Improving student well-being on Dutch secondary schools

Using Self-Determination Theory to investigate the influence of student coproduction in student counselling on student well-being

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Preface

Dear reader,

You are about to read my Master Thesis, which is my final task before completing the Master Business Administration program with the specialisation Marketing at the Radboud University. I am thankful for being granted the opportunity to execute research in a field of my personal interest, which is the educational sector and more specifically student well-being.

For this opportunity and for the guidance throughout the entire process of this research, I would like to thank Prof. Dr. J. Bloemer. Her warm personality and professional feedback have helped me a lot in the past six months. For the feedback provided during this research process I would also like to thank my second examiner, I.W.A. Weeterings MSc, and my peer students Vincenzo, Anouk and Sule.

Furthermore, a special thanks goes to my roommate and friend Sem, my girlfriend Julia and my parents for all of their support the past six months. They have helped me to stay motivated and to keep a positive spirit.

Hopefully, you as a reader can read my work with as much interest as I had whilst working on this subject.

Dirk Spanjer

Abstract

This research provides insights in the way the service of student counselling can contribute to preventing the well-being issue among Dutch secondary school students. Organizing student counselling in such way that uplifting changes in student well-being are fulfilled can be done by the use of coproduction. This study investigates this relationship between coproduction in student counselling and student well-being. Also, it examines the drivers of coproduction in student counselling. The crucial determinants of student coproduction in student counselling are addressed in this study by using Self-Determination Theory (SDT). The results of this study show a positive significant relationship between coproduction and student well-being. Student well-being is measured by using the Subjective Student Well-Being Questionnaire (SSWQ). Coproduction has a positive significant relationship as well with all four dimensions of student well-being used in this research based on the SSWQ. Furthermore, the findings of this study show that literacy drives coproduction in student counselling and that attachment avoidance undermines coproduction in student counselling. These results can be used by managers and counsellors to improve student well-being through student counselling. This study contributes to Transformative Service Research (TSR) by adding knowledge on the role of coproduction in services that aim to create uplifting changes in (consumer) well-being.

Key Words: Coproduction, Student Well-Being, Self-Determination Theory, Autonomy, Competence, Relatedness, Involvement, Literacy, Attachment Anxiety, Attachment Avoidance, Transformative Service Research, Subjective Student Well-Being Questionnaire.

Content

1. Introduction

1.1 Student Well-Being

The well-being of Dutch students is under pressure as a result of societal changes and an increasing complex society. This is concluded by Unicef Nederland and a Dutch research institute focussed on the Dutch education (Trimbos-instituut, 2020). The well-being of Dutch students has been decreasing in recent years and has now reached alarming levels (Stevens et al., 2018; Vos & Hetebrij, 2021). The decrease in student well-being results in multiple negative effects. Students have less motivation to execute their school work and their educational performances decrease (van Baars, 2021). Also, Dutch students experience more mental issues and depression occurrence has increased as well (Coumans, 2019). This has resulted in a mental health crisis among Dutch youth.

The decreased well-being that Dutch school students experience has been aggravated by the Covid-19 crisis. The lockdowns due to the Covid-19 crisis have been harmful for the overall level of student well-being. This is due to for example rising individual workloads, less social interaction and less guided progress (Hagemeier & Dowling-McClay, 2020). The consequences of the decrease in well-being among Dutch students can be severe for society at large. Other research has shown that unemployment, depressions and health issues increase in a society as a result of the decrease in well-being (Marks & Fleming, 1999).

The current situation of the well-being among Dutch students requires a call for action to reduce the lack of well-being and all the problems arising with this, according to the National Institute of Public Health and the Environment (RIVM) of the Netherlands (RIVM, 2019).

Student counselling can have a positive influence on student well-being. Thus, it can be used to reduce the lack of well-being and all the problems arising with this. Student counselling is a service that aims to create uplifting changes in the well-being of students. This research provides insights in the way the service of student counselling can contribute to preventing the well-being issue among Dutch secondary school students. The RIVM states that students in their secondary school period create a foundation for well-being levels throughout their entire lives. This makes Dutch secondary school students a suitable unit of analysis. Also, since education in the Netherlands is compulsory until the age of 18, all Dutch youth can be reached via the educational system (RIVM, 2019). So, organizing student counselling well at Dutch secondary schools can improve student well-being (Anderson & Graham, 2016; Holopainen et al., 2020).

1.2 Coproduction

Organizing student counselling in such way that uplifting changes in student well-being are fulfilled can be done by the use of coproduction. Earlier research has described a major role for coproduction within services to increase consumer well-being (Mende & van Doorn, 2015). Mende and van Doorn (2015) have researched the role of coproduction in enhancing well-being for service consumers. This role has been researched more in recent years and research shows that coproduction in services lead to an increase in consumer well-being (Bovaird & Loeffler, 2013). The research by Mende and van Doorn (2015) was executed in the financial service industry, but possibly coproduction in counselling can also have a big influence on student well-being (Reed et al., 2021). Transformative Service Research (TSR) is research aimed at creating uplifting changes and improvements in the well-being of individuals (consumers and employees), communities, and ecosystems (Anderson & Ostrom, 2015b; Ostrom et al., 2015; Roy, 2017). This study is part of TSR as Dutch students are the consumers of counselling services and the goal of this research is to improve the well-being of these students. This thesis will use the Mende and van Doorn (2015) research and conceptual model as a basis. It will be applied to the context of the Dutch counselling system.

Coproduction is the customer's participation in the creation of the core offering itself. In other words, the success of student counselling depends heavily on the collaborative behaviour of students (Lusch & Vargo, 2006). Therefore, in this research, coproduction is seen as the mechanism to improve student well-being. This entails that the more students coproduce their student counselling service, the more likely it is that this counselling service will fulfil its goal. This goal is to increase student well-being. This is in line with how Mende and van Doorn (2015) use coproduction to improve financial well-being in their research. With coproduction as the mechanism to improve student well-being it is important to understand coproduction in the student counselling sector. To be able to have this understanding, the crucial determinants of student coproduction in transformative service settings such as student counselling have to be identified.

1.3 Self-Determination Theory

This research addresses the crucial determinants of student coproduction by using the Self-Determination Theory (SDT). SDT argues that autonomy, competence and relatedness are the three psychological needs that form the platform for a desired behavioural change (Deci et al., 2008). SDT is a theory that explains how behavioural change can be realized. First, the theory

was used as a motivational theory, but more recent SDT has also been used in a well-being context. For this research, the SDT's autonomy, competence and relatedness are considered to be the crucial needs for students in order to make sustainable changes towards increasing their well-being. This is because the presence of these needs enlarge their ability to influence the process and outcomes of the student counselling service they experience (Ryan, 2009).

First, the notion of *autonomy* is needed. Autonomy entails that students experiencing the student counselling, personally value the counselling service. A student needs to feel that one is acting out of a sense of volition and self-endorsement (Adams et al., 2017; Ryan, 2009).

Second, there is a need for *competence.* This entails the confidence a student has and the need to feel effective in one's behaviour. If one feels a level of mastery over a certain task, it reduces stress which leads to enhanced well-being. Competence is considered a determinant of coproduction since perceived competence enlarges the influence of an individual on decisions and by such, the counselling process (Mende & van Doorn, 2015).

Finally, the SDT states that individuals need *relatedness* to experience well-being (Ryan, 2009). Relatedness implies that one needs to feel cared for and one needs a sense of being respected (Mende & van Doorn, 2015). To have a sense of relatedness within the student counselling service process enlarges coproduction in this service.

These three determinants of the SDT are used in this thesis to understand coproduction in student counselling in the case of Dutch secondary school students. By doing this, this research follows the framework as used by Mende and van Doorn, (2015).

1.4 Research Question

The objective of this study is to contribute to reducing problems concerning the decreased well-being among Dutch secondary school students. The aim is to do this by examining the student counselling service and to come up with recommendations to create uplifting changes within this service in the Netherlands. To be able to reach this goal, an understanding of the student counselling service in the Netherlands is needed. This research aims to gain knowledge on two aspects. First, what the determinants of coproduction in a transformative service setting, particularly student counselling, are. Second, whether the expected positive relationship between coproduction in student counselling and student well-being exists. This is line with how Mende and van Doorn (2015) use coproduction in counselling.. The research question for this research is:

To what extent do autonomy, competence and relatedness influence coproduction and how does coproduction influence student well-being in student counselling among Dutch secondary school students?

1.5 Relevance

1.5.1 Theoretical Relevance

This study aims to provide insights in the role of coproduction in student counselling services. Student counselling can be considered part of TSR. The role of coproduction in TSR is considered an interesting field of study (Rosenbaum et al., 2011). The possible findings about the relationship between coproduction in student counselling and student well-being can contribute to TSR. The knowledge TSR can gain on the relationship between coproduction in student counselling and student well-being make this study relevant for academic literature.

A second reason that this research is relevant in a theoretical sense is that most of the recent research executed in the subject of coproduction focusses mostly on the possible beneficial outcomes coproduction in a counselling service can have, whereas this research also aims to gain knowledge on the determinants of coproduction (Creed et al., 2003).

Lastly, this study is relevant in a theoretical sense since it adds to the literature on student well-being. Researchers have been struggling with how student well-being can be measured and influenced (Anderson & Graham, 2016; de Róiste et al., 2012; Renshaw et al., 2015). This study can provide useful insights regarding the topic of student well-being. These insights can be used in future literature. Possibly, the limitations of this research can also be a starting point for future research on the subject of student well-being.

1.5.2 Practical Relevance

The practical relevance of this research is mainly the contribution to solving the problem described. This contribution is delivered in two ways.

First, this study aims to gain knowledge on the relationship between coproduction in student counselling services and student well-being. The knowledge about this relationship can be used by teachers, counsellors, managers and others employed in the education sector. Students that have high well-being perform better at school (Anne Konu & Rimpelä, 2002; Soutter et al., 2014). For schools it is relevant that well-being under students is high (A. Konu & Lintonen, 2006). With the knowledge about the relationship between coproduction in student counselling services and student well-being this research provides, well-being can be

increased. Thereby, this research aims to play a part in the call for action by the RIVM on the decrease in student well-being to alarming levels.

Second, this study also aims to gain knowledge on the determinants of coproduction in student well-being. If the positive relationship between coproduction in student counselling services and student well-being can be found, the knowledge on what determines coproduction also forms practical relevance. This is because that knowledge can help to organise student counselling in such way that coproduction by students is realised. Managers, counsellors and teachers should then use the knowledge gained in this study by making sure the determinants that positively relate to coproduction are present in their counselling and that the determinants that negatively relate to coproduction are not present.

Furthermore, it is known that the number of students that seek help is lower than the number of students that actually are in mental health needs (Ratnayake & Hyde, 2019). This makes the decrease in student well-being even more alarming and relevant. Also, when students coproduce their student counselling service this gap between the number of students that seek and the number of students that actually are in mental health needs can be narrowed.

1.6 Research Structure

This research is structured by the use of five chapters. In this first chapter, the introduction, the research problem is introduced and defined. The second chapter contains a theoretical background on this subject. The goal is to come up with a conceptual framework with sufficient ground in relevant literature. The third chapter aims to describe the method used to test this conceptual framework in the case of Dutch secondary school students. The fourth chapter provides the results of these tests and in the fifth chapter a conclusion with recommendations is presented.

2. Theoretical Framework

In this chapter the literature will be examined in order to understand how coproduction in student counselling influences student well-being. The relevant variables to understand this are presented and examined in this chapter. This central issue will be tackled by examining the following issues in the corresponding paragraphs. In paragraph 2.1 it will be explained what is understood by 'student well-being' in this research. In paragraph 2.2 it will be explained what is understood by student counselling in this study. In paragraph 2.3 an explanation of 'coproduction' in this study is provided. In paragraph 2.4 it will be explicated what is understood by 'autonomy, competence and relatedness' in this study. After this, it will be explained what is known about the relations between these concepts in literature and how these relationships are also present in this study. These relations are explained in paragraph 2.5, with the goal to come up with hypotheses about how the relationships between the explained variables are present in the case of Dutch secondary school students. At last the conceptual framework, including hypotheses, is presented in paragraph 2.6.

2.1 Student Well-Being

Across different research disciplines the term well-being has been operationalized in different ways (Frow et al., 2019). In economic research well-being is often defined by antecedents such as employment status, (relative) income and financial distribution (Frey & Stutzer, 2010). In organizational behaviour research the mostly used antecedents of well-being are different. These consist of concepts such as health of the employees, health of the organization and job complexity (Van Veldhoven et al., 2005). In psychology research well-being is much more defined in subjective terms. Cognitive and affective evaluations of an individual's life form the basis for the operationalization of well-being in such research (Diener et al., 1999). Since these operationalizations of the term well-being differ to such as large extent across the various research domains, it is important to define well-being context specific when researching well-being. This research focusses on student well-being, therefore it is important to gain understanding of how student well-being has been defined in literature.

