and experiences related to the Mindsets from the students when they face a challenge.

4.2 The data collection

To maintain the participants' anonymity, I disclosed only the absolutely necessary information about the university, the course, or the group involved. Therefore, I left out all information which might endanger the participants' anonymity, including the course topic.

The quantitative data set was collected on paper during the first lecture of the compulsory basic level English course. The first questionnaire (appendix A) was a quantitative Likert scale questionnaire adapted from Dweck's Theory of Intelligence Scale and Online Individual Mindset Survey (appendix D) described by Hanson (2015: 154-156). For the quantitative data set I was able to collect 33 individual responses.

The second questionnaire (appendix B) consisted of seven open-ended questions which I derived from the research literature. The questionnaire was delivered online through Webropol's online questionnaire tool. The students received a participation link to the questionnaire immediately after their course exam at the very end of their course, approximately three and a half months after the initial quantitative measure.

After returning their exam papers, the students were reminded by their lecture teacher to answer the open-ended questionnaire. The questions were mainly derived from the phenomena, typical patterns of behaviour and descriptions related to Mindsets that were depicted in an article by Tirri et. al. (2018). The questions were designed to elicit answers where these phenomena could become visible. I chose Tirri's article since during the time the questionnaire was produced, Tirri's article was the latest published article I had encountered which had precise, informed and accumulative description of the Mindset related phenomena. For the qualitative data set I was able to collect 23 answers during the first 48 hours after the course exam.

4.3. The quantitative measure - an overview

In most of the previous studies on Mindsets, such as the one conducted by Haimovitz and Dweck in 2016 (2016:859-861), the different beliefs and mindsets have been measured with a Likert scale questionnaire with questions that were designed to indicate whether the participants agreed or disagreed with a given statement. These statements in the Mindset measuring tools were created to measure two opposing views, and to indicate if a given hypothesis had any merit to it. In the previous studies, the participants received statements and were asked how strongly they agreed or disagreed with the given statements. The participants chose to answer from responses which were later coded into six numerals, one to six, number one indicating "I strongly disagree" and number six indicating "I strongly agree". Some of the statements were reversed so that the questionnaire would be more reliable and it would become more unlikely for the participants to simply answer certain answers for the sake of a habit, also so that the wording and statements produced would differ and the participants would be given a change to state their opinion from different perspectives. These answers were reversed numerically, and finally an average was calculated from the answers. A lower number indicated an orientation to the other end of the hypothesis and a higher one vice versa.

If we take into consideration that the human mind is more than zeros and ones, the tool seems to simplify complex human thinking to a plain level. However, in the research literature (Dweck 2000, Zhang et. al. 2017:1364, Burnette et. al. 2013, Dweck and Yeager 2019,

Haimovitz and Dweck 2016, Haimovitz et. al. 2011:749) the researchers tried to measure certain precise ideas and whether opposing ideas had significant effect and meaning and were not aiming to encompass the whole complexity of the human thought. In most of their studies, Dweck and her colleagues received significant results (Dweck 2000).

The Likert scale method relies on the assumption that a certain idea or belief can affect our behaviour, and to test this, Dweck et. al. (Dweck 2000, Hanson 2015) created this measurement tools to find out how the beliefs and their opposites emerge in a population, and what kind of phenomena are linked to these beliefs. The tool has been successfully and widely used (Haimovitz and Dweck 2016, Dweck 2000: 3, Burnette et. al. 2013:655, Hanson 2015) and therefore I chose to use this quantitative measuring tool to determine the participants' Mindsets and to check the reliability of my qualitative analysis.

4.4 The quantitative measure - the procedure

The aim of the quantitative analysis was to determine the participants' Mindsets with a Likert scale questionnaire where the attendees were given statements about intelligence and ability (Appendix A). The attendees had to answer from a scale of one to six how strongly they agreed or disagreed with the statements. The corresponding answers were: strongly disagree, disagree, mostly disagree, mostly agree, agree, and strongly agree.

The data was collected during regular course hours on the course's first assembly.
I apologised to the participants that I was unable to give them specific details on the study, but that I would collect two sets of data for my master's thesis for the English section, one now, and one after the course was finished, and that more information would be provided after the completion of the second questionnaire. I emphasised that answering was optional, and that honesty was a priority in their answers. I also stressed the fact that I would be the only one with access to their answers, and that the questionnaire, and whether they answered or not, would not affect their course in any way. Almost all of the students answered to the questionnaires and I was able to collect 33 answers.

In a similar way to the previous studies on Mindsets (Tirri et. al. 2018, Dweck 2000, Haimovitz et. al. 2016, Dweck and Yeager 2019), I rated the answers from one to six so that numbers one and two pointed to an agreement with the Fixed Mindset, and five to six pointed to an agreement with the Growth Mindset, and three to four something in between. The students answered 11 questions. The numerals for each were calculated together and an average was taken from them. I divided the results into three main groups: Fixed Mindset, in between, and Growth Mindset, just like in previous studies. This method mimicked the previously mentioned studies on Mindset and evaluation which has been established by Dweck and her colleagues throughout numerous studies (Burnette et. al. 2013, Zang et. al. 2017) as a reliable tool to assign Mindsets.

4.5. The qualitative measure - an overview

In previous studies the Mindsets have mainly been defined with the quantitative Likert scale questionnaire where the participants were asked if they agreed with certain statements (Haimovitz and Dweck 2016, Dweck 2000:3, Burnette et. al. 2013:655), and as Schreier (2012: 8-9) states, this method is optimal for hypothesis testing, just as I mentioned was the goal for Dweck and her colleagues. However, to describe material and to recognise common patterns from it, the optimal tools for this are qualitative methods (Schreier 2012: 8-9). The present study is one of the first mixed method studies where participants are answering both quantitative questions and open-ended qualitative questions to determine their Mindsets, and to explore whether qualitative methods may be employed to determine individual Mindsets.

The only study that has taken advantage of partly qualitative measures was conducted by Haimovitz and Dweck (2016:866), where the participants were presented with an imaginary scenario and asked to describe how they would react to it. These qualitative answers were coded with numerical markers and analysed with statistic correlation methods, hence the results were analysed with the content analysis method in a fashion that falls somewhere in between of qualitative and quantitative methods. According to Schreier (2012:15-16), the definition of quantitative or qualitative analysis is not precise, and hence we could even state that Haimovitz and Dweck's study in 2016 may fall under the category of quantitative

research, leaving the present study as the first attempt to employ qualitative methods. The present study will implement the first steps of content analysis in a similar fashion than in Haimovitz and Dweck's study, but with qualities adapted from thematic analysis, producing a more qualitative analysis on the open ended answer data.

Qualitative content analysis is defined by Schreier (2012: 9) as a method of systematically describing the meaning of qualitative material. Bengtsson (2016:8) summarises other scholars and issues Qualitative content analysis as an objective and systematic method to infer valid and reliable information from qualitative data to describe and recognise specific phenomena. Hence, qualitative content analysis seeks to identify, group and understand information from qualitative data.

Thematic analysis, which will be used along content analysis, functions in a very similar manner with content analysis, and is described by Braun and Clarke (2006: 36) as a flexible and easy tool to summarise key features of qualitative data to highlight similarities and differences within that data.

According to Braun and Clarke (2006) the distinctions between qualitative analysis tools are debatable and varied. They state that thematic analysis is often used, but rarely individually named, and often falsely named under categories such as grounded theory or discourse analysis (2006:4). Margrit Schreier (2012:37) likewise states that thematic analysis is a viable option for content analysis and overlaps with it, and that it could even be seen as a form of content analysis where the researcher's focus is on themes in their data or material (Scheier 2012:37-38, Braun and Clarke 2006:4).

Newby (2014:463) agrees with this notion of similarity and states that even though there are distinctive divisions between qualitative methods, they all still aim to create order in the varied and complex data sets, often in a similar fashion. He continues (2014:473, 466) that this is done by shaping the data into units which can then be analysed to give understanding and meaning to the data, and by reorganising and reconstructuring the data to gain information form it, hence, using thematic analysis along with qualitative content analysis is

reasonable and justified if the focus of the research question allows such an implementation of the analysis methods.

Schreier (2012:8-9), Bengtsson (2016) and Braun and Clarke (2006) all emphasise that when one is to choose and use an analysis method one must consider their research question very carefully. The focus of the study is defined by the research question and is the very first and key step in the analysing process, and the catalyst for how the evaluation should proceed. I have chosen content analysis because my aim is to study whether the phenomena and themes associated with the Mindsets emerge from my qualitative material, and if I will be able to recognise thematic patterns within the data. Another qualitative tool, the thematic analysis focuses on the themes mentioned in the data material, and hence it is also an optimal tool for my use.

However, as described by Braun and Clarke (2006) and mentioned by Scheier (2012), thematic analysis is an inductive analysing tool where themes and codes are not pre-made, but emerge from the sample, whereas in my study I have employed deductive coding, described by Bengtsson (2016:12), where I chose prominent phenomena related to the Mindsets from the literature, created my open ended questionnaire by them and created the list of codes I expected to find from the qualitative answers. Nevertheless, I have used insights from thematic analysis to inform myself of the varied versions of qualitative analysis and to produce my own analysis in the hopes to avoid the pitfalls mentioned in the literature, and also to allocate new categories and phenomena if such should arise from the data. Schreier (2012) states that this is often what happens with qualitative analysis and hence I will also employ thematic analysis to my work if and when applicable.

4.6. The qualitative measure - the analysis procedure

For my analysis, I will perform a latent analysis, described by Bengtsson (2016: 8, 10) and Newby (2014:463) where the analysis is interpretative and we do not accept data at the face value, but seek to find hidden meanings. For example, I do not code only a participant's response with please, I will also try to interpret the cause or target of the please, or where the pleasant feeling is aimed at.

According to Schreier and Bengtsson, qualitative content analysis is done by classifying parts of the material as instances of the categories of a coding frame in a manner where the analysis is focused on selected aspects of the material and indicated by the research question (Schreier 2012: 8-9), in other words: one must organise the material in a way that creates meaning with which one can create realistic conclusions (Bengtsson 2016:8).

Bengtsson, Braun and Clarke and Schreier outline the phases of content and thematic analysis in a very similar way, and for this research I will conduct the following analysing process, adapted from Bengtsson (2016:8), Braun and Clarke (2006:34) and Schreier (2012:6):

1. Deciding on the research question.
2. Building a coding frame based on the literature.
3. Arranging the material by the questions to make sure the questions are treated and coded in a similar fashion and proceeding from question to question so that all individual answers to a question are coded before proceeding to the following question and set of answers.

4. Decontextualisation: familiarise with the data and get a sense of a whole.
5. Assign codes.
6. Recontextualisation: re-reading the material, alongside with the codes, and making sure all the material been covered in a consistent manner.
7. The categorisation: reviewing the codes and condensing them under potential themes.
8. Mapping the themes, condensing the themes, and see if a theme dominates a response.
9. Reporting with summaries, categories, themes, vivid and compelling extracts on how the findings correspond to literature.

During every phase I must keep in mind that different interpretations of the same material may be valid (Braun and Clarke 2006:21).

4.7 The qualitative measure - the coding-frame

My aim was to find out what themes emerged from the qualitative data, and whether these themes were related to the Mindsets. I set to find out if it was possible to assign Mindsets for

the participants by the information that was provided by this qualitative analysis. For this analysis, a tentative coding frame was produced *before the analysis was conducted*.