Student well-being has been examined in various manners as well. Often student well-being has been measured in one specific context, such as culture (Borgonovi, 2015; Fraillon, 2004). Replication of these studies are hard because how context specific they are. Also, different researchers have included a great variety of aspects when measuring student well-being. The aspects used in these researches are often derived from general well-being

research and applied to the student context (Kern et al., 2014; Nelson et al., 2015). However, in previous research, one can also find a model to define and measure student well-being that has been designed specifically for this research's target group. This research focusses on secondary school students. The Subjective Student Well-being Questionnaire (SSWQ) has been developed and validated with the purpose of creating a manner to adequately measure school and adolescent specific well-being (Renshaw et al., 2015). The SSWQ has proven to be an effective way of defining and measuring student well-being (Renshaw, 2015).

The SSWQ consists of four dimensions that capture well-being. These dimensions are *joy of learning*, *school connectedness, educational purpose* and *academic efficacy.* These four dimensions are the result of a literature review on student well-being. This literature review was executed specifically and exclusively on well-being literature concerning students and schools. This literature review provided 13 student well-being related subdimensions. These were grouped and defined into the SSWQ that together explain student well-being (Renshaw et al., 2015). Using the SSWQ literature, student well-being can be defined as: ''a students' perception of healthy and successful living at school''(Renshaw et al., 2015, p.538). Since this research uses the SSWQ as basis to define and measure student well-being this definition is also used to explain student well-being in this research.

As mentioned before, this SSWQ definition of student well-being can be seen as a combination of four dimensions. The first dimension that is part of student well-being in this study is joy of learning. This dimension concerns whether or not students experience positive emotions and cognitions when engaged in academic tasks. The more positive emotions and cognitions are experienced during academic tasks, the higher the joy of learning is. The second dimension in the SSWQ is school connectedness. This is defined as feeling cared for by and relating well to others at school. The more a student feels cared for and relates well to others at school, the higher the level of school connectedness is. The third dimension that is part of student well-being is educational purpose. This refers to the degree to which students appraise school and academic tasks as important and meaningful. The higher students appraise school and academic tasks as important and meaningful the higher their educational purpose is. This educational purpose is also part of student well-being in this study. The last part of student well-being in this study is academic efficacy. Academic efficacy is defined as appraising one's academic behaviours as effectively meeting environmental demands. The more a student feels effective in meeting the expectations about school performances of his or her environment, the higher the level of academic efficacy is for this student (Renshaw et al., 2015). These four dimensions of the Subjective Student Well-Being Questionnaire are used in

this research to define student well-being. This is done with the goal of gaining understanding of student well-being among Dutch secondary school students.

Student well-being can be influenced by student counselling service (Anderson & Graham, 2016; Holopainen et al., 2020). Therefore, it is important to examine literature and define the student counselling service and how this concept is used in this study. The literature has to be examined to understand how the student counselling service can be organised.

2.2 Student Counselling

Literature shows that student counselling can have a positive influence on student well-being (Holopainen et al., 2020). In addition to this, there is a need for student counselling at schools. Students experience problems leading to a decrease of well-being when student counselling is not available for them (Bekere et al., 2019). Students are, more than the general population, vulnerable to a range of psychological difficulties. These can be limited by student counselling (Murray et al., 2015). Student counselling has proven to be positively related to items comparable to all dimensions of student well-being used in this study (Ion et al., 2020). Considering all these benefits of student counselling and the role student counselling services have in enhancing student well-being it can be stated that an understanding is needed of how student counselling is defined and measured in the academic literature.

Student counselling is designed differently across different educational institutions and schools (Struyf, 2020). It is therefore important to define student counselling specifically for this study. This is to ensure that it is clear what is meant by student counselling during this research, as this definition can vary not only in practice, but in literature as well (Connell et al., 2008). Student counselling entails all preventive and guiding measures that educational organizations take to counsel students (Struyf, 2020). This can be executed by an individual counsellor or a group of counsellors that belong to the educational organization. The goal of student counselling, as a form of TSR, is to create uplifting changes in the well-being of the consumers (Anderson & Graham, 2016; Anderson & Ostrom, 2015a). The consumers of the student counselling programs in this study are the Dutch secondary school students. With the earlier defined well-being of students, student counselling in this study can be defined. It entails all preventive and guiding measures that educational organizations undertake to increase their students' joy of learning, school connectedness, educational purpose and/or academic efficacy. Since this research aims to come up with recommendations to improve the

Dutch secondary school student counselling system, information about how to organize counselling is sought in literature.

2.3 Coproduction

Coproduction has proven to play an important role in service processes and more specifically in counselling (Mende & van Doorn, 2015). Coproduction finds its origin in research in the public sector and the collaboration between public departments and citizens (Brandsen et al., 2018). Since the origin in the public sector, the coproduction concept has been applied to many more different fields of research (Elwyn et al., 2020). For this research it is relevant to focus on coproduction in the service literature. Mende and van Doorn (2015) use the concept of coproduction to examine and improve a counselling service in their research. In their research, coproduction is the mechanism to improve financial well-being (Mende & van Doorn, 2015). Mende and van Doorn (2015) argue that counselling can be increased in effectiveness with the presence of coproduction. Their research claims that coproduction is positively related to consumer well-being. This was proven in financial counselling and is therefore also considered to be true for student counselling.

The research by Mende and van Doorn (2015) is examined to clarify what is understood by coproduction in student counselling for this study. Mende and van Doorn (2015) define coproduction as the customer's participation in the creation of the core offering itself. When this definition is applied to this study, the following definition can be used: coproduction in student counselling is the student's participation in the creation of the student counselling service. This definition of coproduction in student counselling is used in this study.

2.4 Self-Determination Theory

Determinants of coproduction in student counselling used in this study are found in the Self-Determination Theory (SDT). This is in line with the determinants of coproduction in the research in the financial counselling sector by Mende and van Doorn, (2015). The Self-Determination Theory originates from the 1970s, but the popularity among researchers largely increased two decades later. It states that the well-being of an individual is influenced by the degree to which three psychological needs are present (Deci et al., 2008). These so-called determinants of well-being in the SDT are autonomy, competence and relatedness. The SDT has proven to be relevant in different academic contexts, such as business research,

psychological research, social research and educational research (Ded et al., 1994; Lam et al., 2015; Ryan, 2009; Sánchez-Oliva et al., 2017). SDT's autonomy, competence and relatedness have been applied to the financial sector as well. There, the psychological needs have been used as determinants of coproduction (Mende & van Doorn, 2015). In this study, the SDT will be used in a similar way. The presence of autonomy, competence and relatedness of the SDT are used in this research as determinants of coproduction.

Because of the role as determinants of coproduction it is important to understand the meaning of autonomy, competence and relatedness. More concretely, these concepts have to be defined specifically in terms of what they mean in this study.

2.4.1 Autonomy

The first determinant of coproduction in this study is autonomy. Autonomy, in the SDT refers to being the perceived origin or source of one's own behaviour and actions. When an action is in line with an individual's own interest and values, it can be considered autonomous (Ryan & Deci, 2002). It is often misunderstood that autonomy and counselling cannot be combined. However, it is possible that actions that are influenced or initiated by others, still are considered to be actions with high autonomy. This is the case when the actions are still in line with the individual's interests. One needs to value the requested or adjusted behaviour intrinsically in order to conserve the need of autonomy. Autonomy is often confused with the different concept of independence, but the SDT claims these concepts are actually not ambiguous (Ryan & Deci, 2002). Independence means not relying on external sources or influences. This is not directly related to autonomy because external sources or influences can provide useful insights and do not per se decrease the perceived autonomy of an individual. Therefore, autonomy can, and should, exist in counselling as well. Counselling services, external sources or influences, need to take into account the autonomy of the individual consuming the counselling service and ensure that autonomy is still present for the consumer.

To gain information on how autonomy can be present in counselling services, the research by Mende and van Doorn (2015) is examined. They state that autonomy in a counselling service means that individuals consuming the counselling service personally endorse the importance of this counselling (Mende & van Doorn, 2015). They argue that the perceived importance is explained by one's *involvement* in the coproduction of the counselling service. So, they define autonomy as the degree of customer involvement in coproduction.

The research by Mende and van Doorn (2015) forms the basis for this study, but is

executed in a different context. Because of this, the definition of autonomy by Mende and van Doorn (2015) has to be altered to fit within the context of this research. In this study, the counselling service is the counselling of Dutch secondary school students. By staying close to the use of involvement as measure for autonomy in counselling research, as seen in Mende and van Doorn's research, a definition has been created to use for the concept of autonomy in this study. What is understood by autonomy in this study is therefore: the degree to which students are involved in the coproduction of student counselling services.

2.4.2 Competence

The second determinant of coproduction in this study is competence. In the SDT this entails the need to feel effective in one's actions and feeling the opportunity to exercise and express one's capacities. In this need for competence, individuals search for challenges that enhance their skills and capabilities (Ryan & Deci, 2002). Competence relates to the degree of trust in one's own abilities. So, the actual capacities and abilities of the individual are not defined by competence. Competence is a felt sense of confidence and effectivity in one's capabilities and abilities, as explained by the SDT (Ryan & Deci, 2002).

To be able to use SDT's competence in this study, the research by Mende and van Doorn (2015) is examined. That shows how competence can be present in counselling services. Applying the notion of competence from the SDT to the counselling setting, it can be explained as the need for individuals to experience confidence in their ability to influence outcomes and in making sustainable changes towards an increase in their well-being (Mende & van Doorn, 2015). Mende and van Doorn (2015) combine the idea of competence with research on how literacy influence people's decisions (Mitchell & Dacin, 1996). They consider *literacy* as a measure for competence in counselling settings.

Since this research by Mende and van Doorn (2015) is used as basis for this study and executed in another context, the concept literacy has to be applied to the student counselling setting. Specifically to the case of Dutch secondary school students. With doing this, this research aims to stay close to the definition of competence as used by Mende and van Doorn, (2015). The degree to which students feel confidence and competence in educational matters, in terms of educational literacy, is what is meant by competence in this study.

2.4.3 Relatedness

The third and final determinant of coproduction in this study is relatedness. As explained by the SDT it refers to the need of a feeling of connectedness to one's environment. It entails the need to care for others one feels a sense of belongingness to and being cared by those people as well. It is the need to feel part of one's community (Ryan & Deci, 2002). It is closely related to the intention and tendency of people to connect and be close to others. The outcome of the relation is not what is meant by relatedness. Relatedness refers to the psychological need of feeling secure and cared for in a certain community (Ryan & Deci, 2002).

Mende and van Doorn (2015) that relatedness in counselling refers to a sense of being respected, understood, and cared for. And that this is essential in setting in which a provider guides another person toward change (Mende & van Doorn, 2015; Ryan, 2009). Mende and van Doorn (2015) explain that the conceptual roots of the concept of relatedness lies within attachment theory. This claims that whether an individual can establish consistent and safe relationships is dependent of their attachment style (Mikulincer & Shaver, 2007). These attachment styles can be *attachment anxiety* and *attachment avoidance* in the research by Mende and van Doorn, (2015).

To be able to explain relatedness in this study, these attachment styles are used. This way, this research stays close to the framework used by Mende and van Doorn, (2015). For this study student attachment anxiety refers to a students' fears about the counsellor not being accessible when the student needs help. Besides that, the anxiety a student has refers to an excessive need for support and fear of rejection from the counsellor (Mende & van Doorn, 2015). And student attachment avoidance refers to students' fear of relying too much on the counsellor. In addition, it describes the students' suspicion of the counsellors' intention. Because of these suspicions, students strive for emotional and mental distance from the counsellor (Mende & van Doorn, 2015). If these are present, barriers exist in the relationship between the student undertaking the counselling service, and the counsellor. These barriers can hinder the student in coproducing the counselling service.

2.5 Hypotheses Development

Based on the literature review above, hypotheses can be developed. Expected relationships between the variables are depicted in this paragraph.

First, autonomy is expected to positively influence coproduction. SDT claims that autonomy is a human need for motivation and well-being (Adams et al., 2017). The positive

expected influence of autonomy on coproduction is therefore in line with what SDT suggests. Also, previous research has shown this positive relationship between autonomy and coproduction (Mende & van Doorn, 2015). Using human logic, one would also expect that the more a student is involved in the counselling process, the higher the level of coproduction of that student is. Therefore, the following hypothesis has been formulated:

Hypothesis 1: *Involvement* is positively related to *coproduction*.

Second, competence is also expected to positively influence coproduction. This has been the case in empirical research before and is in line with what the SDT claims (Adams et al., 2017; Mende & van Doorn, 2015). Also, when one has no specific knowledge of previous research or SDT this relationship would be expected. A layman would expect that the more a student has confidence regarding educational matters, the more this student participates in the creation of a student counselling process. Based on this expectation, the following hypothesis has been formulated:

Hypothesis 2: *Literacy* is positively related to *coproduction*.

Third, there is a negative expected relationship of relatedness in this study on coproduction. Relatedness is expected to positively relate to human motivation and well-being, according to SDT (Adams et al., 2017). In this study however, relatedness is explained in dimensions that indicate a lack of relatedness. Therefore it is important to understand that for this study the dimensions determine that relatedness is expected to negatively influence coproduction and that this is still in line with SDT. This relationship has also been proven in earlier research (Mende & van Doorn, 2015). Also, from logical reasoning one would expect that when students perceive higher attachment anxiety and attachment avoidance regarding their counsellor, they are less inclined to participate in the creation of the student counselling process. As a result of this, the following hypotheses have been formulated:

Hypothesis 3a: *Attachment anxiety* is negatively related to *coproduction*.