The seven open ended questions on the qualitative measure were composed by me to elicit answers in relation to the common themes mentioned by Tirri et. al. (2018). These themes and how I expected these themes to arise are further elaborated here in relation with each question. The first question will not be dealt with since it simply asked the participants' names. In the following paragraphs, the open ended questions of the questionnaire, and a report on the tentative coding frame are discussed.

Q2: During the course, when were you inspired or motivated?

The question builds on the assumption that the participant was inspired or motivated during the course. This directs the participants to answer in a way where they are expected to have felt such a way, and therefore, this will be expected to affect their answer. With this answer I do not seek to know whether the participants truly felt motivated, but I am interested to discover what instances they describe as motivating.

Since the participants were taking part in a course that was one of the first compulsory courses at the Department of Language and Communication Studies, and the English subject, I expected that for the majority of the participants the study method, the method of teaching, the tasks on the course and the discussions they were expected to participate in were novel or areas they would not be experts in.

Because of these study methods and the novelty of the topic to the participants, the course could forecast the possibility of a failure to the participants, and was expected to require the participants to expose themselves to the public expression of an error. 'Failure' meaning here any kind of erroneous act which did not lead to satisfactory results. People with a Growth Mindset tend to see these kinds of challenging situations and plausible errors as motivating (Haimovitz et. al. 2011:749, Dweck 2000:3,10), whereas individuals with a fixed mindset are more likely to become frustrated and lack motivation (Haimovitz et. al. 2011:749, Dweck 2000:3, 6).

Another pattern that emerges from the literature (Dweck 2000:10) is that Growth Mindset elicits enjoyment, inspiration and motivation when the individual is facing a challenge, or is progressing and learning new things, whereas a Fixed Mindset derives enjoyment from successful performance, and approval from peers and authority. In relation to the Q2, I formed the following codes:

Table 2. The codes for Q2

Fixed Mindset	Growth Mindset
fear of failure frustration from failure lack of motivation enjoyment of performance	inspiration from challenge motivation to develop a skill enjoyment of progress

Q3: When you succeeded, why do you think you did?

The question builds on the assumption that the participant succeeded during the course. This directs the participants to answer in a way where they are expected to have done so, and therefore, this will be expected to affect their answer. With this answer I do not seek to know whether the participants truly succeeded, but I am interested to discover what instances they describe as such.

Accoring to Dweck (2000:57) Fixed and Growth Mindsets view success differently and give it different meanings. For Fixed Mindset individuals success is the result of your skills or abilities, and for Growth Mindset individuals success is the result of the effort one exerts upon a task. The logic behind the latter is that one may be skilled, but what truly matters are the strategies and effort one puts in to complete a task, and the combination of these results in success. However, for Fixed Mindset, effort is a sign of failure or of lack of skills and therefore an individual with a Fixed Mindset is more prone to emphasise their pre-existing abilities (Zhang et. al. 2017:1365, Dweck 2000: 3-4, 39-40, 62-63).

In relation to the Q3, I formed the following codes:

Table 3. The codes for Q3

Fixed Mindset	Growth Mindset
definition of self through innate abilities possessing an innate ability lacking an innate ability	definition of self through effort possessing a learned ability lacking a learned ability

Q4: During the course, what were your initial thoughts and reactions when you faced a challenge or failure?

The question builds on the assumption that the participant faced a challenge or a failure during the course. This directs the participants to answer in a way where they are expected to have done so, and therefore, this will be expected to affect their answer. With this answer I do not seek to know whether the participants truly faced a challenge or a failure, but I am interested to discover what instances they describe as such.

According to Dweck (2000:8-9), individuals with Fixed and Growth Mindset both tend to notice mistakes and failures, but after identifying an error, the individuals with a Fixed Mindset try to avert their attention elsewhere to alleviate the anxiety that is caused by the challenge or failure which was noticed.

Growth Mindset, however, enables the person to monitor their behaviour, seek out what went wrong or caused the failure, adjust their strategy accordingly and move onwards with stronger vigour (Dweck 2000:8-9). In addition to this, an individual with a Fixed Mindset gives attributes and reasons for the failure that are either outside of their control; for example their teacher, peers, resources, or define their innate abilities according to the failure (Haimovitz et. al. 2016).

In relation to the Q4, I formed the following codes:

Table 4. The codes for Q4

Fixed Mindset	Growth Mindset
Helpless-orientation (giving up, self-sabotage) anxiety disappointment towards innate self disappointment towards innate abilities	mastery-orientation (choosing and using strategies) problem-solving disappointment towards own actions disappointment towards own strategies

Q5: After a challenging task or exam, how do you recover?

In this question I did not specify a particular exam or task, but I was referring to any exam or task the responders might have participated before answering the questionnaire. This question is based on the same assumption than the previous one: an individual with a Fixed Mindset will drain out their energy when they are facing a challenge, whereas a Growth Mindset will motivate and energise a person when they are overcoming a challenging situation. I expected to hear that the individuals with a Growth Mindset do not require recovery from a challenge.

However, the question imposes that in the given situation a recovery is needed, and therefore I expected that the responders with a Growth Mindset would be interested on how to learn and improve, and to target their attention to the task or exam. I also expected them to think about their answers and speculate their results, or how they might have done better in the task or exam they would be describing in their open answer.

For the individuals with a Fixed Mindset, I expected them to divert their attention elsewhere as soon as they are able to, and to entertain themselves with something that will divert their feelings and thoughts elsewhere away from the task or exam.

In relation to the Q5, I formed the following codes:

Table 5. The codes for Q5

Fixed Mindset	Growth Mindset
Attention away from the task seeking pleasure / entertainment	Attention to the task seeking rejuvenation

Q6: After receiving praise from an authority, what do you feel or think?

I expected that receiving praise feels good for everyone, but that individuals with a Growth Mindset puts less desire for such activities. According to Dweck (2000:15-16), Zhang et. al. (2017:1364) and Burnette et. al. (2013:659), the Fixed Mindset drives individuals to pursue performance goals, goals where their abilities and performance is revered above their actions or persistence.

Therefore, I expected the individuals with a Fixed Mindset to enjoy praise strongly, whereas, individuals with a Growth Mindset are likely to enjoy praise, but do not pursue it as strongly, since, according to Dweck (2000:3, 15-16), Zhang et. al. (2017:1364) and Burnette et. al. (2013:659), individuals with a Growth Mindset are more likely to pursue learning goals where their main aim is not to receive praise, or perform well, but to learn and understand the things they are involved with.

In relation to the Q6, I formed the following codes:

Table 6. The codes for Q6

Fixed Mindset	Growth Mindset
Attention on praise Attention on performance attention on intrinsic abilities feeling good expectation of praise appreciation of praise	attention on learning attention on improvement feeling good expectation of evaluation/feedback appreciation of feedback on progress

Q7: What does “lifelong learning” mean to you?

One phenomena which was mentioned by Tirri et. al. (2018) was “lifelong learning”. According to them, individuals with a Growth Mindset employ the idea of continuous progress and improvement to their lives, whereas the individuals with a Fixed Mindset do not tend to see their lives in such a way. In my question I tried to emphasise how this concept connects to the participants personally, what it means ‘*to you’*, and I expected that the individuals with a Growth Mindset show personal attachment and value on lifelong learning, whereas the individuals with a Fixed Mindset are more prone to simply describe what lifelong learning means, without connecting it to their own lives.

In relation to the Q7, I formed the following codes:

Table 7. The codes for Q7

Fixed Mindset	Growth Mindset
Lifelong learning as a concept definition of lifelong learning	Lifelong learning as a personal concept definition of lifelong learning in relation to self

Q8: Compared to your usual abilities, how well did you perform during the exam?

In this question I referred to the course exam the participants took on their last course session right before receiving the online link for the qualitative Webropol questionnaire via email. With this question I was interested to see what attributes would the participants give to their success or failure, and what expectations they held. According to Dweck (2000), individuals with Fixed Mindset tend to give reasons beyond their scope of function when they are expecting to fail. Such reasons might be sickness, anxiety, bad weather, or any other occurrence that was out of their hands. Furthermore, I expected that the Fixed Mindset individuals do not want to theoretize their performance if they feel they did not succeed, and are therefore likely to answer very shortly or with vague meaning, to divert their attention elsewhere as soon as possible. However, if they did feel like they succeeded, they are likely to

emphasise their perfect inner ability for their success, produce longer responses with more elaborate descriptions of their abilities. According to Dweck (2000:7-8), individuals with a Fixed Mindset are more likely to evaluate themselves to either end of the spectrum of success: either as complete failure or as complete success, whereas their Growth Mindset peers tend to be more closer to the truth in their evaluations and avoid either end of the assessment spectrum.

Furthermore, the Growth Mindset individuals are more likely to evaluate their performance from the perspective of learning. I expect them to mention learning, learning techniques or strategies they have employed to properly navigate the course. If they expect to fail, they might take time to evaluate their actions, strategies and effort, and how they could remedy the gap in learning. If they expect to succeed, I expected them to assign their success on their actions and strategies, and that they are prone to be satisfied with their progress.

In relation to the Q8, I formed the following codes:

Table 8. The codes for Q8

Fixed Mindset	Growth Mindset
Long answer, inner stable attributes short answer, outside attributes evaluation of abilities success/failure in performance	progress effort evaluation of effort success/failure in learning

4.8 Reliability and validity

According to Schreier (2012:27), in qualitative analysis validity is more important than reliability, as the qualitative measure in itself does not contain markers which could be completely reliably confirmed, but an integral aspect of the method is provided by the researches who will always remain a subjective observer.

I will ensure the validity of my method by the overall consistency and quality of my research and my continuous effort to stay objective, while being aware that, as Schreier (2012: 23) mentioned, the researcher must acknowledge that they are an active participant in the research process and need to be aware of the ways in which they co-produce their findings. I ensured this by voicing the possible personal motives and perspectives which might impact the analysis process and by conducting the coding and analysis process in the systematic manner as was described earlier in section 4.6.

In Haimovitz and Dweck's study (2016:866) the responses were coded by two independent coders to maintain reliability, but in the current study such measures were not available. To check for the reliability of the qualitatively made analyses the qualitative results were compared with the quantitatively attained results.

5 RESULTS AND ANALYSIS

In the following chapters I will be reporting both the quantitative and the qualitative results and provide simultaneously the analysis of the results. The results will be partly discussed during the reporting phase, and a combined, separate and concise discussion will follow after this chapter.

5.1 The quantitative results

On the the quantitative questionnaire, the students were able answer on a scale from one to six, and hence there were five numerals. There were three categories of Mindset, and therefore I assigned values for each in the following manner:
I divided five by the number of categories (three) to get the value for Fixed, Growth and in-between categories. I also wanted to see who in the in-between group would be inclined towards either of the main groups, Fixed and Growth, and therefore I divided five with two to get the centre point value for the whole set. Hence, I was able to divide the in-between category into two subcategories.