Hypothesis 3b: *Attachment avoidance* is negatively related to *coproduction.*

Mende and van Doorn (2015) have executed research on coproduction in counselling and the influence on well-being. The positive relationship found in that research is also expected in this study that is set in the context of student counselling on Dutch secondary schools. The higher the level of coproduction in student counselling, the higher the level of

well-being will be as a result of this student counselling. This is something also following from logical reasoning, since the service provided can be better adjusted to an individual student's case. Therefore, the following hypothesis for the relationship between coproduction and student well-being has been formulated:

Hypothesis 4: *Coproduction* in student counselling is positively related to *student well-being*.

2.6 Conceptual Framework

The theoretical framework that has been explained in this chapter and the corresponding hypotheses developed in paragraph 2.4 are depicted in Figure 1. It shows the conceptual framework used in this study.
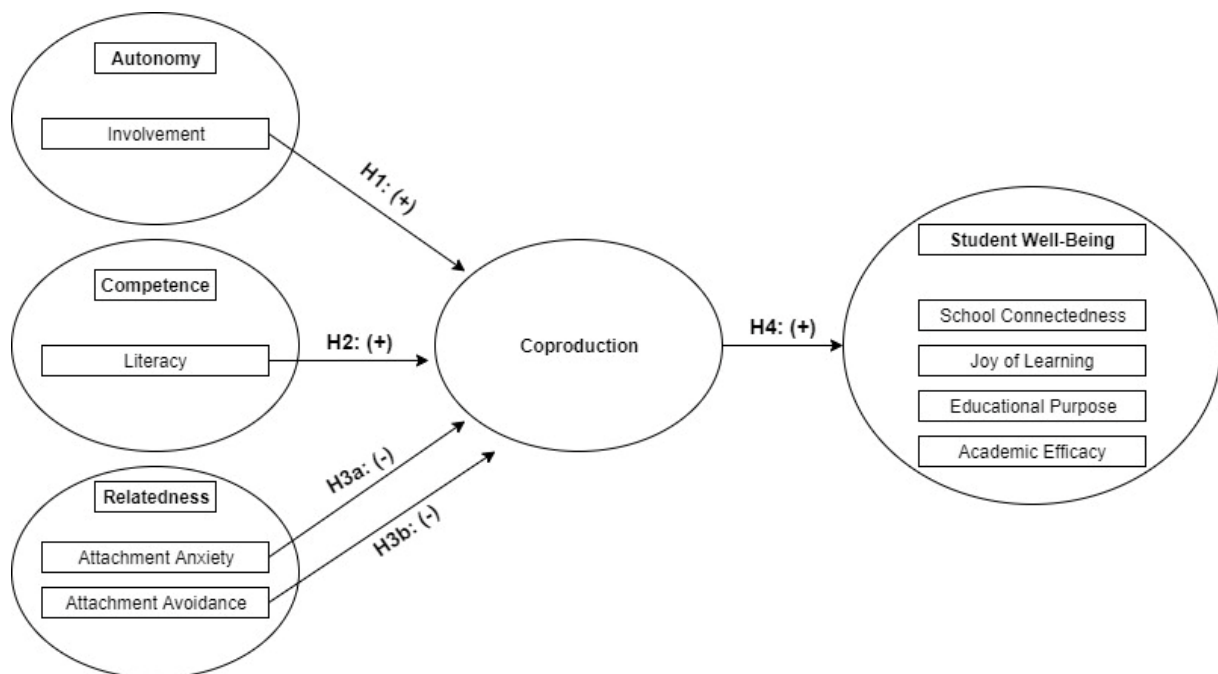
Figure 1: Conceptual Framework

3. Methodology

This chapter contains the rationale for the adopted methodological approach. The design of the research is discussed, followed by an explanation of the data collection technique and the measurement used in the data collection. Finally, the ethics of the research is discussed.

3.1 Research Design

In order to gain insights in the influence of autonomy, competence and relatedness on student well-being through coproduction this research collects quantitative data. This quantitative data is collected by using a survey. One of the benefits of using a survey is that it allows for including a representative amount of Dutch secondary school students to make claims about the entire population. Conclusions about the formulated hypotheses can be drawn based on statistical analyses that can be executed with the use of the quantitative survey data (Doorewaard & Themkes, 2019).

3.2 Data Collection

3.2.1 Sample Characteristics

To execute a research that is representative for Dutch secondary school students and to be able to conduct significant statistical tests a sample is used in this research. The population used in this research is the Dutch secondary school students. This is a logical consequence of the formulated research goal. The Dutch secondary school students that are included in this research's population must have experience with a counselling program. Without this experience no useful information can be distracted from the population. For sample size the formula *adequate sample size= 50 + 8m* is used (Field, 2013). In this formula *m* stands for the number of predictors. In this research, there are five predictors. There are four constructs functioning as predictors of coproduction and coproduction is in its turn a predictor of student well-being. The adequate sample size for this research to be able to conduct significant statistical tests is therefore 90 (*50 + 8*5 = 90).* Of course, these 90 respondents should all provide non-missing data. In practice however, missing data does occur. In order to incorporate the risk of missing data, one can add 30% to the ideal minimum sample size (Doorewaard & Themkes, 2019). For this research adding this 30% results in an ideal minimum sample size of 117 respondents. The sample is formed by means of convenience sampling. This means that the sample is constructed as a result of availability. It is a form of

non-probability sampling, meaning that not every individual of the population has an equal chance of being part of the sample. The reason the convenience sampling method is used is since this is the most pragmatic and effective way of reaching students.

3.2.2 Data Collection Technique

The collection of the data is done in a cross-sectional manner, because of pragmatic reasons. The aim is to reach Dutch students with experience with a student counselling program through individual contacts at a Dutch secondary school. In cooperation with a student counsellor, a school director and a student coordinator at Het Rhedens Dieren data is collected. Het Rhedens Dieren is a school for secondary education in the Netherlands. The school provides education on all levels and to all the age groups that the Dutch secondary education contains. In this manner, the aimed for 117 respondents have been reached. The data is gathered by the use of Qualtrics, an online survey program. The survey has been filled in by students between classes in a quiet and supervised environment. Guidance has been provided where students faced difficulties with filling in the survey. Because the data is gathered by the use of Qualtrics the data can easily be transferred to a program in which statistical analyses can be executed.

3.3 Measurement

To measure the variables in this research a survey is used. The items used in this study's survey are all based on existing literature. From Mende and van Doorn (2015) the items to measure the independent variable and coproduction are used. From the SSWQ the items are used to measure the dependent variable in this study (Renshaw, 2018). All the items in this research are used in a 7-point Likert scale. The appropriate measurement level for all items in this study is the interval measurement level. This is line with both Mende and van Doorn (2015) and the SSWQ. In the 7-point Likert scale the respondents are asked for each item to indicate to what extent they agree with the statement. The 7-points vary from 'Completely Disagree' to 'Completely Agree'. Also, respondents have the possibility to indicate they do not have an opinion on the specific item. In line with Mende and van Doorn (2015), the following demographic variables are included in the measurement model: age, gender, education level. Co-variates that are not relevant for this research, such as marital status and income are not included in the measurement model for this study.

3.3.1 Measurement Independent Variables and Coproduction

For the measurement of the independent variables and coproduction in this research the study by Mende and van Doorn (2015) is used. Involvement, literacy, attachment anxiety and attachment avoidance have all been operationalized and research by Mende and van Doorn (2015). That also counts for coproduction. Their results show that their measurement scale for each construct was reliable. Therefore, this research uses the same items for these constructs. However, the items have been adjusted to the situation of Dutch secondary school students. Also, the items have been translated into Dutch. This is done to prevent measurement errors. To stay as close as possible to the original items reverse-translation has been used. This entails the process of re-translating content from the target language back to its source language. Also, face-validity was checked after the adjustments made to the items for them to be applicable for Dutch secondary school students. This was done in cooperation with a Dutch secondary school student that has experience with a student counselling service. The items used for the measurement of the independent variables in this study can be found in Appendix A. The items used for the measurement of coproduction in this study can be found in Appendix B. These appendices also provide the research these items are based on and the code used for these items in the data analysis later in this research.

3.3.2 Measurement Dependent Variable

The dependent variable in this study is operationalized on the basis of the SSWQ. The items for the dimensions joy of learning, school relatedness, educational purpose and academic efficacy have shown to be reliable in multiple research publications (Renshaw, 2015, 2018; Renshaw et al., 2015). Because of this, the items are also used in this study's survey. The SSWQ has been created specifically for secondary school students in the adolescent age. This is in line with the research population for this study. Therefore, no adjustments besides translation had to be executed. For translation, reversed translation was used similar to how this has been done for the independent and mediating variables. The items used for measuring the dependent variables in this study can be found in Appendix 3. Also the research these items are based on and the codes used for these items in the data analysis later are provided in Appendix 3.

3.4 Validity and Reliability

The measurement items used in this research to measure the constructs have all been used in prior research. In those studies the validity and reliability measures have always provided acceptable outcomes.

The lowest value of Cronbach's alpha found for the constructs based on Mende and van Doorn's research was .67 in their study. All other values were found to be higher. This is above the acceptance threshold for Cronbach's alpha that measures internal consistency (Mende & van Doorn, 2015). Also, validity measures were found to be sufficient for all constructs in the research by Mende and van Doorn (2015).

For the SSWQ the lowest value of Cronbach's alpha found was .72. This is also above the threshold for internal reliability. Furthermore, structural validity, external validity and substantive validity have been tested for the SSWQ and all were found to be sufficient. Since these results have been found in comparable circumstances as this the circumstances in this study, validity and reliability are expected to be sufficient for the variables measured in this study.

3.5 Pre-test

In order to prevent measurement errors from occurring, first a pre-test will be distributed. This allows the researcher determine if respondents understand the questions and have the information that questions require. The aim is to execute a pre-test among at least five respondents that have the same characteristics as the research population. This means that they should be Dutch secondary school students experienced with student counselling. Also, the aim is to include at least five (peer) researchers that have experience with surveys. They should investigate from a different point of view if they see a risk for measurement errors. The final survey is included in Appendix D.

3.7 Research Ethics

For this research to be executed, the data collection is vital. Therefore, respondents and their honesty are valuable to the researcher. In order to prevent harmful consequences for the respondents as a result of participating in this study, some measure have been taken.

The respondents in this study fill in the survey anonymously. This way, the privacy of the respondents is guaranteed. Also, no respondents will be forced to participate in this study. Filling in the survey always has to be voluntary. Furthermore, the respondents will be

informed about the researcher and why the researcher executes this research. This way the respondents can always contact the researcher and have an understanding of the purpose of the research. Which is ultimately to help them. At last, the respondents will be secured that the information and data collected in this study is solely used for the execution of this research and will not be used for other purposes. Altogether, these measures should make sure the respondents are treated with respect.

4. Results

In this chapter the results of the data analyses are presented. First, the final sample is described. Second, the quality of the data is described by means of validity and reliability analyses. The discriminant and convergent validity is analysed by the use of factor analyses and the reliability by the use of a reliability analysis. Then, the four assumptions for multiple regression analysis are presented. Finally, the multiple regression analysis itself is presented to test the hypotheses of this research.

4.1 Sample Descriptive

During the data collection a total of 121 different survey responses have been collected in the target group of this research. This data has been adjusted to be able to create a final sample adequate for statistical analyses.

Reponses have been excluded based on two reasons; missing data and age. Four of the 121 responses contained missing data. When analysing these missing data using descriptive statistics in SPSS, it was found that the missing data were caused by item Intro_2. This was the item for the respondents to accept the terms of the research. Four students did not accept the terms and therefore are excluded from the final sample. The second reason for excluding responses came from analysing item D2, where respondents were asked in an open field to fill in their age. Based on this descriptive seven respondents were found inappropriate to be part of the final sample. One of them was due to the fact that the filled in age was not within the appropriate sample characteristics limits. The other cases were excluded to prevent measurement errors. One can assume that there are no students that filled in the survey with an actual age of one, or 87 or higher. These cases were excluded from the final sample, since it can be assumed that these students did not fill in the survey seriously. After these adjustments the final sample of this research contained 110 respondents.

The characteristics of the final sample are categorized by education level, gender and age. The final sample contained students from all levels in Dutch secondary education. It contained 22 VMBO students, 51 HAVO students and 37 VWO students. There was almost an equal division of genders in the sample: 48 male and 55 female respondents. Two students did not identify themselves as male or female and five students were not willing to share information on their gender. The final sample contained Dutch secondary school students from the age of 13, 14, 15 and 16. 52 students were 14 (52), 35 students were 13, 18 students

were 12 and only four students in the sample were 16. All of the descriptive statistics SPSS output on the sample can be found in Appendix E.

4.2 Quality of the Data

In this section the quality of the data is examined to check whether proceeding the analyses with this data is appropriate or not. First, discriminant validity is examined. Second, convergent validity is examined and lastly the reliability of the data is examined.