Since 5/3 = 1,7 I gave the main categories the following values:

Table 9. The values for the three main Mindset groups

Value	Mindset group
1 - 2,6	Fixed Mindset
2,7 - 4,3	In-Between
4,4 - 6	Growth Mindset

Since 5/2 = 2,5 the following values were given for the In-Between sub-categories:

Table 10. The values for the in-between sub-categories

Value	Mindset group
2,7 - 3,4	In-Between, but inclined towards the Fixed Mindset
3,5 - 4,3	In-Between, but inclined towards the Growth Mindset

In the following tables I gathered the results of the quantitative questionnaire measure:

Table 11. The results for the three main Mindset groups

Value	Mindset group	Number of participants	Percentage out of the total number of participants
1 - 2,6	Fixed Mindset	3	9 %
2,7 - 4,3	In-Between	18	55 %
4,4 - 6	Growth Mindset	12	36 %

Table 12. The results for the two in-between sub-categories

Value	Mindset group	Number of participants	Percentage out of the total number of participants
2,7 - 3,4	In-Between, but inclined towards the Fixed Mindset	3	9 %
3,5 - 4,3	In-Between, but inclined towards the Growth Mindset	15	46 %

Usually in Dweck's (Tirri et. al. 2018, Dweck and Molden 2017:136) studies all the cohorts had 40% of Growth Mindset, 20% of in-between and 40% of Fixed Mindset. In the current study the Growth Mindset group was close to the usual rate (36%), but the amount of in-between was alarmingly high (55%), and Fixed Mindset curiously low (9%). Furthermore, the in-between group which inclined towards a Growth Mindset (46%) was more than four times bigger than the one inclined towards the Fixed Mindset (9%). As stated, in the previous studies the balance between the Mindsets have been equal, however, in these results this equilibrium is disturbed and there seems to be a shift of balance towards the Growth Mindset indicating a larger appearance of Growth Mindset individuals than has been shown in previous studies.

5.2 The qualitative results - Analysing the Mindset phenomena

Throughout the qualitative data, I was able to identify phenomena related to the research questions. As was expected in the coding frame developed before the coding, individual codes gravitated to particular open-ended questions in the qualitative questionnaire. Besides this, in the Growth Mindset category, the frequency of codes gravitated towards specific individual codes and there was a more varied multitude of codes within the Fixed Mindset category. Throughout the coding process also new codes were created to cater the phenomena rising from the material.

The trend where the Fixed category received more varied codes may be partly explained by the bias caused by my own judgement: I believe I am harbouring a Fixed Mindset myself, and the ideas and the thought processes of this side of the Mindset continuum are therefore more familiar to me, and perhaps more easily recognisable. Therefore, I may have leant towards these findings in my evaluations. This might be the cause to some of my conclusions, and this is an important notion for any mentor who seeks to understand the inner workings of someone else's mind. My tendency to assign more varied Fixed Mindset codes is an example of our tendency to see in others what we have inside ourselves, and this is an important aspect to keep in mind whenever we try to evaluate something which is outside of ourselves.

In the following tables I have gathered a brief summary of the code categories and their emergence in the open-ended questions. Later on in this chapter I will discuss how the codes emerged in relation to the open-ended questions. The question number one and Person 1 are omitted from the results as they were blank example sheets in my own data bank. For the sake of clarity and to preserve the participants' anonymity, I have named the participants by their response order as Person 2, Person 3 and so forth. In my analysis concerning the question number seven and nationalities, I have left this naming out to better preserve the participants' anonymity. I have also omitted indentifiable information out from the example extracts to better enhance anonymity. Codes are at times bolded to highlight which codes are at the focus of discussion and extracts of data are shown in italics when embedded inside a body of text.

Table 13. The codes for the Growth Mindset category

Codes for the Growth Mindset	**Number of appearances**	**In responses to the questions**
Mastery-oriented	40	2, 4, 5, 7, 8
monitoring	20	3, 8, 2, 4, 6
co-operation	13	7, 2, 3
progress	4	6, 3, 7, 8
Effort	8	3
Continuity	8	7
Learning Goal	4	2
Rejuvenate	3	5
Positive expectation	1	5, 8
Attention to task	1	5
Definition to failure	1	5

Table 14. The codes for the Fixed Mindset category

Codes for the Fixed Mindset	Number of appearances	In responses to the following questions
Perfomance Goal	18	2, 6, 3
Avoidance	14	5, 4
Outer attributes	13	8, 6, 3
Doubt	11	8, 3, 2, 5
Negative expectation	11	6, 4, 8
(attention, definition, critique to) Self	10	2, 4, 5, 7, 8
Not Feeling Good = nfg	9	4, 5
No monitoring	7	3, 4, 8
Strong evaluation	5	2, 4, 6
Helpless-orientation	4	3, 4, 2
Outer motivation	4	5, 6
No motivation	4	2
passive voice	5	7
no progress	5	7

5.2.1 Evaluation of the responses to the open-ended questions

In the following paragraphs I will discuss the evaluation of the responses to the open-ended questions by reporting how the typical phenomena related to the Mindsets emerged from the research data in the form of codes and how the analysis process was conducted. I will not be discussing all of the codes, but will highlight the significant phenomena related to the Mindsets and the questions that evoked them. The report on the analysis process will be arranged by the order of the open-ended questions and several of the codes will be discussed in relation to multiple of the question. This arrangement enables us to view the different Mindset related phenomena in relation to each of the questions to better evaluate the usefulness of the questions when we are aiming to assign the individual Mindsets.

a) Open-ended Q2: During the course, when were you inspired or motivated? The question number two elicited the following Growth Mindset codes: mastery-oriented

(challenge), learning goal, monitoring and co-operation. These codes were few of the most clearly recognisable codes and classic hallmarks of a Growth Mindset (Dweck 2000, Tirri et. al. 2018, Dweck and Yeager 2019). The Fixed Mindset codes were performance goal, self, strong evaluation, no motivation, doubt and helpless-orientated.

We can immediately see that the variance is much greater in the Fixed category and the analysis process in the Fixed category is hence more complex. All of these codes were presented in the literature (Dweck 2000, Tirri et. al. 2018, Dweck and Yeager 2019) as common phenomena in the Fixed Mindset, but out of these, performance goal, strong evaluation and helpless-orientated are the most vocally recognisable and telling about the Fixed Mindset. Hence, in question number two these codes will be evaluated more explicitly.

The mastery-oriented and learning goal codes were assigned to the blocks of data where the participant's relation to challenge and learning were portrayed as positive or empowering.

Example 1.

Person 21: "Discussions with [teacher's name] and the chance to write an essay individually during the exam."

Both of these occurrences, a discussion with the teacher and writing an essay during the exam, can be seen as challenging incidents, and the responder explicitly states that these are the situations when they feel motivated; a clear sign of a positive relation with challenge, and thus a Growth Mindset code.

Incidences when the individual signalled a maintained motivation throughout challenges, or excitement for an opportunity to learn, were also assigned as 'mastery-oriented', or more specifically '**learning goal**' if learning was clearly stated as a goal.

One example of such, was example 2.

Person 12: "Every class, it is a really interesting course!"

In this response the individual signals that their motivation was maintained throughout the course, and their desire to learn was deducted from the fact that they mentioned *it* to be a course, where learning is generally the main activity, and therefore the focus is on learning.

Another such example is provided by example 3:

Person 8: "I was motivated because I wanted to learn a lot."

In this response the learning goal is stated clearly and therefore the response was reliably coded as **learning goal**.

The Monitoring code was a new code I developed during the analysing process. It encompassed the situations where the participants were analysing or being aware of their progress, their actions and strategies, or of their learning process. **Progress** was also a code on its own, which was later used to put emphasis on the development, or moving forward, that the participants took part in or commented consciously, but progress was not used as a code in this question.

During my analysis, **monitoring** became to play a major role when assigning Mindsets, and I found it to be one of the most interesting codes. In the literature (Dweck 2000, Burnette 2013), the Self-Control phase of Monitoring was mentioned as the most crucial one when we are to look at success and why Growth Mindset leads to beneficial ends, and therefore I gave the incidences of monitoring extra weight when I later assigned individuals their Mindsets.

Signs of monitoring were present in example 4.

Person 17 : "I was inspired when…was able to come up with some original ideas…and an impression that I was able to critically look at texts."

Here person 17 is able to name their development process and what lead them to their success, which is a clear signs of monitoring. Otherwise, the question number two did not elicit clear occurrences of monitoring, whereas the question number three was full of them. More about those later on.

The co-operation code. This was a code which originally was omitted from the coding frame, however, when I encountered co-operation, I was reminded that in the literature (Dweck 2000:43) individuals with a Growth Mindset are more inclined to co-operate with others and they especially enjoy sharing their knowledge and helping others to develop together abilities and knowledge, whereas individuals with a Fixed Mindset are more prone to see others as competitors fighting for the single spot in the limelight, rarely enjoying or voluntarily involving in co-operation. Hence, I added co-operation to the coding frame and it resulted in being one of the most frequent codes. However, the difference between showing off one's talents in discussion or sharing one's knowledge for the benefit for all is a thin line and at times it was challenging to reliably assign co-operation to the material.

One clear incidence of co-operation was shown in example 5.

Person 13: "[I was motivated] When we were going through the texts together and I heard others' opinions and thoughts about the texts."

Not only is the person inspired by working together, but they also enjoy hearing others' opinions. A Fixed Mindset person would see such success of others as a threat and view it as a competitive situation where they would need to measure up or reach even higher than their peers. Here the person is stating clearly the complete opposite and hence this block of data can be reliably coded to the Growth Mindset category.

Same phenomena was present in example 6.

Person 9: "I was motivated during group discussions."

Here co-operation clearly occurs, but the true reasons behind enjoyment and motivation are questionable. Does delight or motivation come from the sharing of knowledge or being able to perform for others? For the sake of consistency, if nothing indicated otherwise or gave information to the other direction, whenever situations as such occurred I would code the block of data to the Growth category for the benefit of the participant, based on the indication from the quantitative measurement that the participants are more likely to be Growth Mindset than Fixed.

The performance goal. The performance goal is one of the most prevalent and definitive phenomena in the Fixed Mindset (Dweck 2000, Burnette et. al. 2013), and therefore it is one of the most important codes. With the performance goal individuals seek to look good, seem smart and perform in a way which gives them praise and glory, often avoiding mistakes, challenges and failures, and striving for perfection.

This showed in example 7.

Persons 11: "…I was motivated to complete the course… Every time I analysed a piece of work right, I felt motivated because I was one step closer to complete the course."

A Growth Mindset individual would be motivated by the progress they made, because they felt they had understood something new and learned something, not because they are one step closer finishing a task, or completing a set of outer requirements. In example 7 Person 11 puts specific emphasis on the completion of the course by mentioning this twice as their source of motivation, which is an outer requirement or indicator of performance. Hence, this response was coded as **performance goal**.

Example 8.

Person 6: "When I felt like I was on top of things."

Example 9.

Person 7: "…when I already knew something about the topic."

In these examples the participants drew motivation from performance itself; from incidences where they were able to be certain they would be correct. As discussed several times earlier, a person with a Fixed Mindset wishes to perform well and tries their best to avoid making mistakes. They shy away from situations where they might stumble and they lose interest if they do. In the examples 8 and 9 the individuals draw motivation and inspiration from situations where they could perform well and there was no worry of failure, therefore the extracts were coded as p**erformance goal**.

The strong evaluation code. According to Dweck (Dweck 2000, Dweck and Yeager 2019, and Haimovitz et. al. 2016) people with a Fixed Mindset tend to over exaggerate and place more testimonial value on separate incidences. This tendency is voiced by the strong expressions and the lexical choices they have, and by inflating the situation. This tendency works both ways: things might be amazingly wonderful or unbelievably horrendous, but never quite something in between. In a similar vein, individuals with a Growth Mindset tend to foster a more reliable view of their actual skills and abilities. Fixed Mindset individuals inflate their stance to either end of the skill spectrum: they tend to see situations, people, performance and skills either perfect or completely void of achievement.

This is seen in example 10.

Person 4: "Not at any point really, since literary studies are definately not my cup of tea."

Here *really* softens the impact, but *definitely* speaks for another tone and puts strong emphasis on the lack of skills. The question number four elicited altogether more of such responses and with this question we'll discuss other examples of this code.

b) Open-ended Q3: When you succeeded, why do you think you did?

Question number three elicited the following Growth Mindset codes: monitoring, effort, co-operation, progress, and the following Fixed Mindset codes: performance goal, helpless, outer attribution and self-doubt. Out of these codes, monitoring, effort and outer attribution were most vocally visible in the responses to the question number three.

The monitoring and effort codes. As mentioned before, monitoring is one of the most crucial links between success and Growth Mindset, and an action that typically is not present in Fixed Mindset individuals undertakings. Monitoring encompasses the questions 'Where am I now?', 'Which strategies have worked, which have not?' and 'How should I alter my actions to reach my goals?'. These subparts of monitoring were taken into consideration while assigning this code. Along with monitoring, **effort**, is also a definitive aspect of Growth Mindset (Burnette et. al. 2013). Individuals with a Growth Mindset link their success to effort

and often see success as a direct result of applied effort, hence, extra attention was placed on both monitoring and effort.

Effort is visible in example 11.

Person 16: "I had gone over similar topics in high school so the contents of the course were quite familiar to me"

Here the responder puts emphasis on earlier effort and was able to monitor and evaluate their abilities. Their use of the word *quite* enhances the reliability of the statement: it makes it more trustworthy and void of exaggeration, which would be assigned as a Fixed trait.

The evaluation of their learning process was evident in example 12.

Person 10: "When I got familiar with the terms that were needed during the course it became easier to analyse different texts."

Person 10 was able monitor their progress by stating what was needed to progress and how this affected their performance: in their own words *it became easier*.

Example 13.

Person 7: "I had done my research beforehand.."

Example 14.

Person 8: "Because I worked hard"

Example 15.

Person 9: "Because it was due to all my hard work I had put in."

In the examples 13, 14 and 15 the responders handed the responsibility of success to their effort. These individuals were aware of the role effort plays in success and were vocally aware of it.

The outer attribute code. In this Fixed Mindset phenomena the responders place emphasis and blame on outer attributes, such as bad weather or a physical ailment. Growth Mindset individuals may also be aware of outer attributes, but they tend to monitor how they might function better in their present circumstances instead of shifting blame onto them as Fixed Mindsetters do (Dweck 2000).

In the responses to the question number three several responders explained their success or the lack of it on outer attributes.

Example 16.
Person 2: "The teacher explained well",

Example 17.
Person 5: "…because the lessons were interesting"

Example 18.
Person 14: "the topic was clear"

Here the responders saw that their success was a result of their teacher's explanation, how the lessons were, and that the topic in itself had attributes which enabled the success by being *clear*.

c) Open-ended Q4: **During the course, what were your initial thoughts and reactions when you faced a challenge or failure?** This question elicited the following Growth Mindset codes: mastery-oriented, monitoring, and the Fixed Mindset codes of avoidance (attention elsewhere), negative expectation, self (comparing to others, disappointed), not feeling good (nfg), no monitoring, strong evaluation and helpless.

A question about failure naturally provided a plentitude of Fixed Mindset codes, as expected. I was, however, surprised by the multitude of codes associated with this question and the contrast between the lack of variety within the Growth Mindset codes. As mentioned before,

the plentitude of Fixed codes was prevalent throughout the questions, but was especially pronounced in the responses to question number four, where the Fixed category provided seven different codes, whereas the Growth Mindset yielded only two separate codes.

The mastery-oriented code. In response to question four, this code presented itself in two different ways. One of them was how 'failure' was defined.

Example 19.

Person 19: "I did not think "failure" as something so important and I don't really react strongly if I'm not understanding something."

The mastery-oriented code was present also in the way the responders viewed challenge.

Example 20

Person 20: "When I faced a challenge I was motivated to get through and solving it."

Here the emphasis is on steadfast effort and there is no signs of giving up.

Attention was also given to **monitoring** in example 21.

Person 9: "I was confused as to why it was."

Here the participants was actively seeking to answer the question 'why' and understand what went wrong, a vocal Growth Mindset phenomena.

The strong evaluation, helpless and avoidance codes. As mentioned before, the strong evaluation code was one of the clearest examples of Fixed Mindset and therefore an important code for our analysis. This code was often paired with the **helpless and avoidance** codes. In challenging situations, or in situations where they have failed, Fixed Mindset individuals try to alleviate the anxiety caused by the ill performance and they try to focus their attention elsewhere, and hence employ **avoidance**. **The helpless-orientated code** can likewise be seen as a cornerstone of the Fixed Mindset (Dweck 2000, Burnette et. al. 2013), where the

individual, when facing a challenge or a failure, gives up, evaluates their situation as worse than it is and stops using their whole capabilities, often underperforming.

Example 22.

Person 4 : "My initial thoughts were to just freeze…because for 95% of the course I had no idea what anyone was talking about."

In example 22 t**he strong evaluation, helpless-orientation codes** are clearly present. Person 4 reports that their reaction to failure is inaction, which is a classic reaction from a Fixed Mindset person to failure, and a clear **helpless-orientation** code. This is followed by **strong evaluation**: It is very likely someone feels for a while they don't have any idea what is going on, but in my opinion, for a university students it is quite unlikely to feel this way for almost all of the time. University students need to pass rigorous testing and perform very well in multiple subject areas before they can get into the university, and hence, such a situation where the student truly does not understand anything is highly unlikely. Therefore, the person *feels* like they had no idea, and such a statement is over exaggeration.

Helpless-orientation showed in other responses as well.

Example 23.

Person 6 :"To give up and do something else."

In this example, instead of forming another strategy, Person 6 would give up. After giving up and employing helpless-orientation strategies, **avoidance** shows up in Person 6's response, they would *do something else* and target their attention elsewhere.

Person 22 would also be losing hope and Person 2 would detach themselves from the situation.

Example 24.

Person 22: "That this is hopeless!"

In example 24 the person is falling victim to helpless-orientation while they would give up, whereas in example 25 the responder would not invest any more energy on the difficult task, hence try to avoid the situation.

Example 25.

Person 2: " 'Ah, sure, feck it.' I didn't want to do the exercises."

In the occurrence of failure or while facing a challenge, Fixed Mindset individuals are prone to ignore the problem, aim their attention elsewhere, exaggerate the situation and employ helpless strategies, such as guessing or giving up (Dweck 2000, Burnette et. al. 2013). What drives them to do this is speculated by Dweck and her colleagues to be negative feelings about the situation, and hence the code nfg, **not feeling good**, was used to categorise Fixed Mindset.

The Not Feeling Good code. This code was quite simple to code. Whenever a challenge or failure was paired with negative feelings, the code was used. The occurrence of the code concentrated on the questions number four and five where the responders were presented with situations with challenge or failure, hence, it was expected and highly likely that the responses would also contain this code.

Example 26.

Person 14: "…was kind of depressed"

Example 27.

Person 18: "Fear for reading.."

Example 28.

Person 3: "…felt really bad and disappointed in myself."

Examples 26, 27 and 28 showed clearly negative feelings in response to failure and were easy to code as Fixed, however, example 29 shows indications of a more complicated response where negative feelings are not as clearly pronounced.

Example 29.
Person 21: “Feeling a bit embarrassed”

Throughout the analysis, the responses such as example 29 were coded either neutral, or Fixed with a question mark, and such evaluations would be confirmed or changed later depending on the individual’s other responses, or the context of the responses that the participant produced.

The no monitoring code. Example 30 was the first clear encounter with the ‘no monitoring’ code.

Example 30.
Person 12: “Well, the first challenge was the test and it went pretty bad..”

Here I assigned **no monitoring**, since I highly doubt the test was the first occurrence of challenge to the student, especially if the test did not go well. If the student truly believed that the course exam was the first time they encountered challenge, then they did not monitor their success’ or failures honestly during the course, but blissfully floated on through the course. The importance of monitoring for the Mindsets was evaluated earlier, and hence the absence of monitoring was dealt with equal attention.

d) Open-ended Q5: **After a challenging task or exam, how do you recover?**
The question number five attracted the largest number of code categories. This could be seen as a fruitful result as the question evoked a plentitude of answers, but it could also be the achilles heel of the analysis process as I was unable to assign the more prevalent codes reliably and assigned new ones as I went along.

The question elicited the following Growth Mindset codes: mastery-oriented, rejuvenate, positive expectation, attention to task, definition of failure, and the following Fixed Mindset codes: avoidance, (definition of) self, nfg, outer motivation and self-doubt.

The Rejuvenation code. This code was assigned to the extracts of responses where it could be evaluated that the aim of the responder was to gather strength for the next upcoming challenge. Assigning this code was a challenge, as the extracts of data could also be seen as a Fixed code, **avoidance**. The two following responses were assigned as rejuvenation based on the fact that in them attention is not vocally targeted outside of the challenging task, but to the relaxing activity.

Example 31.

Person 9: "I put on music and just lay down doing nothing for a while"

Example 32.

Person 15: "I take a nap"

Same logic was applied to the rest of the material.

The Mastery-oriented code: attention to the task. With responses to the question number five the mastery-oriented code was assigned to the material which showed attention towards the task even though the task was challenging. This brings out Growth Mindset's curiosity to monitor their performance and see what strategies and actions brought fruitful results. This kind of action is shown in the following example where the responder keeps their attention on the task and monitors their work.

Example 33.

Person 21: "We went out to eat with friends and talked about the assignments."

In the next example, mastery-oriented code is established with attention to learning.

Example 34.

Person 10: "I tell myself that it doesn't really matter as long as I pass and I know that I have learned something what I consider important anyway."

However, example 34 contain also the Fixed code **performance goal** within *as long as I pass*, when the responder indicated that their goal is to perform, not to learn, yet the rest of the response can be seen as mastery-oriented.

The avoidance code. As expected, the question five produced a plentitude of avoidance code and at times it was challenging to distinguish the difference between avoidance and rejuvenation. In avoidance the participant is trying to soothe themselves and gain pleasure and entertainment by targeting their attention away form the task, whereas in rejuvenation the participant is aware of their need to recharge, they take rest and therefore target their attention to other, less strenuous, and more relaxing activities.

Example 35.

Person 2 and 12: "Just forget about it."

This is a clear example of avoidance. The responders wanted to target their attention immediately away from the task. Similar response can be seen with Person 3.

Example 36.

Person 3: "..and do something that takes my mind off the test."

At times the difference between avoidance and rejuvenation was thin, as is the case with the next example.

Example 37.

Person 20: "After a challenging task I just think about something else than the task for a while."

Here the beginning of the sentence indicates **avoidance** by shifting the attention away from the task, however, the ending *for a while* gives the impression that the person might return their attention to the task shortly after they have recovered and could be thus coded as **rejuvenation**. Coding in this kind of situations was less reliable, but validity was increased by increasing the consistency of coding and implementing the same principles to all extracts of material.

e) Open-ended Q6: After receiving praise from an authority, what are your feelings or thoughts? This question elicited the following Growth Mindset codes: progress, monitoring, and the following Fixed Mindset codes: performance goal, outer attributes, negative expectation, strong evaluation and outer motivation.

The monitoring code. As should have been expected, this was one of the most visible codes in relation to the question number six, as the question referred to situations of positive feedback. While coding individual reactions, I presumed that everyone would feel pleased for the praise, but that Fixed Mindset individuals would attach more value to the praise. The distinction between monitoring and performance goal came through attention to action. If a responder attached praise to action I assigned this as **monitoring**.

Example 38.

Person 22: "It feels great to hear that you are *doing* something right"

Example 39.