4.2.1 Discriminant Validity

To examine the discriminant validity of the data in this research a common factor analysis with orthogonal rotation was executed in SPSS. This research is based on hypothesized constructs. With common factor analysis it can be examined whether these constructs can indeed be identified. Principal axis factoring should then be used as the extraction method, as this is an adequate technique for identifying latent constructs in the data (Hair et.al, 2019). The factor analysis has been executed with an orthogonal rotation. Orthogonal rotations lean more toward the assumption that the factors do not correlate with each other. That means that items loading on one factor do not load on another factor. This is also expected for the constructs in this research. Varimax rotation belongs to the different types of orthogonal rotations and is an option in SPSS. Therefore, to test for discriminant validity this study uses a common factor analysis with principal axis factoring as the extraction method and varimax as the rotation method.

Before examining the outcomes of the rotated factor matrix, first it was checked whether the data is adequate to examine the rotated factor matrix. The data is adequate when the data is suited for factor analysis and there are adequate correlations between the items. To examine whether the data is suited for factor analysis the Keyser-Meyer-Olkin (KMO) measure can be used. The threshold for the KMO measure to be sufficient is >0,5. The KMO measure of this study's data is 0.770 and considered sufficient based on the earlier mentioned threshold. The correlations between the items can be checked by using Bartlett's test of sphericity. Enough correlation should be found in order to extract factors. The threshold for the correlation between items is a Bartlett's test of sphericity significance level of <.05. In this study's data set the Bartlett's test of sphericity indicated a significance level .000. Therefore, it can be assumed that there is enough correlation among the items to execute the factor analysis.

For seven of the nine constructs the common factor analysis showed adequate discriminant validity. This means that the items that measure a specific construct do not correlate with different constructs. This can be seen in the rotated factor matrix that is included in Appendix F. This rotated factor matrix shows adequate discriminant validity for involvement, literacy, attachment anxiety, coproduction, school connectedness, joy of learning and academic efficacy.

Two items measuring educational purpose, however, cross-load on different factors as well. This means that these items correlate with other constructs in this research more than the threshold for cross-loadings of <0.4 (Verschuren & Doorewaard, 2015). For both of these items the construct it correlates with is 'joy of learning'. These loadings are above the threshold, but not extremely high. The loadings are 0.545 and 0.465. Enjoying the learning experience at school and valuing the learning process are two distinct constructs, but they are closely related. They are also both part of student well-being in this study. Since the loadings are not extremely high, the fact that the constructs are related and that the constructs both measure 'student well-being' in this study, it was decided that for 'educational purpose' no items were deleted for discriminant validity reasons.

The rotated factor matrix provided more worrying results for the items measuring 'attachment avoidance'. These items do not load on their own factor, but on the factor for coproduction instead. The rotated factor matrix shows above threshold negative loadings on this factor for the items of 'attachment avoidance'. These results can be explained. Students that avoid attachment with their counsellor also are not likely to coproduce their student guidance service. Negative loadings explain that this relationship is negative. The more students avoid attachment, the less they coproduce and vice versa. However, theoretically the constructs 'attachment avoidance' and 'coproduction' are two distinct constructs. Therefore, the items should not load on the same factor as they do not measure the same thing. Discriminant validity for 'attachment avoidance' is therefore insufficient. Based on theory, the fact that in previous research attachment avoidance was found to negatively influence coproduction significantly and that the results can be explained it was decided in this research that 'attachment avoidance' stays part of this study in the remaining of the analyses. So, also for 'attachment avoidance' no items were deleted.

Overall, based on discriminant validity no items were deleted and left out of this research. The rotated factor matrix that provides the results this decision is based on is presented in Appendix E.

4.2.2 Convergent Validity

Next to discriminant validity, the data in this research should also show convergent validity. Convergent validity shows that items in the scales can be used together to measure a specific construct. This has been examined for all constructs. For student well-being convergent validity has been measured separately for school connectedness, joy of learning, educational purpose and academic efficacy and for the construct itself, being a combination of these dimensions.

The items of the constructs have been included in a similar factor analysis in SPSS as the factor analysis for discriminant validity, but now separately. The results of these separate factor analyses should provide sufficient outcomes for the KMO-measure (>0,5) and should provide a significant Bartlett's Test of Sphericity (<0.05). To show the items explain the construct and convergent validity is present the percentage of variance explained is used. This shows the amount of variance that is captured as a result of the scale. This should be more than the variance explained by measurement error, so >50% (Field, 2013).

The results of the separate factor analyses are depicted in Table 1, the SPSS output can be found in Appendix G. For one but all individual constructs the results show outcomes above the thresholds set for the KMO-measure, Bartlett's Test of Sphericity and the percentage of variance explained. For 'coproduction', the percentage of variance explained is slightly underneath the threshold that has been set. But, the percentage of variance explained is so close to the threshold that the scale for 'coproduction' is still used to explain the construct.

Altogether, no reason was found to remove an item based on the convergent validity analysis.

Construct	KMO-Measure	Bartlett's Test of Sphericity (Sig.)	% of variance explained
Involvement	0.500	0.000	81.474
Literacy	0.635	0.000	57.358
Attachment Anxiety	0.832	0.000	77.812
Attachment Avoidance	0.744	0.000	57.067
Coproduction	0.793	0.000	49.457
School Connectedness	0.809	0.000	69.197
Joy of Learning	0.800	0.000	74.754
Educational Purpose	0.684	0.000	61.606
Academic Efficacy	0.773	0.000	73.001
Student Well-Being	0.655	0.000	51.836

Table 1. Convergent Validity of the constructs

4.2.3 Reliability

To measure scale reliability in this study the internal consistency of the scales are analysed. This internal consistency has been measured by the use of Cronbach's alpha, which is a sophisticated measure for internal consistency. The threshold for Cronbach's alpha for scales in social research most researchers use is 0.6. Researchers often desire the Cronbach's alpha level to be at least 0.8 to obtain high internal consistency more than just acceptable internal consistency.

The Cronbach's alpha has been measured for each construct via SPSS reliability analyses and the results are depicted in Table 2 and Appendix H. All scales for all constructs in this research have acceptable levels of Cronbach's alpha and therefore are seen as reliable based on internal consistency. For four of the scales for the constructs the internal consistency is considered to be high, since they have Cronbach's alpha levels above 0.8. Therefore, no items were deleted as a result of the reliability analyses.

Construct	Cronbach's α	N of Items
Involvement	0.757	2
Literacy	0.627	3
Attachment Anxiety	0.903	4
Attachment Avoidance	0.728	4
Coproduction	0.787	6
School Connectedness	0.850	4
Joy of Learning	0,886	4
Educational Purpose	0,788	4
Academic Efficacy	0.872	4

Table 2. Reliability Analysis of the constructs

4.3 Assumptions for Multiple Regression Analysis

In order to execute a multiple regression analysis, first some assumptions have to be met (Hair et.al, 2019). This section provides the checking of these assumptions before executing the

multiple regression analysis in the next section. The assumptions that are checked are linearity, constant variance of the residuals, independence of the residuals and normality.

4.3.1 Linearity

The first assumption that needs to be checked is the linearity assumption. The relationship between the independent variables and the dependent variable needs to be linear. One can check this by using a scatterplot. For this study this scatterplot was created twice, with both 'coproduction' and 'student well-being' as dependent variables. These scatterplots show a linear relationship between independent variables and the dependent variable in both cases. This can be concluded since no clear pattern can be found in the scatterplots. Both of these scatterplots are depicted in Appendix I. Also, the Std. Residual value within the thresholds in both cases are shown. The threshold for the Std. Residual is that they stay within a minimum and a maximum with threshold values of -3 and 3 respectively (Hair et.al, 2019).

4.3.2 Constant Variance of the Residuals

The second assumption that was checked is the constant variance residuals. The presence of unequal variances is one of the most common assumption violations. In these instances, the residuals are not constant across the range of the independent variable. This causes inaccurate estimation of the residuals of the estimates, and must therefore be prevented (Hair et al., 2005).

Homoscedasticity can be described as a constant range of residuals of an independent variable (Hair et al., 2005). This was checked by looking at the two scatterplots that have been used for checking the first assumption as well.. When there is a consistent pattern the variance is not constant. In the scatterplots no clear pattern can be seen, so it is assumed that the data is homoscedastic. The absence of heteroscedasticity provides ground to use these variables in the multiple linear regression analysis.

4.3.3 Independence of the Residuals

The third assumption that was checked is that the residuals should be independent (Hair et.al, 2019). The table with SPSS output on the third assumption can be found in Appendix I. The Standardized Predicted Value should have a mean value of 0.0 and a standard deviation of 1.000 for the assumption to be met (Babbie, 2010). This is the case for both the model with 'coproduction' as dependent variable and the model with 'student well-being' as dependent

variable. Thus, it was concluded that the error terms were independent and did not influence the regression model. Also, no multicollinearity should be found in the model. This is the case when the VIF values are under the threshold <10. In Appendix I the tables depicting the VIF values for both models can be found. These are all under the <10 value threshold, so no multicollinearity is found in the models.

4.3.4 Normality

Lastly, it was checked if the residuals are distributed normally. This was done by using a P-Plot in SPSS. When examining the P-Plot it is clear that the standardized residuals are normally distributed as the points cluster around the horizontal line and a clear pattern is found (Field, 2013). These P-Plots can be found in Appendix I.

4.4 Multiple Regression Analysis

After examining the quality of the data and checking the assumptions for multiple regression analysis, the multiple regression analysis has been executed. This subsection provides the results of the multiple regression analyses executed in this research.

4.4.1 Drivers of Coproduction

First, the drivers of coproduction are examined. In this research, four independent variables have been included in the multiple regression analysis. The relationship between involvement, literacy, attachment anxiety and attachment avoidance on the one hand and coproduction on the other hand is examined in one model. Before assessing the correlation coefficients and the significance of the correlations, the model fit is examined first. The total R^2 of this model is 0.422, which is an acceptable fit when examining social constructs (Babbie, 2010). Also, the significant F Change statistic implies that the variables included add to the prediction power of the model. Therefore, the β and the significance of this β can be examined. The effects are considered significant for all significance values below 0.05 (Field, 2013). For independent variable involvement the results show a small effect on coproduction (β= .093), and this effect is non-significant. Literacy however has a larger effect on coproduction and this effect is significant. Attachment anxiety does not significantly influence coproduction. In contrast with attachment avoidance, since a significant effect (β= -.620) on coproduction is found for attachment avoidance. All the results of this multiple regression analysis, including the model

fit, the F Change statistic and the effects can be found in Table 3. The SPSS output of this analysis is depicted in Appendix J.

IV	β	Sig.
Involvement	0.093	0.241
Literacy	0.213	0.006
Attachment Anxiety	0.112	0.162
Attachment Avoidance	-0.620	0.000

Table 3. Multiple Regression with IV's on DV Coproduction. Model with Adjusted R Square=0.422 and Sig. F Change=0.000

4.4.2 Influence of Coproduction on Student Well-Being

Next, the influence of coproduction on student well-being in this research is examined. Both the effect coproduction has on student well-being as a variable itself and the effect coproduction has on the different dimensions of student well-being are analysed. These are analysed in separate analyses, thus via separate models. Again, before assessing the correlation coefficients and the significance of the correlations, the model fit is examined. The model fit for student well-being (β= .156) is higher than for the individual dimensions of the construct (β= .083; β= .085; β= .041; β= .097). All the F Change statistic significance values are considered to show a significant value ($p < 0.05$). Therefore, the β and the significance of this β can be examined. Coproduction significantly influences student well-being, (β= .405). Interestingly, coproduction also significantly influences all four dimensions of student well-being in this research individually (β= .303; β= .305; β= .224; β= .324). All the results of these multiple regression analyses, including the model fit, the F Change statistic and the effects can be found in Table 4. The SPSS output of these analyses are depicted in Appendix J.

DV	β	Sig.	Adjusted R Square	Sig. F Change
Student Well-Being	0.405	0.000	0.156	0.000
School Connectedness	0.303	0.001	0.083	0.001
Joy of Learning	0.305	0.001	0.085	0.001
Educational Purpose	0.224	0.018	0.041	0.018
Academic Efficacy	0.324	0.001	0.097	0.001

Table 4. Multiple Regression with IV Coproduction on Student Well-Being and its dimensions

4.4.3 Additional Analyses

In the results of the multiple linear regression analysis concerning the influence of involvement, literacy and attachment styles on coproduction, no significant influence was found of involvement on coproduction. However, this relationship was expected beforehand. The researcher has had conversations with students included in the final sample and some indicated that the measurement of involvement in this study raised some uncertainty. Therefore, the multiple regression analysis concerning the drivers of coproduction has been executed again including single items for involvement. The results of these analyses however also did not provide a significant relationship between involvement and coproduction. The results of the additional analyses are depicted in Appendix K. Therefore, this study continues to interpret the results of the analyses including all variables and does not further investigate the single item analyses results.

5. Conclusion and Discussion

This chapter contains the conclusions of the research. This entails that the research question is answered using the results from chapter 4 and the literature review presented in chapter 2. Also, a discussion about these conclusions is provided. Furthermore, contributions, both academic and managerial, are discussed. Lastly, the limitations of this research are discussed. These lead to possible directions for future research.

5.1 Conclusion

This research had the aim to contribute to reducing the problems with student well-being. The goal was to do this by gaining insight in the role of coproduction in student counselling in Dutch secondary education. The main research question this research tried to answer is:

To what extent do autonomy, competence and relatedness influence coproduction and how does coproduction influence student well-being in student counselling among Dutch secondary school students?

To be able to answer this question, the drivers of coproduction have been examined and the influence of coproduction on student well-being has been examined. This is done to gain more insights in the causal chain of effects in student counselling. In this section, the drivers of coproduction are discussed first, later the influence of coproduction on student well-being is discussed. The drivers of coproduction in this study are based on the needs from the Self-Determination Theory (SDT). Autonomy, competence and relatedness have been operationalised respectively as involvement, literacy and attachment anxiety and attachment avoidance in this study.

The first hypothesis in this study was the following:

    Hypothesis 1: *Involvement* is positively related to *coproduction*.

    This hypothesis allows to gain insight in what is driving coproduction in the Dutch secondary school setting. A positive relationship was expected based on the SDT and previous research (Mende & van Doorn, 2015). However, this research does not show a significant relationship between involvement and coproduction. This means that Dutch secondary school students personally endorsing the importance of student counselling do not per se show more coproduction in student counselling as a result of this endorsement. Therefore, H1 is not accepted.

The second hypothesis formulated in this research was the following:

Hypothesis 2: *Literacy* is positively related to *coproduction*.

In line with what was expected, the results of this research show that literacy is positively related to coproduction. Therefore, it can be concluded that students need confidence when it comes to educational matters to coproduce in student counselling. Literacy is used in this study to measure the SDT's concept of competence, which is about having confidence in one's own abilities. This study shows that for Dutch secondary school students it is true that there is a need for confidence when it comes to educational matters in order to coproduce in student counselling processes. Thus, the expectations based on Mende and van Doorn (2015) and the SDT are met. Altogether, it can be concluded that H2 is accepted.

Attachment styles have been used to measure SDT's relatedness in this research. Two hypotheses have been formulated about the relationship between attachment styles and coproduction. The first is:

Hypothesis 3a: *Attachment anxiety* is negatively related to *coproduction*.

From theory, attachment anxiety was expected to have a negative influence on coproduction. However, the results from chapter 4 in this study show that this relationship is not present for the sample of Dutch secondary school students that participated in this research. Interestingly, in previous similar research, on which the scales in this study have been based, also this relationship was not found while it was expected (Mende & Bolton, 2011; Mende & van Doorn, 2015). The interplay between attachment anxiety and attachment avoidance, also used in this research, could be an interesting starting point for future research. This research found that cooperation and coproduction in student counselling is not hindered by attachment anxiety and therefore H3a was not accepted.

The second hypothesis about attachment styles in this research was formulated as follows:

Hypothesis 3b: *Attachment avoidance* is negatively related to *coproduction.*

In contrast to the results found for hypothesis H3a, the results show a significant relation between attachment avoidance and coproduction. Coproduction is hindered when students avoid attachment with their counsellor. Attachment avoidance is a barrier for coproduction to be present. This was also expected based on the need for relatedness from the SDT (Ryan, 2009). In previous research this relation has also been found in a different setting (Mende & van Doorn, 2015). This study is another example where attachment avoidance undermines coproduction. Therefore, H3b was accepted.

Next, the relationship between coproduction and student well-being was examined. It was hypothesised that coproduction influences student well-being. This was formulated as follows:

Hypothesis 4: *Coproduction* in student counselling is positively related to *student well-being*.

Coproduction in counselling services has been found to play a role in improving well-being in previous research (Mende & van Doorn, 2015). For this research, the role of coproduction in student counselling services specifically has been examined. Also in this setting a positive relationship was found. The more a student coproduces in the student counselling process, the more well-being a student experiences. For well-being a specific student well-being measure has been used. This means that coproduction positively influences student well-being, which consists of school connectedness, joy of learning, educational purpose and academic efficacy. Also, this research found that coproduction in student counselling positively influences each dimension of student well-being. Altogether, it can be concluded that based on the results of this study, H4 was accepted.

All hypotheses and their conclusions are depicted in Table 5 and a research model with the β's is depicted in Figure 2.

H1:	Involvement is positively related to coproduction	Not Accepted
H2:	Literacy is positively related to coproduction	Accepted
H3a:	Attachment anxiety is negatively related to coproduction	Not Accepted
H3b:	Attachment avoidance is negatively related to coproduction	Accepted
H4:	Coproduction in student counselling is positively related to student well-being	Accepted

Table 5. Conclusions of the formulated hypotheses
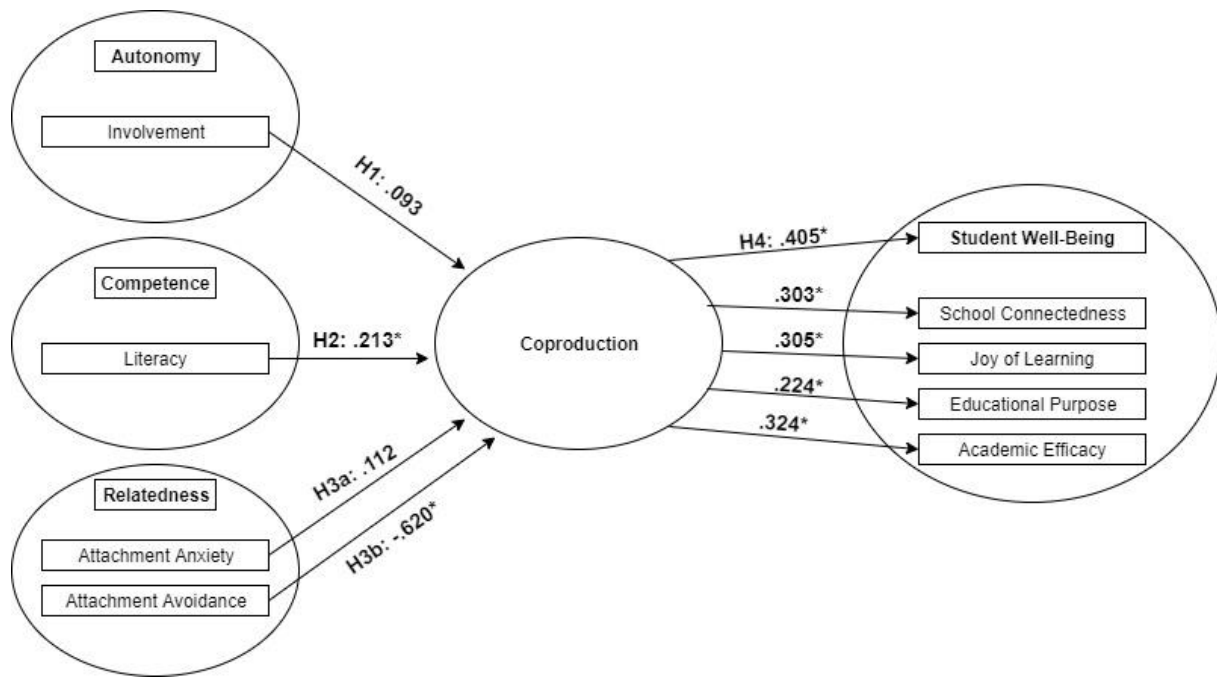
Figure 2. Research model with hypotheses and results. NOTE:= significant at p<.05*

5.2 Discussion

When taking a closer look at the results and the conclusions of this research, one can note that there is a key role for coproduction in student counselling. This means that when students coproduce a student counselling service, their well-being will increase. These results are seen for all dimensions of student well-being and for the entire construct. That highlights the importance of coproduction, since it can influence multiple dimensions of what makes the well-being of a student. This conclusion adds to the work of Anderson and Ostrom, (2015) since they established the role of cocreation and coproduction as an interest starting point for future studies. Their paper, which focusses on TSR and its influence on consumer well-being, noted that TSR might be of extra importance in creating uplifting changes in consumer well-being when the service is coproduced. That hypothesis is tested in this study, and indeed there is a role for coproduction in enhancing well-being through counselling. For this research this was tested in the education sector, where consumers are students experiencing the counselling service.

Due to the importance of coproduction in student counselling as a result in this study, the drivers of coproduction gain extra importance as well. The drivers of coproduction in this study have been hypothesised similarly to how Mende and van Doorn (2015) have done this in their study. This means that SDT forms the basis for how coproduction is believed to be influenced. The idea was that there is a need for autonomy, competence and relatedness for

coproduction in counselling services to be present. However, not all the hypotheses formulated for the drivers of coproduction have provided significant results in this study. This could be due to two quite straightforward reasons.

First, drivers of coproduction in this study have been measured by Mende and van Doorn (2015) for the first time. So, it could be that the measurement of these drivers has been inaccurate. Literacy and attachment anxiety in this study do not significantly influence coproduction. This contrasts what was expected beforehand. The relationship between literacy and coproduction was found in Mende and van Doorn (2015). Attachment anxiety also in Mende and van Doorn's study (2015) did not have a significant relationship with coproduction.

Second, it could therefore also be that this relationship is non existing. Further research could provide more insight in the relationship between attachment anxiety and coproduction. It is particularly interesting that attachment avoidance does have a significant influence on coproduction. Thus, the interplay between attachment avoidance and attachment anxiety is a possible topic for future research, since only one of them provides significant outcomes, whereas this was expected for both.

5.3 Contribution

This section contains the contributions this study provides. These contributions are to the existing literature, discussed in the academic contribution, and to practice, discussed in the managerial contribution.

5.3.1 Academic Contribution

This study adds to existing literature on how services can create well-being. Literature in this field is known as Transformative Service Research (Rosenbaum et al., 2011). Within TSR counselling is a well-known mean to create uplifting changes in the well-being of consumers experiencing the counselling (Johns & Davey, 2019). More recently in the TSR literature, attention has been pointed towards the role of coproduction in the counselling process (Anderson & Ostrom, 2015a). This study takes this point of interest, being the role of coproduction, and applies it to student counselling. The role of coproduction has been examined before when it comes to students and their school performance, but this study now examines coproduction in student counselling and the influence on student well-being (Nkechi Theresa et al., 2016).

This study also examined the drivers of coproduction in student counselling. The execution has been similar to how Mende and van Doorn (2015) have done this for financial counselling. This means that this study also has used the SDT to determine the drivers of coproduction. The drivers in this study have been based on the needs for autonomy, competence and relatedness. By doing this, this study also adds to SDT literature and particularly its relation to coproduction in counselling services.

Another academic contribution this research provides is on the literature of the SSWQ. This well-being measure has been widely used, but has not been applied to Dutch students often before (Renshaw, 2018). This increases the applicability of the SSWQ, since the results of this study also gave high validity and reliability values of the measurement instrument. In addition to this, the SSWQ has been used in combination with coproduction in this study. This has not been done before. The results of this study show that coproduction influences student well-being based on the SSWQ, which enhances the academic knowledge regarding the SSWQ.

5.3.2 Managerial Contribution

Managers in the educational sector can learn from this study. Many schools in the Netherlands struggle with the problem of students experiencing well-being problems.

When students coproduce their student counselling this can result in uplifting changes in their well-being. Organising student counselling in a manner that coproduction can exist is of great importance for students, and therefore for their counsellors as well. Managers and counsellors that aim to create uplifting changes in the well-being of students should take the role of coproduction into account. In the Dutch school system schools have a certain freedom of choice in organising students guidance. Due to this there is no clear structure in how schools organise their student guidance programs. The Dutch government could use the outcomes of this study, since it shows that there is a key role for coproduction in student counselling in the Netherlands. The researcher of this study believes it is beneficial for the Dutch education system to structure the student guidance programs on Dutch schools and highlight the importance of coproduction in this structure. This means that students need more individually focussed counselling programs, instead of a one-size-fits-all counselling program. Counselling should then be based more on a contingency approach, where the most appropriate style of management is dependent on the context of the situation.

The second take-away for managers, counsellors and others in the educational sector this study provides is some insight in how to organize this coproduction in student counselling

programs. The drivers of coproduction discussed in this research form a way of how coproduction in student counselling services can be created. First, this research shows literacy as driver for coproduction. Literacy refers to the degree to which students feel confidence and competence in educational matters. Counsellors and managers should try to make students feel confident about educational matters and try to make student feel like they are competent in their school work. Second, this study shows how attachment avoidance negatively influences coproduction. When students do not feel comfortable with their counsellor, they are not likely to coproduce the counselling service. Counsellors should aim to make students comfortable with their presence and try to create a connection with the students. In addition to this, it could be beneficial that students have the option to choose a counsellor, or someone who guides them, from a group of counsellors or teachers. Choosing a counsellor can create a connection between counsellor and a student (Redding, 2001). This way schools can decrease the occurrence of attachment avoidance.

Lastly, this study also contributes to practice by how it measured student well-being. The SSWQ as designed by Renshaw (2015) to gain insight in student well-being has been used in this study and has provided valid and reliable results. Schools could benefit from this by using this measure to gain insight in the well-being of their own students. For example, the individual results of students of the SSWQ could be analysed by the counsellor to adjust the counselling service to a specific student.

5.4 Research Limitations and Further Research

In order to provide suggestions for further research, the limitations of this researched are analysed.