Person 23: "..and accomplished with my work"

In both example 38 and 39 the praise is appointed to the action that has been done, not the person themselves or their stable abilities, and thus these extracts were coded as monitoring.

The Negative expectation and strong evaluation codes. Negative forecasts are not necessary Fixed, since such evaluations may instead show **monitoring** through honest

judgement of the prevailing conditions. However, while paired with **strong evaluation, negative expectations** starts to approach the territory of a Fixed Mindset.

This is clearly visible in example 40.

Person 4: "It would feel good I bet, if it ever happened."

Here negative expectation *it will not happen* is paired with a strong evaluation *never*. Similar response was produced by Person 3 in example 41.

Example 41.

Person 3: "…if it ever happened"

The outer motivation code. Outer motivation, as earlier was mentioned, was assigned to responses which indicate that the participant's motivation is coming from an outside source, or an inner desire to be fulfilled by someone else.

Example 42.

Person 7: "…feel motivated. [when I receive praise]"

Example 43.

Person 21: "Those feelings are usually one of the main things that motivate me. Feeling fulfilled."

Here in examples 42 and 43 indicate clearly that they receive motivation from an outside source. In example 43 Person 21 takes it a bit further, adding **performance goal** *feeling fulfilled* to the statement. Often this kind of clusters of codes make the interpretation of challenging codes slightly more reliable as we have a stronger evidence base to support either of the Mindsets.

f) Open-ended Q7: What does "lifelong learning" mean to you?

Answers to the question number seven came as a surprise and produced possibly the most intriguing and informative piece of evidence concerning the whole study and its aims. The question opened possibilities to understand how knowledge and actions might not be in line with each other, and how people might know something, be informed and taught something, but still do not integrate that knowledge fully to their own belief systems. Instead, they might alter the data they receive to better fit their own ideas and beliefs. This finding is in accordance to the basic idea of constructivism where all knowledge is built upon and integrated to the old knowledge.

The question number seven elicited the following Growth Mindset codes: mastery-oriented, co-operation, continuity, progress, and the following the Fixed Mindset codes: no progress and passive voice.

The progress and continuity codes. In discussion of the responses to the question number two I discussed the existence of the code **progress**. As mention then, progress in itself could be categorised under monitoring or mastery-oriented codes, but here I wanted to leave it as a separate code to emphasis the Growth Mindset idea of evolving and developing attributes and qualities instead of producing new ones.

Continuity is a code which does not appear on any of the other questions due to the nature of this question. The code continuity encompasses the idea of the learning process which continues throughout one's lifetime, where learning is not merely a separate incident or occurrence, or a repeated action, but an ongoing and ever evolving process. With this code I wished to separate the Growth Mindset idea of lifelong learning from the Fixed Mindset definition, where learning does occur, but as separate, complete and fixed incidences. **Continuity** and **progress** are therefore very closely linked and when the separation was not clear, I used the code **mastery-oriented**.

Example 44.

Person 13: "..I will only improve in with time and never will know everything about."

Example 45.

Person 7: "..try your best to improve constantly."

In examples 44 and 45 both progress and continuity are vocal. In example 44 *will improve* provides progress and *with time* continuity. In example 45 the same occurs, *improve* indicates progress and *constantly* continuity.

The passive voice and no progress codes. In a similar way than with the Growth codes, the Fixed codes of 'passive voice' and 'no progress' were unique to this question. This question was the only one which widened the scope of assessment to the scale of a lifetime and did not focus on single happenings during a lifetime. Therefore, this question provided answers which dealt with this scope in a fashion suited for the Mindsets. The code 'no progress' was assigned to incidents where new things are learned, which in itself could be assigned as a Growth phenomena, but to make a distinction between the Fixed and Growth Mindsets, instead of developing and improving already existing skills or knowledge, the Fixed code of 'no progress' concentrates on the idea of fixed knowledge or abilities where new, individual and separate assets are learned, and old ones are kept stable whilst maintained.

A clear example of **no progress** was produced by example 46.

Person 3: "You always learn *new* things.."

When continuity and progress could have been signalled with the present continuous 'are learning', instead Person 3 signals no progress with the word choices of *new* and *learn*. Here learning may be interpret as separate occurrences where old things are not improved, but separate and new knowledge is learned.

The use of passive voice and the personal pronoun 'you' tells us that the speaker is distancing themselves from the topic and is providing us with knowledge they deem general and shared by all, not just themselves. Not only does this discursive tool distance the speaker from what they are stating, but also pinpoints a piece of knowledge the speaker deems as

definitive of the phenomena they are describing and therefore they may not believe what they say to be necessarily true in their own lives, or they do not necessarily live by it.

Example 47.

Person 5: "something that you will remember"

Example 48.

Person 15: "…that you will keep always in mind."

Here the responders use the personal pronoun *you* to distance themselves from the phenomena with the pronoun choice.

It was intriguing how this effect was intensified when almost the same matching version of the description of 'lifelong learning' could be found among all the presumably Finnish participants. Here I say presumably, because I did not collect demographic information and the participants' nationality could be evaluated solely by their last names. There was a striking contrast with the description provided by the participants with a Finnish last name to the participants with a last name which seemed foreign even though all of the responses were written in English.

Among the participants with a Finnish last name, the change between the passive voice or personal pronoun used, was a clear cut between the mimicked definition learned previously through socialisation, possibly at school, and the message that provided with personal insight.

Here are examples of responses made by the Finnish students.

Example 49: "You always learn new things, in life and in school"

Example 50: "We learn all the time, not by reading, but by being a human being."

Example 51: "Learning in and out school."

In majority of these responses the difference of learning in school, or outside of school was mentioned, along with the mention of *new things* and the scope of a lifetime. The basic idea which was present in all of the answers by the Finnish participants was that one learns things throughout their lives and never stops learning. The only clear Fixed-Growth differences which could be assigned from the Finnish responses were the ideas of a) learning new things, b) developing and improving along with new things and c) did the speaker distance themselves with the use of pronouns or passive voice from this phenomena. As discussed before, if the speaker used speech acts which distanced themselves from the description, the extract were coded as Fixed, and if the speaker involved themselves in the description and described evolving attributes, the extract was coded as Growth.

Here are examples of responses made by the foreign responders.

Example 52: "Learning something that is useful and that you will keep always in mind."
Example 53: "Something that you will remember for all your life."

Likewise to the Finns, the foreign students had similar responses to each other, but these answers matched with their other responses, unlike the Finnish responders whose systematically Growth Mindset definitions to 'lifelong learning' were at times in contrast with the rest of their responses.

We can only conclude that a question which asks to define a phenomena is at risk to produce answers which the responder thinks are 'correct' in the researcher's opinion, even if the responders would not truly agree with that particular response. Therefore it is recommended to avoid such open-ended questions in the future.

g) Open-ended Q8: Compared to your usual abilities, how well did you performed during the course exam? The responses to the question number eight elicited the following Growth Mindset codes: monitoring, positive expectation, mastery-oriented, and progress. Out of these, monitoring and expectations are natural occurrences when individuals are asked to analyse their performance or success, and these codes were present as expected.

The monitoring code dominated the responses, as was expected. In example 54 Person 7 evaluated their success with slight **negative expectations**, but managed to monitor what had gone wrong.

Example 54.

Person 7: "I'd say I kinda underperformed. I didn't put too much work into things."

This monitoring *I didn't put too much work into things* altered the negative expectation code into monitoring code. In example 55 Person 8 was also monitoring their success, even though the last phrase *Could have went better* could also be evaluated as Fixed **boost of self.**

Example 55.

Person 8: "It was difficult but I think it went okay. Could have went better."

In example 56 Person 23 gives a thorough monitoring by listing the things they could have done better.

Example 56.

Person 23: "I could have studied more carefully and managed my time a little better during the exam but otherwise I feel like I did quite well…"

It is also noteworthy how Person 23 relates to the lack of time, not as an outer attribute, but as something they can have agency over and perhaps manage better during the following exams.

The following Fixed Mindset codes were present in responses to question eight: no monitoring, (boost, harsh critique) self, doubt, outer attributes, negative expectation. Out of these codes, the 'no monitoring' code gave the most meaningful insights to the responders' answers alongside 'outer attributes'.

Outer attributes. While wondering about the success or failure individuals have, Growth Mindset individuals are more prone to assign honour and blame to their effort, work and

strategies, whereas Fixed Mindset individuals give this credit to outer attributes (Dweck 2000, Dweck 2017). This was also the case with responses to the question number eight.

Example 57.

Person 17: "…considering the fact that I was quite ill which did take its toll and I wasn't able to concentrate as well as I'd liked."

Example 58.

Person 2: "I was ill and having a headache - so pretty bad."

In both examples 57 and 58 responders attributed their physical health for their bad results.

Example 59.

Person 20 "I feel like I had too little time to do the exam…"

Example 60.

Person 9: "…I ran out of time and didn't get to say all that I had to say."

In examples 59 and 60 the blame was put on the shortage of time, while there is a clear contrast to the earlier example 56 of person 23. In the example 56 the responder planned for better strategies to deal with the shortage of time, while the Fixed examples 59 and 60 blamed the same outer attribute for the challenges they had.

5.3. The qualitative results - Assigning individual Mindsets

In the previous section we discussed how the phenomena related to the Mindsets rose from the data separately and individually, and how I assigned the codes to the extracts of dialogue. However, we humans can not be reduced into small snippets of dialogue and the true meaning of dialogue arises with context. Therefore, when I aimed to assign Mindsets for the responders, I compared the responders' individual codes to their other codes and responses, to form a full context and a comprehensive understanding of the person's ideas, so that one code wouldn't dominate an evaluation. If there was a possibility to evaluate responses in diverse

ways, I was able to make more educated evaluations when the whole context was present in the evaluation process. Hence, I produced a table (Appendix E) where I collected all the codes and went through the results one more time, but this time I checked the codes of the responses person by person. While evaluating for the Mindsets, I took into account all of the answers a participant had given, and the balance between them. I reminded myself of my coding frame and the literature behind it by keeping all of these available and checking on them while doing the coding to produce a systematic and reliable evaluation of the data set.

For the majority of individuals it was quite impossible to establish a Mindset reliably based solely on the codes I had assigned for their answers, since all of the individuals had both Fixed and Growth codes, and most of the time it was possible to assign both categories for the same blocks of data. When compared with the quantitative evaluation for reliability, only ten qualitative evaluations out of the 23 responses matched with the quantitative evaluation tool. Therefore, for most of the cases the evaluation and coding process was not as reliable as I hoped it would have been.

Nevertheless, I gave my systematic evaluation of the participants' Mindsets based on the codes and the whole context of their answers, and even though the majority of the answers were challenging to evaluate, there were cases where the answers presented a clear representation of the expected codes and phenomena that were the focus of the present study. So much so that few of the cases made me question the reliability of my quantitative method and its accuracy on evaluating the participants' Mindsets. In the next sections I will discuss the reliable, unreliable and in-between evaluations I produced, and the reasons why I presumed them to be so.

5.3.1 Examples of reliable results

Here I have summarised some of the responses which I am convinced were reliably coded and which I am convinced I had analysed reliably as Growth or Fixed Mindset. The reasons why these evaluations were deemed reliable are later given together with the evaluation, but as was mentioned earlier, the ground reason for this conviction is on the clarity of the answers and the clear distinction of codes.