First, the data in this study was collected from one school and 110 respondents were included in the final sample. This was sufficient for executing multiple linear regression analysis (Hair et.al, 2019). However, for the data to be representative for the entire Dutch secondary school population, more respondents should be included in the sample. Also, students from different schools should be in the sample for the sample to be representative for the entire research population. For a representative sample, the characteristics should also be similar to those of the entire research population, e.g. the same division of gender, age and educational level as the entire research population. That also was not checked in this research. A future study could try to repeat this study, whilst also taking into account sample representativeness. Approximately 0.05% of the entire population could make a representative

sample (Verschuren & Doorewaard, 2015). There are almost 1,000,000 secondary school students in the Netherlands. Therefore, this future study should obtain a minimum sample size of 5,000 students and also take into account sample characteristics.

Second, this study was executed in two steps. The relationship between the drivers of coproduction in student counselling and coproduction in student counselling has been examined and the relationship between coproduction in student counselling and student well-being has been examined. However, SDT expects a positive relationship between autonomy, competence and relatedness and well-being (Ryan & Deci, 2004). Therefore, the direct influence of autonomy, competence and relatedness on student well-being can be interesting for future research to examine. Those relationships can add to the knowledge of how student well-being is influenced and can thereby also take part in contributing to reducing the decrease in student well-being. Which was the goal of this study.

Lastly, future research regarding the drivers of coproduction in counselling can be executed. This research used an operationalisation of autonomy, competence and relatedness that has been used only once before (Mende & van Doorn, 2015). In both that study and this study, not all hypothesised drivers of coproduction were found to significantly influence coproduction. This could be due to the fact that there are some flaws in the operationalisation of these drivers. Since knowledge on the concept of coproduction is seen as an agenda point in the field of TSR, the drivers of coproduction can also form an interesting research topic in the future (Anderson et al., 2013).

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Appendices

Appendix A - Measurement Independent Variable

Construct	Items	Code	Source	Original items: Mende and van Doorn (2015)
Involvement	Voor mij is leerlingbegeleiding belangrijk	I1	(Cannon & Perreault, 1999; Mende & van Doorn, 2015)	To me, credit counselling services are 1= unimportant, 7=important
''	Voor mij is leerlingbegeleiding onmisbaar	I2	''	To me, credit counselling services are 1= not essential, 7= essential
Literacy	Ik vind omgaan met schoolstof gemakkelijk	L1	(Mende & van Doorn, 2015; Mitchell & Dacin, 1996)	I am uncomfortable dealing with financial matters (R)
''	Ik weet veel van de dingen die tijdens lessen behandeld worden	L2	''	I know a great deal about financial matters
''	Ik heb veel zelfvertrouwen als ik over schoolstof praat	L3	''	I am very confident discussing financial matters
Attachment anxiety	Ik maak mij zorgen over dat ik door mijn leerlingbegeleider verwaarloosd wordt	AAnx1	(Mende & Bolton, 2011; Mende & van Doorn, 2015)	I worry about being neglected by my counsellor as a client

' '	Mijn leerlingbegeleider verandert soms zonder reden hoe hij of zij mij behandeld	AAnx2	' '	My counsellor changes how he or she treats me for no apparent reason
' '	Ik maak mij zorgen over dat mijn leerlingbegeleider mij niet echt waardeert	AAnx3	' '	I worry that my counsellor doesn't really appreciate me as a client
' '	Ik maak mij zorgen over dat ik meer om mijn leerlingbegeleider geef dan hij of zij om mij geeft	AAnx4	' '	I worry that my counsellor care about me as much as I care about him or her
Attachment avoidance	Ik voel mij op mijn gemak als ik afhankelijk ben van mijn leerlingbegeleider (R)	AAvo1	(Mende & Bolton, 2011; Mende & van Doorn, 2015)	It is a comfortable feeling to depend on my counsellor (R)
' '	Ik voel mij op mijn gemak als ik een goede band heb met mijn leerlingbegeleider (R)	AAvo2	' '	I am comfortable having a close relationship with my counsellor (R)
' '	Het is makkelijk voor mij om een goede band te hebben met mijn leerlingbegeleider (R)	AAvo3	' '	It's easy for me to feel close toward my counsellor (R)
' '	Het helpt voor mij om naar mijn leerlingbegeleider te gaan als ik dat nodig heb (R)	AAvo4	' '	It helps to turn to my counsellor in times of need (R)

Table 1: Measurement Independent Variables Autonomy, Competence and Relatedness

Note: (R)= reversed item

Appendix B - Measurement Coproduction

Construct	Items	Code	Source	Original Items: Mende and van Doorn (2015)
Coproduction	Ik bereid mijzelf voor als ik een afspraak heb met mijn leerlingbegeleider	C1	(Auh et al., 2007; Mende & van Doorn, 2015)	I prepare myself (and documents, etc.) before meeting with my counsellor
''	Ik probeer samen te werken met mijn leerlingbegeleider	C2	''	I try to work cooperatively with my counsellor
''	Ik doe dingen die het werk van mijn leerlingbegeleider makkelijker maken	C3	''	I do think to make my counsellor's job easier
''	Ik vertel mijn schoolresultaten eerlijk aan mijn leerlingbegeleider om samen tot de beste oplossing te kunnen komen	C4	''	I openly discuss my financial situation with my counsellor to help him or her find the best solution for me
''	Ik zorg ervoor dat mijn leerlingbegeleider mij zo goed mogelijk kan helpen	C5	''	I perform tasks to help my counsellor serve me better
''	Ik werk helemaal mee met mijn leerlingbegeleider	C6	''	I fully cooperate with my counsellor

Table 1: Measurement Mediator Variable Coproduction

Appendix C - Measurement Dependent Variable

Construct	Items	Code	Source	Original Items: SSWQ
School Connectedness	Ik heb het gevoel dat ik bij mijn school hoor	SC1	(Renshaw et al., 2015)	I feel like I belong at this school
''	Ik kan echt mezelf zijn op mijn school	SC2	''	I can really be myself at this school
''	Ik heb het gevoel dat mensen op mijn school om mij geven	SC3	''	I feel like people at this school care about me
''	Ik word met respect behandeld op mijn school	SC4	''	I am treated with respect at this school
Joy of Learning	Ik word enthousiast van nieuwe dingen leren in de les	JoL1	(Renshaw et al., 2015)	I get excited about learning new things in class
''	Ik ben heel geïnteresseerd in de dingen die ik doe op mijn school	JoL2	''	I am really interested in the things I am doing at school
''	Ik heb plezier bij het bezig zijn met opdrachten en projecten tijdens de les	JoL3	''	I enjoy working on class projects and assignments
''	Ik voel mij blij als ik aan het werk en aan het leren ben op mijn school	JoL4	''	I feel happy when I am working and learning at school

Educational Purpose	Ik heb het gevoel dat de dingen die ik op school doe belangrijk zijn	EP1	(Renshaw et al., 2015)r	I feel like the things I do at school are important
''	Ik denk dat school ertoe doet en serieus genomen moet worden	EP2	''	I think school matters and should be taken seriously
''	Ik heb het gevoel dat het belangrijk is om je best te doen in de les	EP3	''	I feel it is important to do well in my classes
''	Ik geloof dat de dingen die ik op school leer mij zullen helpen in mijn leven	EP4	''	I believe the things I learn at school will help me in my life
Academic Efficacy	Ik ben een succesvolle leerling	AE1	(Renshaw et al., 2015)	I am a successful student
''	Ik doe het goed op school	AE2	''	I do good work at school
''	Ik doe het goed bij de opdrachten tijdens de les	AE3	''	I do well on my class assignments
''	Ik haal goede cijfers op school	AE4	''	I get good grades in my classes

Table 1: Measurement Independent Variable Student Well-Being

Appendix D – Final Survey

Welcome:

Welkom!

Bedankt dat je de vragenlijst van mijn onderzoek wil invullen. Ik ben Dirk Spanjer en ik studeer in Nijmegen aan de Radboud Universiteit. Ik doe onderzoek naar hoe leerlingen op de middelbare school zo goed mogelijk begeleid kunnen worden. Hiervoor heb ik informatie nodig van jullie, de leerlingen.

Hierna zal ik jullie vragen om akkoord te gaan met hoe jullie gegevens worden opgeslagen en beheerd. Dat zal allemaal volgens de regels gebeuren. Je kunt dus gewoon eerlijk antwoord geven. Er zitten voor jou geen consequenties aan hoe je de vragen vandaag beantwoord. Voor mijn onderzoek is het wel heel belangrijk dat je goed leest en eerlijk antwoord.

De vragenlijst bestaat uit 7 delen. Het ene deel duurt langer dan het andere deel. In totaal ben je waarschijnlijk niet langer dan een kwartiertje bezig.

Alvast ontzettend bedankt!
Groet,
Dirk Spanjer
dirk.spanjer@ru.nl
0637467710

Introduction:

Hieronder staat de informatie over hoe je gegevens worden opgeslagen en beheerd. Onderaan kan je aangeven of je akkoord gaat of niet.

Vertrouwelijkheid van de onderzoeksgegevens:

De onderzoeksgegevens zullen anoniem worden vastgelegd en veilig opgeslagen volgens de richtlijnen voor het beheer van onderzoeksgegevens van de Radboud Universiteit en conform de Algemene Verordening Gegevensbescherming (AVG). Alle persoonlijke gegevens worden zo snel mogelijk verwijderd. Dat betekent dat de data niet meer aan jou gelinkt kan worden.

De onderzoekers die betrokken zijn bij dit onderzoek zullen de onderzoeksgegevens gebruiken voor master scripties, academische publicaties en presentaties. De anonieme gegevens kunnen beschikbaar komen in het kader van Open Science zodat andere onderzoekers ernaar kunnen verwijzen en de data kunnen hergebruiken. Met het oog op de onderzoeksintegriteit zullen de onderzoeksgegevens voor een periode van ten minste tien jaar toegankelijk zijn voor de academische gemeenschap.

Vrijwillige deelname:

Je deelname aan dit onderzoek is vrijwillig. Dit betekent dat je jouw deelname en toestemming op elk moment tijdens de periode van het verzamelen van gegevens kunt stopzetten en intrekken, zonder opgave van reden. Tot zes weken na deelname kun je je onderzoeksgegevens /persoonsgegevens/ contactgegevens laten verwijderen door een verzoek te sturen naar dirk.spanjer@ru.nl.

Meer informatie:

Heb je vragen naar aanleiding van dit onderzoek, nu of in de toekomst, of wil je de resultaten van het onderzoek ontvangen, neem dan contact op met dirk.spanjer@ru.nl of stuur een berichtje of bel naar 0637467710.

Door hieronder "Ja, ik ga akkoord met deelname aan het onderzoek zoals hierboven beschreven" te selecteren geef je aan dat:

- Je deze informatie hebt gelezen en begrepen

- Je vrijwillig instemt met deelname

- Je beseft dat je op elk moment kunt stoppen met dit onderzoek

Als je niet wilt deelnemen aan dit onderzoek, kun je de deelname weigeren door hieronder "Nee, ik ga niet akkoord met deelname aan het onderzoek" te selecteren.

- Intro2: Multiple Choice Question

    1: Ja, ik ga akkoord met deelname aan het onderzoek zoals hierboven beschreven

2: Nee, ik ga niet akkoord met deelname aan het onderzoek → Skip Logic → End of Survey

Intention:

Je gaat nu vragen beantwoorden in Deel 1 van deze vragenlijst. In totaal zijn er 7 delen.

Probeer de vragen zo rustig en goed mogelijk te lezen.

Geef aan in hoeverre je het eens bent met de volgende stelling:

- I1: Voor mij is leerlingbegeleiding belangrijk (1 = strongly disagree, 7 = strongly agree
- I2: Voor mij is leerlingbegeleiding onmisbaar (1 = strongly disagree, 7 = strongly agree

Literacy:

Je gaat nu vragen beantwoorden in Deel 2 van deze vragenlijst.

Probeer de vragen zo rustig en goed mogelijk te lezen.

Geef aan in hoeverre je het eens bent met de volgende stelling:

- L1: Ik vind omgaan met schoolstof gemakkelijk (1 = strongly disagree, 7 = strongly agree
- L2: Ik weet veel van de dingen die tijdens lessen behandeld worden (1 = strongly disagree, 7 = strongly agree
- L3: Ik heb veel zelfvertrouwen als ik over schoolstof praat (1 = strongly disagree, 7 = strongly agree

Attachment Anxiety:

Je gaat nu vragen beantwoorden in Deel 3 van deze vragenlijst.

Probeer de vragen zo rustig en goed mogelijk te lezen.

Geef aan in hoeverre je het eens bent met de volgende stelling:

- AAnx1: Ik maak mij zorgen over dat ik door mijn leerlingbegeleider verwaarloosd wordt (1 = strongly disagree, 7 = strongly agree
- AAnx2: Mijn leerlingbegeleider verandert soms zonder reden hoe hij of zij mij behandeld (1 = strongly disagree, 7 = strongly agree
- AAnx3: Ik maak mij zorgen over dat mijn leerlingbegeleider mij niet echt waardeert (1 = strongly disagree, 7 = strongly agree
- AAnx4: Ik maak mij zorgen over dat ik meer om mijn leerlingbegeleider geef dan hij of zij om mij geeft (1 = strongly disagree, 7 = strongly agree

Attachment Avoidance:

Je gaat nu vragen beantwoorden in Deel 4 van deze vragenlijst.

Probeer de vragen zo rustig en goed mogelijk te lezen.

Geef aan in hoeverre je het eens bent met de volgende stelling:

- AAvo1: Ik voel mij op mijn gemak als ik afhankelijk ben van mijn leerlingbegeleider (1 = strongly disagree, 7 = strongly agree
- AAvo2: Ik voel mij op mijn gemak als ik een goede band heb met mijn leerlingbegeleider (1 = strongly disagree, 7 = strongly agree
- AAvo3: Het is makkelijk voor mij om een goede band te hebben met mijn leerlingbegeleider (1 = strongly disagree, 7 = strongly agree
- AAvo4: Het helpt voor mij om naar mijn leerlingbegeleider te gaan als ik dat nodig heb (1 = strongly disagree, 7 = strongly agree

Coproduction:

Je gaat nu vragen beantwoorden in Deel 5 van deze vragenlijst.

Probeer de vragen zo rustig en goed mogelijk te lezen.

Geef aan in hoeverre je het eens bent met de volgende stelling:

- C1: Ik bereid mijzelf voor als ik een afspraak heb met mijn leerlingbegeleider (1 = strongly disagree, 7 = strongly agree
- C2: Ik probeer samen te werken met mijn leerlingbegeleider (1 = strongly disagree, 7 = strongly agree

- C3: Ik doe dingen die het werk van mijn leerlingbegeleider makkelijker maken (1 = strongly disagree, 7 = strongly agree
- C4: Ik vertel mijn schoolresultaten eerlijk aan mijn leerlingbegeleider om samen tot de beste oplossing te kunnen komen (1 = strongly disagree, 7 = strongly agree
- C5: Ik zorg ervoor dat mijn leerlingbegeleider mij zo goed mogelijk kan helpen (1 = strongly disagree, 7 = strongly agree
- C6: Ik werk helemaal mee met mijn leerlingbegeleider (1 = strongly disagree, 7 = strongly agree

School Connectedness:

Je gaat nu vragen beantwoorden in Deel 6 van deze vragenlijst.

Dit is het langste deel van de vragenlijst. Probeer zo goed mogelijk te blijven lezen en rustig te blijven.

Geef aan in hoeverre je het eens bent met de volgende stelling:

- SC1: Ik heb het gevoel dat ik bij mijn school hoor (1 = strongly disagree, 7 = strongly agree
- SC2: Ik kan echt mezelf zijn op mijn school (1 = strongly disagree, 7 = strongly agree
- SC3: Ik heb het gevoel dat mensen op mijn school om mij geven (1 = strongly disagree, 7 = strongly agree
- SC4: Ik word met respect behandeld op mijn school (1 = strongly disagree, 7 = strongly agree

Joy of Learning:

- JoL1: Ik word enthousiast van nieuwe dingen leren in de les (1 = strongly disagree, 7 = strongly agree
- JoL2: Ik ben heel geïnteresseerd in de dingen die ik doe op mijn school (1 = strongly disagree, 7 = strongly agree
- JoL3: Ik heb plezier bij het bezig zijn met opdrachten en projecten tijdens de les (1 = strongly disagree, 7 = strongly agree
- JoL4: Ik voel mij blij als ik aan het werk en aan het leren ben op mijn school (1 = strongly disagree, 7 = strongly agree

Educational Purpose:

- EP1: Ik heb het gevoel dat de dingen die ik op school doe belangrijk zijn (1 = strongly disagree, 7 = strongly agree
- EP2: Ik denk dat school ertoe doet en serieus genomen moet worden (1 = strongly disagree, 7 = strongly agree
- EP3: Ik heb het gevoel dat het belangrijk is om je best te doen in de les (1 = strongly disagree, 7 = strongly agree
- EP4: Ik geloof dat de dingen die ik op school leer mij zullen helpen in mijn leven (1 = strongly disagree, 7 = strongly agree

Academic Efficacy:

- AE1: Ik ben een succesvolle leerling (1 = strongly disagree, 7 = strongly agree
- AE2: Ik doe het goed op school (1 = strongly disagree, 7 = strongly agree
- AE3: Ik doe het goed bij de opdrachten tijdens de les (1 = strongly disagree, 7 = strongly agree
- AE4: Ik haal goede cijfers op school (1 = strongly disagree, 7 = strongly agree

Demographics:

Je gaat nu vragen beantwoorden in Deel 7 van deze vragenlijst.

Dit is het laatste deel van de vragenlijst. Probeer zo goed mogelijk te blijven lezen en rustig te blijven. Hierna ben je klaar.

- D1: Geef aan welk niveau je volgt op de middelbare school:

    1: VMBO (Dit mag je aanklikken als je één van de leerwegen van VMBO volgt)

    2: HAVO

    3: VWO (Dit mag je ook aanklikken als je bijvoorbeeld VWO TTO of Gymnasium volgt)

- D2: Hoe oud ben je?

    Open Question

- D3: Met welk geslacht identificeer je jezelf?

    1: Man

    2: Vrouw

3: Geen van beide

4: Zeg ik liever niet

Appendix E – Sample Descriptive Statistics

Statistics

		D1	D2	D3	A_Intro_2
N	Valid	117	121	117	121
	Missing	4	0	4	0
Mean		2,10		1,72	1,03

Table 1: Missing Data before adjustments

Statistics

		D1	D2	D3	A_Intro_2
N	Valid	110	110	110	110
	Missing	0	0	0	0
Mean		2,14		1,67	1,00

Table 2: Missing Data after adjustments

A_Intro_2

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Ja, ik ga akkoord met deelname aan het onderzoek zoals hierboven beschreven	117	96,7	96,7	96,7
	Nee, ik ga niet akkoord met deelname aan het onderzoek	4	3,3	3,3	100,0
	Total	121	100,0	100,0	

Table 3: Intro2 before adjustments

A_Intro_2

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Ja, ik ga akkoord met deelname aan het onderzoek zoals hierboven beschreven	110	100,0	100,0	100,0

Table 4: Intro2 after adjustments

D1

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	VMBO (Dit mag je aanklikken als je één van de leerwegen van VMBO volgt)	26	21,5	22,2	22,2
	HAVO	53	43,8	45,3	67,5
	VWO (Dit mag je ook aanklikken als je bijvoorbeeld VWO TTO of Gymnasium volgt)	38	31,4	32,5	100,0
	Total	117	96,7	100,0	
Missing	System	4	3,3		
Total		121	100,0		

Table 5: Education Level before adjustments

D1

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	VMBO (Dit mag je aanklikken als je één van de leerwegen van VMBO volgt)	22	20,0	20,0	20,0
	HAVO	51	46,4	46,4	66,4
	VWO (Dit mag je ook aanklikken als je bijvoorbeeld VWO TTO of Gymnasium volgt)	37	33,6	33,6	100,0
	Total	110	100,0	100,0	

Table 6: Education Level after adjustments

D2

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid		4	3,3	3,3	3,3
	1	1	,8	,8	4,1
	100	3	2,5	2,5	6,6
	13	18	14,9	14,9	21,5
	14	51	42,1	42,1	63,6
	14 jaar	2	1,7	1,7	65,3
	15	34	28,1	28,1	93,4
	15 jaar	1	,8	,8	94,2
	16	4	3,3	3,3	97,5
	23	1	,8	,8	98,3
	87	1	,8	,8	99,2
	90	1	,8	,8	100,0
	Total	121	100,0	100,0	

Table 7: Age before adjustments

D2

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	13	18	16,4	16,4	16,4
	14	51	46,4	46,4	62,7
	14 jaar	2	1,8	1,8	64,5
	15	34	30,9	30,9	95,5
	15 jaar	1	,9	,9	96,4
	16	4	3,6	3,6	100,0
	Total	110	100,0	100,0	

Table 8: Age after adjustments

D3

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Man	50	41,3	42,7	42,7
	Vrouw	56	46,3	47,9	90,6
	Geen van beide	5	4,1	4,3	94,9
	Dat zeg ik liever niet	6	5,0	5,1	100,0
	Total	117	96,7	100,0	
Missing	System	4	3,3		
Total		121	100,0		

Table 9: Gender before adjustments

D3

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Man	48	43,6	43,6	43,6
	Vrouw	55	50,0	50,0	93,6
	Geen van beide	2	1,8	1,8	95,5
	Dat zeg ik liever niet	5	4,5	4,5	100,0
	Total	110	100,0	100,0	

Table 10: Gender after adjustments

Appendix F – Discriminant Validity Statistics, Rotated Factor Matrix

Rotated Factor Matrix[a]

	1	2	3	4	5	6	7	8	9
I1_1						,777			
I2_1						,701			
L1_1									
L2_1								,678	
L3_1								,452	
AAnx1_1			,682						
AAnx2_1			,828						
AAnx3_1			,824						
AAnx4_1			,878						
AAvo1_1									
AAvo2_1	-,664								
AAvo3_1	-,652								
AAvo4_1	-,619								
C1_1	,490								
C2_1	,633								
C3_1	,563								
C4_1	,597								
C5_1	,706								
C6_1	,556								
SC1_1					,750				
SC2_1					,822				
SC3_1					,503				
SC4_1					,680				
JoL1_1		,704							
JoL2_1		,821							
JoL3_1		,759							
JoL4_1		,806							
EP1_1		,545					,437		
EP2_1							,728		
EP3_1							,461		
EP4_1		,465					,570		
AE1_1				,800					
AE2_1				,888					
AE3_1				,487					
AE4_1				,844					

Extraction Method: Principal Axis Factoring.
Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 12 iterations.

Table 1: Rotated Factor Matrix of the constructs

Appendix G – Convergent Validity Statistics , Separate Factor Analyses

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		,500
Bartlett's Test of Sphericity	Approx. Chi-Square	54,746
	df	1
	Sig.	,000

Table 1: KMO and Bartlett's Test Involvement

Total Variance Explained

Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	1,629	81,474	81,474	1,257	62,856	62,856
2	,371	18,526	100,000			

Extraction Method: Principal Axis Factoring.

Table 2: Total Variance Explained Involvement

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		,635
Bartlett's Test of Sphericity	Approx. Chi-Square	39,185
	df	3
	Sig.	,000

Table 3: KMO and Bartlett's Test Literacy

Total Variance Explained

Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	1,721	57,358	57,358	1,111	37,024	37,024
2	,707	23,579	80,937			
3	,572	19,063	100,000			

Extraction Method: Principal Axis Factoring.

Table 4: Total Variance Explained Literacy

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		,832
Bartlett's Test of Sphericity	Approx. Chi-Square	293,665
	df	6
	Sig.	,000

Table 5: KMO and Bartlett's Test Attachment Anxiety

Total Variance Explained

Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3,112	77,812	77,812	2,839	70,971	70,971
2	,447	11,181	88,993			
3	,256	6,403	95,396			
4	,184	4,604	100,000			

Extraction Method: Principal Axis Factoring.

Table 6: Total Variance Explained Attachment Anxiety

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		,744
Bartlett's Test of Sphericity	Approx. Chi-Square	102,584
	df	6
	Sig.	,000

Table 7: KMO and Bartlett's Test Attachment Avoidance

Total Variance Explained

Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2,283	57,067	57,067	1,777	44,419	44,419
2	,773	19,324	76,391			
3	,536	13,397	89,788			
4	,408	10,212	100,000			

Extraction Method: Principal Axis Factoring.

Table 8: Total Variance Explained Attachment Avoidance

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		,793
Bartlett's Test of Sphericity	Approx. Chi-Square	185,969
	df	15
	Sig.	,000

Table 9: KMO and Bartlett's Test Coproduction

Total Variance Explained

Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2,967	49,457	49,457	2,397	39,948	39,948
2	,982	16,361	65,818			
3	,717	11,948	77,766			
4	,506	8,437	86,203			
5	,481	8,018	94,221			
6	,347	5,779	100,000			

Extraction Method: Principal Axis Factoring.

Table 10: Total Variance Explained Coproduction

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		,809
Bartlett's Test of Sphericity	Approx. Chi-Square	188,391
	df	6
	Sig.	,000

Table 11: KMO and Bartlett's Test School Connectedness

Total Variance Explained

Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2,768	69,197	69,197	2,381	59,516	59,516
2	,554	13,857	83,055			
3	,374	9,359	92,414			
4	,303	7,586	100,000			

Extraction Method: Principal Axis Factoring.

Table 12: Total Variance Explained School Connectedness

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		,800
Bartlett's Test of Sphericity	Approx. Chi-Square	253,316
	df	6
	Sig.	,000

Table 13: KMO and Bartlett's Test Joy of Learning

Total Variance Explained

Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2,990	74,754	74,754	2,668	66,705	66,705
2	,463	11,578	86,332			
3	,350	8,738	95,070			
4	,197	4,930	100,000			

Extraction Method: Principal Axis Factoring.

Table 14: Total Variance Explained Joy of Learning

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		,684
Bartlett's Test of Sphericity	Approx. Chi-Square	155,054
	df	6
	Sig.	,000

Table 15: KMO and Bartlett's Test Educational Purpose

Total Variance Explained

Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2,464	61,606	61,606	2,013	50,322	50,322
2	,859	21,487	83,093			
3	,385	9,635	92,729			
4	,291	7,271	100,000			

Extraction Method: Principal Axis Factoring.