Growth Mindset individual Person 23

Person 23 was the epitome of Growth Mindset. They had responses in all of the questions that could be defined as the classic phenomena of a Growth Mindset and a handbook examples of the way a person with a Growth Mindset would react to the situations I had asked them to describe. These answers were so clearly of the Growth category that when I checked for reliability from the quantitative measure, I first could not believe what I saw. According to the quantitative Likert-scale measure, the person 23 belongs to the in-between group, right in the middle of the spectrum. This made me question the scale altogether. Perhaps this individual understood the statements in a different way than was originally meant by Dweck and colleague, since they are a Second Language English speaker. However, based on the qualitative analysis, I am convinced they belong to the Growth category and since evaluating the qualitative measure was not a part of my research question we shall not dwell on there any longer. For the sake of consistency I merely state that with this individual the quantitative measure failed for reasons which are not within the scope of this thesis.

In example 61, in response to the question number two Person 23 showed **appreciation of challenge**, a typical mastery-oriented phenomena.

Example 61

Person 23: "…was really inspiring because the answers weren't straight-forward or obvious."

In example 62, in response to the question number three they continued with an awareness of the effects of **effort** and appreciation of **co-operation.**

Example 62.

Person 23: "I had studied the material properly...the group with which we discussed the questions was also motivated."

The last response *the group with which we discussed the questions was also motivated* could also be coded under **monitoring**, as the person was aware of the effect their immediate peers had on their performance.

In response to the question number four Person 23 was able to appreciate how failure guided their thinking into other directions, which is a classic **mastery-oriented** reaction.

Example 63.
Person 23: "…the challenge taught me to think in a different and new way."

In question number five they were able to monitor their actions and create a new strategy of how to succeed in the future, another **mastery-oriented** reaction.

Example 64.
Person 23: "…I'll study harder next time and think about better ways to prepare."

Majority of other responders would relax and target their attention elsewhere in a Fixed Mindset manner, but while encountering a challenge, Person 23 would target their attention on the task and on the strategies used and would try to *think*; target attention, of how to progress in a better way next time. These all speak strongly for a Growth Mindset.

The same approach to failure continued in the question number seven and eight, where attention was focused on learning from mistakes and possible strategies which could be employed.

Example 56.
Person 23: "..studied more carefully and managed my time a little better during the exam."

Especially the response in example 56 stands in clear contrast with other responders' answers where others blamed the lack of time for their results, whereas Person 23 takes agency and responsibility over the fact that they feel they ran out of time, again, very **mastery-oriented** reactions.

Based on this convincing evidence I assigned this individual to the growth category, and even though the quantitative measure did not agree with this, I still firmly stand my ground on this evaluation and say that Person 23 presented all the classic examples of Growth Mindset reactions.

Growth Mindset individual Person 15

With Person 15 the quantitative evaluation agreed with my evaluation and placed them in to the Growth Mindset category. Within their responses only the question number seven elicited Fixed Mindset responses, whereas all the other questions resulted in clear Growth phenomena. The reason may be that with the question seven a definition was asked, and even though the setting tried to imply a more personal perspective, Person 15's response is consistent with other responders answers which mainly defined the term, not describe its personal meaning.

Person 15 starts their responses with a **learning goal** in example 63 and and continue to **monitoring** in example 64.

Example 63.

Person 15: "..inspired to read more, to discover more about.."

Example 64.

Person 15: "Because I learned more about [subject] and writing techniques"

They show **mastery-oriented** reactions to challenge paired with an emphasis on **co-operation** in example 65 and finish with a strong **mastery-oriented** perspective on their performance in combination with **monitoring** in example 66.

Example 65.

Person 15: "There wasn't really a failure, because the teacher would always.."

Example 66.

Person 15: "I am curious to get my grade in order to see.."

Combined together, these clear phenomena indicate that the person is included inside the Growth Mindset.

Fixed Mindset individual Person 24

Based on the quantitative evaluation, Person 24 was undoubtedly Fixed. Out of all the participants, Person 24's results indicated most strongly a Fixed Mindset and my qualitative analysis agreed with this notion, even though they responded with short answers and gave very little data to analyse. Person 24 answered only five of the seven open-ended questions and one of these answers did not respond to the question which was asked. It seemed that in this responses they did not understand the question, and instead of describing their own reactions they defined circumstances. They responded twice with a neutral answer, and two answers gave proof of a Fixed Mindset.

One of these Fixed codes was the **performance goal** which was present in their definition of 'lifelong learning' in example 67.

Example 67.

Person 24: "Something that you have learned and stay in your mind for a lifetime"

In this response there are no signs of progress or evolvement, but instead they describe a perfected separate occurrence of performance which does not alter even within the monumental scale of a lifetime. This idea of a steadfast stasis is a strong indicator of a Fixed Mindset, so profoundly Fixed that it is the phenomena where the Mindset has gained its name.

Fixed Mindset individual Person 4

Based on the quantitative evaluation, the Person 4 was not Growth or Fixed, but in-between the Mindsets, and more inclined towards the Fixed category. This evaluation does not fully back my own evaluation, even though it does point to the same direction and therefore gives

agreement with my own qualitative analysis. Based on my qualitative analysis I am convinced that it is highly likely that this person has Fixed Mindset beliefs. Their responses were full of helpless-orientated phenomena and on top of these, they had negative expectations and no hope for an improvement on results.

Example 68.

Person 4 "Not at any point really really since literary studies are definately not my cup of tea. The most motivated I felt was the few days before the exam."

In example 68, in response to question number two Person 4 showed **no motivation** by stating they had motivation *Not at any point really* and showed signs of **self-sabotage** by expressing that they only had motivation right before the exam, and hence it is assumable that they crammed right before the exam, which is a sign of self-sabotage. In this example there is also **strong evaluation** in the word choices of *definately* and *the most,* which both are powerful words to be used in any evaluation.

Self-sabotage is present when an individual consciously uses strategies which do not benefit the end result; such as cramming right before an exam or leaving tasks to the very last minute (Burnette et. al. 2013). Self-sabotage alone is a strong indicator of a Fixed Mindset, because individuals with a Growth Mindset are more likely to use all opportunities of learning for their benefit, employ monitoring while the process is going on, and see more value in effort than in last last minute miracles Fixed Mindset individuals try to achieve (Dweck 2000).

As presented in example 69, in response to the question number three, the Person 4 showed again **negative expectations** and proof of their l**ack of monitoring** by stating they are not aware if they passed their test or not and produced a **performance goal** by proclaiming the course would be a success if they passed. These are again strong indicators of a Fixed Mindset.

Example 69.

Person 4: "I did not succeed, unless I pass the test, then I will consider this course a success."

In response to the question number four, the same trend continues. As presented in example 22, Person 4 reported **hopeless-strategies** when facing a failure by stating they would *...to just freeze* and **strong** negative **evaluations** of their performance on the course by saying *95% of the course I had no idea what anyone*.

Comparing these reactions with the fact that the person had no idea how their exam had went, we can conclude that they did not employ mastery-oriented strategies where they could have asked for help or checked with their peers or colleagues how they were progressing during the course, but instead they resolved to hopeless-strategies of not doing anything and possible guessing during the exam as they were not aware how well they had performed.

Example 70.

Person 4: "…so even without having a clue what I was supposed to write, I got…some okay-ish answers."

In example 70, the Person 4 continues their **strong evaluations, negative expectations** and **self-doubt** by stating they had *some okay-ish answers* while they were struggling *without having a clue*. Based on these markers I considered this person to be an individual with a Fixed Mindset.

5.3.2 Examples of unreliable results

Here are some examples of responses which I believe I did not succeed in coding, or where the coding did not yield reliable results. In a similar way with the reliable results, the reasoning for these doubts are given together with the detailed descriptions, but as a ground rule it can be stated that the codes were not clearly visible or there were uncertainty while coding these responses.

In-between Mindsets individual Person 19

For this person I assigned a Growth Mindset, even though the quantitative measure provided the lowest score for a person in the in-between group, and therefore, this person was very close being in the Fixed Mindset category based on the quantitative Likert scale questionnaire

results. Therefore, we must conclude that in this case my qualitative method was unsuccessful. This was due to the unreliable coding results. While coding, the responses for questions four and eight could have been coded in either direction and hence there was no real possibility to code these responses reliably.

Example 19.

Person 19: "I did not think "failure" as something important and I don't really react strongly if I'm not understanding something."

In example 19, in response to question number four, Person 19 responses in a manner which could be interpret twice as **avoidance**, as the person tries to distance themselves emotionally from the failure by not giving it any meaning or value: *I did not think "failure" as something important,* or as **mastery-oriented** as the person did not see failure as a detrimental happening, hence leaving the coding unreliable.

Example 71.

Person 19: "Not very well I think. I think I do usually better on exams like this, but maybe I was rusty."

As shown in example 71, in the question number eight Person 19 shows **negative expectation** with a slight hint for a **lack of monitoring** with *Not very well I think,* followed by a Fixed Mindset **boost of self-esteem and performance goal** in *I think I do usually better on exams like this, but maybe I was rusty.* However, the second chunk of data could also be assigned as Growth Mindset **monitoring** as the individual was concentrating on the evaluation of their usual performance, again leaving the coder guessing.

The rest of the responses included a clear variance between Fixed and Growth and these responses were coded reliably. However, as there was a continuous change between Fixed and Growth, no heuristic consistency on the responses could be evaluated and the analysis was completed as unreliable.

Growth Mindsets individual Person 22

Similar fluctuating pattern to Person 4's responses was present in Person 22's responses, and thus I was unsure which group to place them. However, my quantitative measure was clear, and placed this person firmly to the Growth category.

In response to question two in example 72, Person 22 shows Fixed **deterioration of motivation**: while stating they initially had motivation, but since that is the only occurrence of motivation they respond, it is assumed that their motivation faded during the course.

Example 72.

Person 22: "[I was motivated] In the beginningbof the course"

However, in example 73, in response to question three they put strong emphasis on **effort** which is a strong indicator of Growth Mindset.

Example 73.

Person 22: "I had worked hard"

In example 24 in response to question three they fall into **helpless-orientation**: *That this is hopeless!* and in example 74 they show **outer motivations** with *Reward myself with*. Both helpless and outer motivation are reliable indicators of a Fixed Mindset.

Example 74.

Person 22: "Reward myself with good food and…"

In example 38, in relation to question six the responder returns back to Growth **monitoring** by stating *to hear that you are doing something right.* In this example they are happy to hear feedback on their progress and what they did was right. However in example 75 in their response to question eight the responder is back to Fixed code **negative expectations** and **lack of monitoring** by stating their surprise on their success: *I was surprised how well I did*.

Example 75.

Person 22: "I was surprised how well I did."

Such switching between clear and prominent phenomena was misleading and challenging to categorise. I could have said that the person is squarely in the middle of the Mindsets as they do produce clear indicators of both of the Mindsets, but as this was such a puzzling situation I was not able to produce clear categorisation during my analysis and thus I found the result unreliable. A reliable method should work even though the researcher is surprised or confused, and the above description of analysis process is a clear indicator of the subjective downfalls of my qualitative method.

6 DISCUSSION

Considering all of the results, few of the questions alone brought true insights and answers to the research questions. As already mentioned, for the majority of responses, there were individual occurrences of the Mindset phenomena which arose from the material, but when the responses were viewed as a whole, none of the open-ended questions alone provided adequate responses to reliably determine a Mindset, and even with combination, the evidence for either Mindset was scarce.

However, individual occurrences of a Mindset-related phenomena could be beneficial in the long run. The open-ended questions which provided interesting responses, and clear Mindset-linked phenomena, asked directly about *motivation, goals, and perceptions of failure and challenges*. This is an important notion to keep in mind; when a mentor is to discuss issues related to above-mentioned subjects, they are more prone to receive hints of their students' Mindsets from the students' responses and reactions. In the long run this information may provide adequate information to evaluate the students Mindsets or if their Mindsets are altered to either direction. This information will provide highly valuable information for the mentor or teacher, especially in transition situations where students are under strong academic and social pressure (Yeager et. al. 2014).

The only question (number seven) which required the participants to define a phenomena, clearly showed how the participants wanted to answer with a ‘correct’ answer and thus raised the question of reliable reporting. The participants gave an answer which, at times, did not seem to agree with their own worldview, but which they presumed was the answer that the researcher would deem correct. This, in my opinion, is the downfall of all questionnaire data. To varying degrees, the participants want to please the researcher and hence produce data which is unreliable in small quantities, and this is presumably also one of the downfalls of the current study. In greater quantities the variance from the ‘norm’ could be observed and more reliable dispositions may be attained.

There are multiple interpretations to my analysis, as Braun and Clarke (2006:21) warned. Based on the results I gained from my work, I can not define a rigid Mindset or give definite analyses built on seemingly subjective observations, but I can, however, identify markers and phenomena which are pronounced and clear, and notice these signposts to establish a possible inclination an individual has towards a Mindset, and hence establish which individuals inside the group I am mentoring are ‘at risk’ and need extra attention. Dweck (2017) stated that the beliefs we hold are often unconscious, and therefore the things we say and the things we do may be in contrast, as was hinted by the responses to the question number seven where individuals were able to produce classic Growth Mindset definitions of a phenomena without otherwise employing Growth Mindset beliefs, and therefore, I should not be blinded by the brilliant words spoken, but consistently observe reactions to failure and words used in connection to challenges, and the pride that follows success.

In addition to this, the definitions to ‘lifelong learning’ in the research data established a concern as to how I should conduct myself in the future. These responses gave a reason to wonder if previous intervention methods which aim to raise awareness on Growth Mindset, truly would be beneficial in my own profession. The responses to question number seven hint that even though an idea has penetrated a whole cohort of students, still the key concepts that could be beneficial to them are not fully brought to practice, but instead the students ‘parrot’

the definition, are aware that such a concept exist, but do not integrate it to their day-to-day activities and beliefs.

This observation mirrors my own experiences. In my own life, the mere knowledge of Mindsets did not change my inner beliefs and fears. I still gained the same emotional reactions even though I was consciously aware of the source of the reaction. To me, implementing Growth Mindset ideas to the practice and reminding myself continuously of 'the other way' of perceiving effort and failure, has gradually changed my inner reactions and actions. Writing this thesis has become easier day by day, even though I would not call this an easy task. I have given myself continuous reminders as feedback; on my actions, on my results and on my thoughts. This has gradually produced a change. Even though this is merely my personal experience, perhaps there is some insight in this as to how the future of my professional career as a teacher should look like.

In most of the interventions and experiments that were conducted by Dweck and her colleagues, individual reactions and the ways the participants conducted assignments were altered through the way tasks were given and through the wording which were used (Dweck 2000, 2019, Haimovitz. et. al. 2016). Another potent mediator was the feedback that was given to the individuals taking part in the experiments.

In one of the studies conducted by Cimpian et. al. (2007), preschoolers' reactions were altered through the feedback they were given. The children who had received generic praise relied on helpless-oriented strategies, such as giving up and crying, whereas the children who received nongeneric and situation specific praise were more prone to use master-oriented strategies, such as trying again, in their reactions following the experimental assignment. Similar observations were described by Johnsson and Beach (2012) and Zhang et. al. (2017:1372).

During these kinds of situations where we base our judgement on very little evidence and define something by that dwindling evidence, we simultaneously build beliefs and enact our own truth that inner abilities and capabilities are so stable and predictable that one single incident can predict the course of the rest of the history, and hence, based on one speech-act,

we can proclaim: “You are such a wonderful speaker!”. This is the downfall of generic feedback, and all feedback that somehow defines individuals.

Cimpian et. al. (2007) showed how far-reaching consequences such feedback may have and, while our students are facing a challenge, if we want them to continue instead of give up, we should try to avoid generic feedback as long as possible.

The study by Cimpian et. al. (2007) was not a stand-alone-result, and similar reactions have been documented throughout the intervention studies (Dweck and Yeager 2019). Therefore, the words that we use daily and the things we bring into focus are at a vocal role in our attempts to motivate and help the ones we wish to mentor, but is it possible?

In Dweck’s (2017) tentative Unified Theory of Motivation, Personality, and Development, Dweck builds her theory around the idea of perceptions and beliefs, and that beliefs are built from experiences and individual interpretations of these. If we focus attention to perceptions which foster Growth Mindset, we also might be able to alter the beliefs about human possibilities to evolve and change, and while doing so, lift the burden of perfectionism and test-stress from the shoulders of the ones we are mentoring.

Considering how unreliable single incidences of dialogue are to determine individual Mindsets, and how little effect did mere knowledge of ‘lifelong learning’ produce when translated into real life, it could be more effort efficient to concentrate on cultivating a Growth Mindset through our own every-day reactions to failure, by celebrating failure as a proof that we are learning something we do not know yet, by focusing attention on monitoring and strategies which work, and with feedback which cultivates the idea of progress and the value of effort. *Rome was not built in a day* should echo something meaningful and not simply empty words.

7 CONCLUSION

In my perspective, inside the field of motivation psychology, there seems to have been a shift on perspective. Motivational psychology has gone through eras of discovery, evaluation and novelty. As we have gained greater knowledge on the human condition, we have been able to describe and define what happens inside our minds. The field of motivation has been mainly about discovering the phenomena and less about explaining the mechanisms behind these phenomena. Now the focus has shifted towards understanding the underlying mechanisms and implementing interventions to shift real life happening: from the laboratory to the world. Studies during the last 30 years have concentrated more on the causes and effect, how we could change motivation and how it is created. The emphasis has also shifted towards the reciprocal interaction between an individual and their environment; how does nature and nurture play together. These new understandings have provided us with new opportunities and new ideas on how to better serve our student population with such insights.

Haimovitz et. al. (2011:750) end their article on Mindsets' effect on intrinsic motivation by concluding that changing outer realities, such as school structure, classroom schedules etcetera, may be challenging to change, but short psychological interventions for students' Mindsets are more easy to conduct, and the implications for positive outcomes with such tools are multiple. If we consider Dweck's (2012) results from Chile, where Mindset alleviated the effects of poverty on academic success, the importance and usefulness of Mindsets seems even more promising.

There is a great amount of studies done around Mindsets. Dweck, Yeager and their colleagues (Dweck and Yeager, 2019) have produced extensive national scale interventions to shift people's Mindsets towards a Growth Mindset, but teachers do not have the day-to-day tools to recognise or guide students' Mindsets during regular classroom hours. In the current study, I was interested to see if it was possible to recognise Mindset related phenomena with useful questions which could be employed in day-to-day interactions between a mentor and their student, and to distinguish their Mindset to guide them towards a Growth Mindset, and hence affect their future lives with a fresh and empowering way of thinking and functioning.

In my study I was able to qualitatively observe Mindset-related phenomena in dialogue related to questions on motivation, goals, failure and challenge, and I was partly able to assign Mindsets based on those insights.

However, more valuable was the understanding that resulted through the study on the value of timely and specific feedback over information on Mindsets when one is aiming to alter Mindsets. I learned that information alone does not bring results in the day-to-day life, and that individuals may have knowledge that they do not implement on their lives because the knowledge does not translate into beliefs and actions. Based in Dweck's theory on motivation, personality and development (Dweck, 2017) I concluded that to alter beliefs we must alter perceptions, and with aimed attention and precise and timely feedback we can give new meanings and target attention to phenomena that we deem important and hence change the students' perceptions, beliefs and Mindsets.

As the field of motivational psychology is moving more vocally towards a time of interventions, this is an exciting time to be involved with a field like this. There is a great pool of knowledge to draw information from and tremendous possibilities for implementations. I am pleased to have added my own droplet of knowledge to this sea of possibilities.

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9. APPENDICES

Appendix A - The quantitative Mindset questionnaire

A) In the following questions, we ask about your views.
Your honest, "gut" response will be most helpful.

Please show how much you agree or disagree with each statement by
choosing the item that corresponds to your opinion.

1. You have a certain amount of intelligence, and you can’t really do much to change it.
( ) Strongly Agree
( ) Agree
( ) Mostly Agree
( ) Mostly Disagree
( ) Disagree
( ) Strongly Disagree

2. Your intelligence is something about you that you can’t change very much.
( ) Strongly Agree
( ) Agree
( ) Mostly Agree
( ) Mostly Disagree
( ) Disagree
( ) Strongly Disagree

3. No matter who you are, you can significantly change your intelligence level.
( ) Strongly Agree
( ) Agree
( ) Mostly Agree
( ) Mostly Disagree

( ) Disagree

( ) Strongly Disagree

4. To be honest, you can’t really change how intelligent you are.

( ) Strongly Agree

( ) Agree

( ) Mostly Agree

( ) Mostly Disagree

( ) Disagree

( ) Strongly Disagree

5. You can always substantially change how intelligent you are.

( ) Strongly Agree

( ) Agree

( ) Mostly Agree

( ) Mostly Disagree

( ) Disagree

( ) Strongly Disagree

6. You can learn new things, but you can’t really change your basic intelligence

( ) Strongly Agree

( ) Agree

( ) Mostly Agree

( ) Mostly Disagree

( ) Disagree

( ) Strongly Disagree

7. No matter how much intelligence you have, you can always change it quite a bit.

( ) Strongly Agree

( ) Agree

( ) Mostly Agree

( ) Mostly Disagree

( ) Disagree

( ) Strongly Disagree

8. You can change even your basic intelligence level considerably.

( ) Strongly Agree

( ) Agree

( ) Mostly Agree

( ) Mostly Disagree

( ) Disagree

( ) Strongly Disagree

9. You have a certain amount of talent, and you can't really do much to change it.

( ) Strongly Agree

( ) Agree

( ) Mostly Agree

( ) Mostly Disagree

( ) Disagree

( ) Strongly Disagree

10. Your talent in an area is something about you that you can't change very much.

( ) Strongly Agree

( ) Agree

( ) Mostly Agree

( ) Mostly Disagree

( ) Disagree

( ) Strongly Disagree

11. No matter who you are, you can significantly change your level of talent.

( ) Strongly Agree

( ) Agree

( ) Mostly Agree

( ) Mostly Disagree

( ) Disagree

( ) Strongly Disagree

Appendix B - The qualitative Mindset questionnaire and expected answers

GM = Growth Mindset

FM = Fixed Mindset

1. **Participant's name**

First name

Last name

2. During the course, when were you inspired or motivate

GM: motivated to try harder when facing a challenge, inspired by new information that was earlier unfamiliar with

FM: paralyze when facing a a challenge, frustrated with the amount of challenge, motivated when got something right / correct

3. When you succeeded, why do you think you did?

FM: because I'm a good student, I knew it from previous studies

GM: because I worked hard for it

4. During the course, what were your initial thoughts and reactions when you faced a challenge or failure?

GM: inspired to work harder, intrigued, motivated, challenge is an integral part of learning

FM: frustrated, stressed

5. After a challenging task or exam, how do you recover?

GM: recover? I enjoy hard exams! I think about the exam and go through it in my mind to see what I was able to cover, if I got something wrong etc. I recover quickly.

FM: I try to forget that I had one, I try to avoid thinking about it.

6.After receiving praise from an authority, what are your feelings or thoughts?

GM: I am going to the right direction

FM: Really good. I enjoy it.

7.What does "lifelong learning" mean to you?

FM: believe ppl improve throughout life, want to improve themselves

GM: ppl get certain level of skill/ ability/intelligence and then maintain it with learning

8.Compared to your usual abilities, how well did you performed during the course exam?

GM: will analyse/assess progress, problem solving, thinking

FM: will analyse/assess correctness

9. Questions or feedback

Appendix C - Theory Of Intelligence Scale

Adapted from Hanson, J. L. (2015) p. 152-154

https://scholarworks.montana.edu/xmlui/bitstream/handle/1/10157/HansonJ0815.pdf?sequence=1

Theory of Intelligence Scale

Intelligence – Fixed or Growth Mindset – Dweck, 1999

==========

α = .90; M = 3.31; SD = 1.04; cf. Dweck, Chiu & Hong, 1995

In the following questions, we ask about your views about intellectual ability, learning and performance. Opinions differ on these matters and your honest, "gut" response will be most helpful.

T1-FM1 1. You have a certain amount of intelligence, and you really can’t do much to change it. [Reverse-scored]

( ) Disagree Strongly

( ) Disagree Somewhat

( ) Disagree Slightly

( ) Agree Slightly

( ) Agree Somewhat

( ) Agree Strongly

T1-GM1 2. You can always substantially change how intelligent you are.

( ) Disagree Strongly

( ) Disagree Somewhat

( ) Disagree Slightly

( ) Agree Slightly

( ) Agree Somewhat

( ) Agree Strongly

T1-FM2 3. You can learn new things, but you can't really change your basic intelligence.

[Reverse-scored]

( ) Disagree Strongly

( ) Disagree Somewhat

( ) Disagree Slightly

( ) Agree Slightly

( ) Agree Somewhat

( ) Agree Strongly

T1-GM2 4. You can change even your basic intelligence level considerably.

( ) Disagree Strongly

( ) Disagree Somewhat

( ) Disagree Slightly

( ) Agree Slightly

( ) Agree Somewhat

( ) Agree Strongly

Scoring Guidelines

The survey is coded with scale indicators, meaning that the items with a common prefix go together. The instructions for the first scale, theory of intelligence (i.e., mindset), are below and can give you guidelines on how items within a survey are to be combined.

Theory of Intelligence: GM1 & GM2 items are counted as scored (1=1, etc.)

FM1 & FM2 items are reverse-scored, so that 1=6, 2=5, 3=4, 4=3, 5=2, 6=1.

Add the scores for the 2 GM items + the reversed scores for the 2 FM items and divide by 4 to get the average.

Appendix D - Online Individual Mindset Survey

Adapted from Hanson, J. L. (2015) p. 155-156

Online Individual Mindset Survey

Please show how much you agree or disagree with each statement by circling the item that corresponds to your opinion.

1. You have a certain amount of intelligence, and you can't really do much to change it.
Strongly Agree, Agree, Mostly Agree, Mostly Disagree, Disagree, Strongly Disagree

2. Your intelligence is something about you that you can't change very much.
Strongly Agree, Agree, Mostly Agree, Mostly Disagree, Disagree, Strongly Disagree

3. No matter who you are, you can significantly change your intelligence level.
Strongly Agree, Agree, Mostly Agree, Mostly Disagree, Disagree, Strongly Disagree

4. To be honest, you can't really change how intelligent you are.
Strongly Agree, Agree, Mostly Agree, Mostly Disagree, Disagree, Strongly Disagree

5. You can always substantially change how intelligent you are.
Strongly Agree, Agree, Mostly Agree, Mostly Disagree, Disagree, Strongly Disagree

6. You can learn new things, but you can't really change your basic intelligence
Strongly Agree, Agree, Mostly Agree, Mostly Disagree, Disagree, Strongly Disagree

7. No matter how much intelligence you have, you can always change it quite a bit.
Strongly Agree, Agree, Mostly Agree, Mostly Disagree, Disagree, Strongly Disagree

8. You can change even your basic intelligence level considerably.
Strongly Agree, Agree, Mostly Agree, Mostly Disagree, Disagree, Strongly Disagree

9. You have a certain amount of talent, and you can't really do much to change it.
Strongly Agree, Agree, Mostly Agree, Mostly Disagree, Disagree, Strongly Disagree

10. Your talent in an area is something about you that you can't change very much.
Strongly Agree, Agree, Mostly Agree, Mostly Disagree, Disagree, Strongly Disagree

11. No matter who you are, you can significantly change your level of talent.
Strongly Agree, Agree, Mostly Agree, Mostly Disagree, Disagree, Strongly Disagree

Appendix E - The full code table

	Question 2	Question 3	Question 4	Question 5	Question 6	Question 7	Question 8	Mindset
Person 2	~~GM progress~~ ?? IT FM performance FM doubt	FM outer attribution x2 FM self-doubt GM co-operation	FM helpless FM avoidance	FM avoidance	FM negative expectation	GM personal GM learn GM mastery-oriented	FM outer attributes FM negative expectation	-> FM Dweck: 4 = in-b
Person 3	GM co-operation	FM outside attribute	FM nfg FM disappointed in self	FM dislike challenge FM outer motivation	FM performance goal	FM you FM no improvement GM x2	FM outer attributes FM negative expectation	-> FM? Dweck: 3,6 = in-b
Person 4	FM lack of motivation FM self-sabotage FM strong evaluation	FM performance goal FM negative expectation FM lack of monitoring	FM nfg FM strong evaluation	GM mastery-oriented OR FM avoidance	FM negative expectation FM strong evaluation	FM you FM new	FM self-doubt x2 FM no monitoring x2	-> FM!! Dweck: 3,2 = in-b FM
Person 5	neutral	FM outer attribution	GM mastery oriented	??	??	FM you FM no progress	??	-> FM Dweck: 3,6 = in-b
Person 6	FM performance goal ?? IT	GM progress FM self-doubt	FM helpless FM avoidance	FM nfg FM avoidance	FM performance goal FM appreciation of praise FM outer motivation	GM personal FM you FM new	??	**-> FM!** **Dweck: 2,3 = FM**

	Question 2	Question 3	Question 4	Question 5	Question 6	Question 7	Question 8	Mindset
Person 7	FM performance FM feeling accomplished	GM effort GM monitoring FM ability	FM nfg FM disappointed in self	FM avoidance	FM performance goal	FM you FM you GM continuity	GM monitoring GM monitoring	**GM?** **Dweck: 4,8 = GM**
Person 8	GM learning goal	GM EFFORT	FM nfg GM monitoring	FM dislike challenge FM attention elsewhere	??	FM passive voice GM continuity	GM monitoring GM positive expectation	GM Dweck: 4,1 = in-b GM
Person 9	GM co-operation	GM EFFORT	GM mastery oriented GM reaction	GM rejuvenation	FM negative expectation	GM personal GM continuity	FM outer attributes GM monitoring	**GM!!** **Dweck: 4,6 GM**
Person 10 **Good example of two possible interpretations**	FM lack of motivation OR GM monitoring	GM progress GM monitoring	FM nfg FM disappointed in self FM outer attributes OR GM mastery-oriented	GM definition of failure GM mastery orientation GM positive expectation	?	FM you GM continuity GM personal GM co-operation GM mastery-oriented	FM outer attributes FM negative expectation	GM?? Dweck: 3,4 In-b GM?
Person 11	FM lack of motivation FM performance FM performance goal	FM self-doubt GM monitoring	FM strong evaluation FM negative expectation FM self-doubt	FM avoidance FM definition of self GM mastery orientation	?	GM personal GM mastery-oriented	FM self-doubt FM no monitoring FM focus on skills FM harsh self-critique	FM Dweck: 4 = in-b

	Question 2	Question 3	Question 4	Question 5	Question 6	Question 7	Question 8	Mindset
Person 12	GM mastery-oriented GM learning goal ?? IT	?? IT GM monitoring	FM lack of monitoring FM avoidace	FM avoidance	??	GM personal FM not active FM passive being	FM boost self-esteem	FM Dweck: 4,3 = in-between, melkein GM
Person 13	GM co-operation GM co-operation	FM no monitoring FM help-lesss orientation	??	FM dislike challenge FM attention elsewhere	FM performance goal FM performance goal	GM personal GM continuity	??	? Dweck: 5,6 = GROWTH
Person 14	GM co-operation ?? IT	FM outer attribution ?? IT	FM Not Feeling Good	FM attention away	??	FM passive voice	??	FM??? Dweck: 3,6 = in-between
Person 15 CLEAR GM	GM learning goal	GM progress/ monitoring	GM mastery oriented GM co-operation	GM rejuvenate	??	FM passive voice FM no progress	**GM mastery-oriented** GM focus on progress	**GM !!!** **Dweck: 4,8 = GM**
Person 16	?? IT	GM effort GM monitoring	GM mastery oriented	??	??	GM progress FM passive voice	GM monitoring	GM? Dweck: 5 = GM

	Question 2	Question 3	Question 4	Question 5	Question 6	Question 7	Question 8	Mindset
Person 17 WRONG	?? IT GM learning goal GM monitoring	GM effort ?? IT	GM mastery oriented GM mastery oriented	GM rejuvenate?	GM improvement/ progress GM motivation from progress	FM attention on self FM you GM mastery-oriented “curious”	**FM outer attributes** **FM outer attributes**	**GM** **Dweck: 2,6 = FM**
Person 18	FM self-doubt	?? IT GM effort	FM nfg	FM self-doubt?	GM mild appreciation of praise GM self-respect GM attention on process	GM progress FM passive voice	FM negative expectation	FM? Dweck: 3,7 = in-between
Person 19 **Dweck scale unreliable?**	?? IT	GM monitoring	GM mastery oriented GM mastery oriented	GM mastery-oriented	??	GM mastery-oriented GM mastery-oriented FM you	GM monitoring	GM mastery-oriented GM co-operation DEFINETLY GM Dweck: 2,8 =FM

	Question 2	Question 3	Question 4	Question 5	Question 6	Question 7	Question 8	Mindset
Person 20	FM performance goal GM progress FM strong evaluation FM performance FM performance GM co-operation GM co-operation ??IT	??	GM mastery oriented FM avoidance	FM dislike challenge FM avoidance	FM negative expectation FM self-doubt FM enjoy praise	GM personal GM mastery-oriented FM new GM mastery-oriented GM progress	**FM outer attributes** **FM self-doubt** FM boost self-esteem	FM Dweck: 3,9 = in-between
Person 21	GM challenge GM challenge	FM outer attributes GM co-operation	FM nfg FM comparing to others	**GM co-operation** **GM attention to task**	FM outer motivation FM performance goal	GM mastery oriented FM negative expectations	FM outer attributes	GM co-operation ?? Dweck: 5=GM
Person 22 **Good example**	FM deteriorating motivation / lack of motivation	GM EFFORT	FM helpless	FM outer motivation	GM monitoring	GM mastery-oriented GM mastery-oriented FM you	FM negative expectation	?????? ??? Dweck: 4,5 = GM
Person 23 classic GM	**?? IT** **GM challenge**	**GM effort** **GM co-operation**	**(FM nfg)** **GM mastery oriented**	**GM mastery-oriented** **GM mastery oriented**	**GM self-respect** **GM monitoring**	**GM mastery oriented**	**GM monitoring** **GM positive expectation**	**Certainly GM** **Dweck: 3,7 = in-between**
Person 24	-		Did not understand the question	??	FM performance goal	FM you FM no progress	??	FM Dweck: 2 = FM