Table 16: Total Variance Explained Educational Purpose

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		,773
Bartlett's Test of Sphericity	Approx. Chi-Square	263,673
	df	6
	Sig.	,000

Table 17: KMO and Bartlett's Test Academic Efficacy

Total Variance Explained

Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2,920	73,001	73,001	2,623	65,572	65,572
2	,580	14,494	87,495			
3	,357	8,913	96,409			
4	,144	3,591	100,000			

Extraction Method: Principal Axis Factoring.

Table 18: Total Variance Explained Academic Efficacy

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		,655
Bartlett's Test of Sphericity	Approx. Chi-Square	81,641
	df	6
	Sig.	,000

Table 19: KMO and Bartlett's Test Student Well-Being

Total Variance Explained

Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2,073	51,836	51,836	1,475	36,869	36,869
2	,939	23,481	75,318			
3	,547	13,676	88,994			
4	,440	11,006	100,000			

Extraction Method: Principal Axis Factoring.

Table 20: Total Variance Explained Student Well-Being

Appendix H – Reliability Analysis, Cronbach's Alpha

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,757	,773	2

Table 1: Reliability Statistics Involvement

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,627	,627	3

Table 2: Reliability Statistics Literacy

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,903	,904	4

Table 3: Reliability Statistics Attachment Anxiety

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,728	,743	4

Table 4: Reliability Statistics Attachment Avoidance

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,787	,793	6

Table 5: Reliability Statistics Coproduction

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,850	,850	4

Table 6: Reliability Statistics School Connectedness

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,886	,887	4

Table 7: Reliability Statistics Joy of Learning

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,788	,788	4

Table 8: Reliability Statistics Educational Purpose

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,872	,874	4

Table 9: Reliability Statistics Academic Efficacy

Reliability Statistics

Cronbach's Alpha	N of Items
,684	4

Table 10: Reliability Statistics Student Well-Being

Appendix I – Assumptions Multiple Regression, Plots and Figures

Linearity Assumption:

Residuals Statistics[a]

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	61,7555	87,1556	73,5856	5,86289	111
Residual	-26,18984	28,81459	,00000	10,64888	111
Std. Predicted Value	-2,018	2,315	,000	1,000	111
Std. Residual	-2,414	2,656	,000	,982	111

a. Dependent Variable: StudentWellBeing

Table 1: Residual Statistics with DV: Student Well-Being
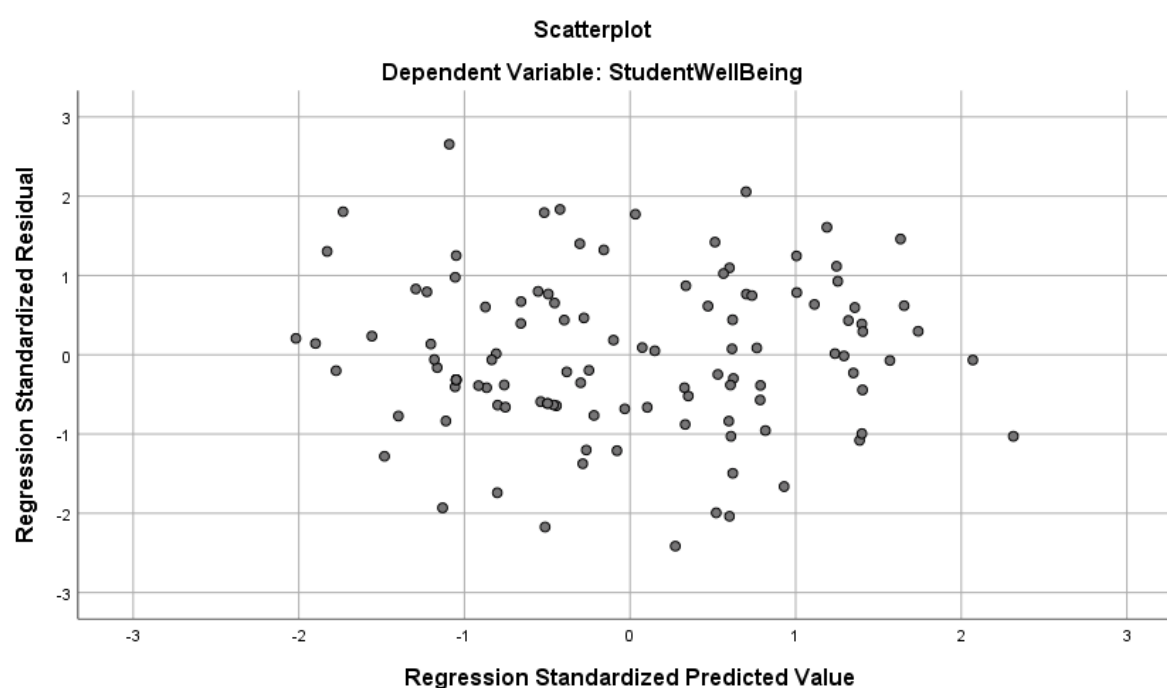
Figure 1: Scatterplot with DV Student Well-Being

Residuals Statistics^a

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	16,5984	35,4153	27,8288	3,22483	111
Residual	-10,06742	9,10761	,00000	3,61537	111
Std. Predicted Value	-3,482	2,353	,000	1,000	111
Std. Residual	-2,734	2,473	,000	,982	111

a. Dependent Variable: Coproduction

Table 2: Residual Statistics with DV: Coproduction
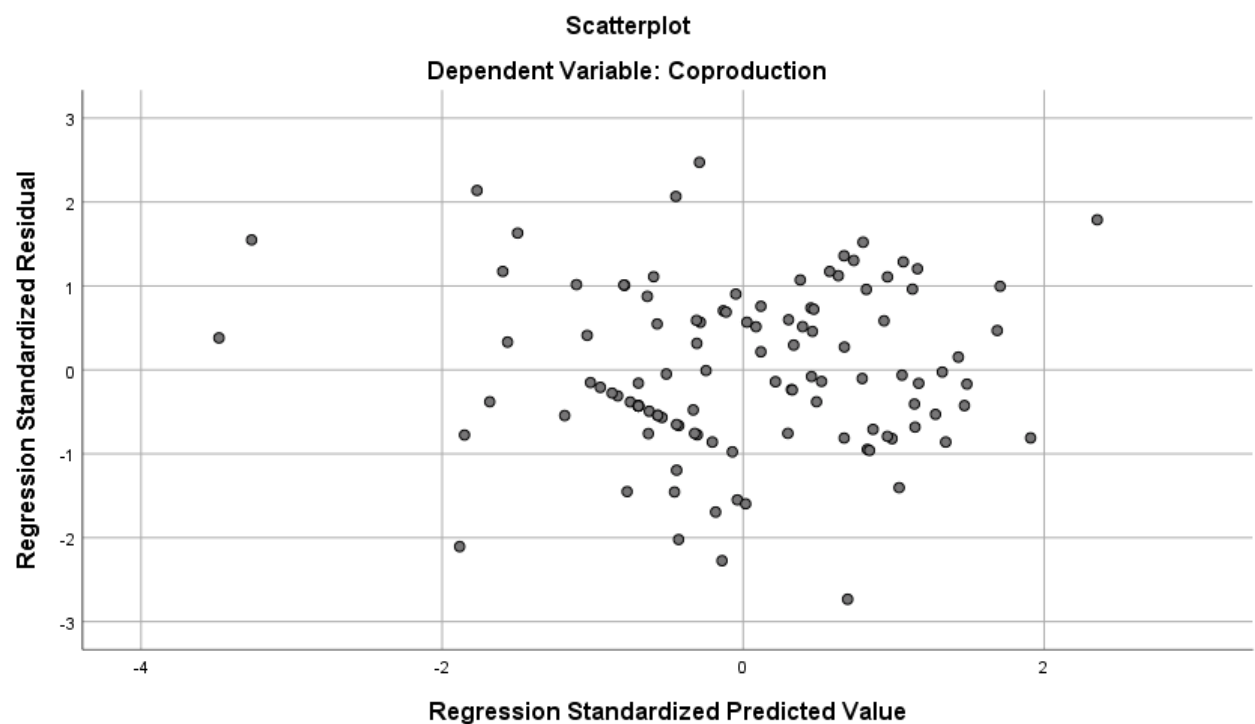
Figure 2: Scatterplot with DV Coproduction

Independence Assumption:

Residuals Statistics[a]

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	16,5984	35,4153	27,8288	3,22483	111
Residual	-10,06742	9,10761	,00000	3,61537	111
Std. Predicted Value	-3,482	2,353	,000	1,000	111
Std. Residual	-2,734	2,473	,000	,982	111

a. Dependent Variable: Coproduction

Table 3: Independence assumption statistics DV coproduction

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations			Collinearity Statistics	
		B	Std. Error	Beta			Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	30,417	3,324		9,150	,000					
	Involvement	,194	,165	,093	1,179	,241	,200	,114	,085	,840	1,191
	Literacy	,402	,144	,213	2,793	,006	,238	,262	,202	,899	1,112
	AttachmentAnxiety	,119	,084	,112	1,409	,162	-,131	,136	,102	,829	1,206
	AttachmentAvoidance	-,820	,108	-,620	-7,596	,000	-,627	-,594	-,551	,789	1,267

a. Dependent Variable: Coproduction

Table 4: Coefficients DV coproduction

Residuals Statistics[a]

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	61,7555	87,1556	73,5856	5,86289	111
Residual	-26,18984	28,81459	,00000	10,64888	111
Std. Predicted Value	-2,018	2,315	,000	1,000	111
Std. Residual	-2,414	2,656	,000	,982	111

a. Dependent Variable: StudentWellBeing

Table 5: Independence assumption statistics DV student well-being

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations			Collinearity Statistics	
		B	Std. Error	Beta			Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	60,721	9,791		6,201	,000					
	Involvement	,124	,486	,024	,255	,799	-,017	,025	,022	,840	1,191
	Literacy	1,742	,424	,369	4,113	,000	,400	,371	,350	,899	1,112
	AttachmentAnxiety	-,151	,249	-,057	-,606	,546	-,206	-,059	-,052	,829	1,206
	AttachmentAvoidance	-,798	,318	-,241	-2,512	,014	-,306	-,237	-,214	,789	1,267

a. Dependent Variable: StudentWellBeing

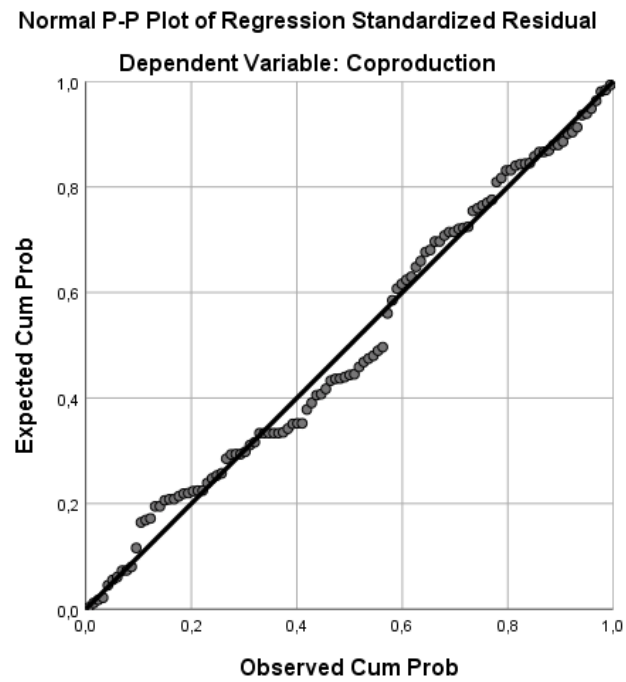*Table 6: Coefficients DV Student Well-Being*
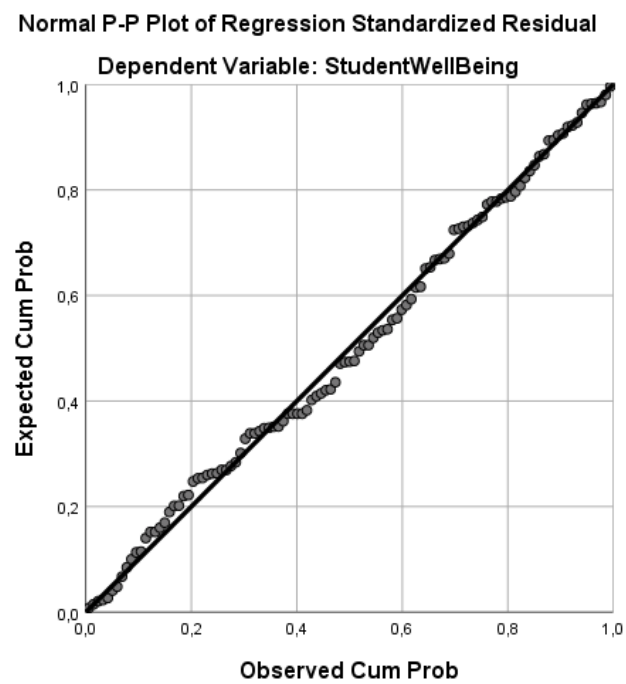
Figure 3: P-P Plot DV Coproduction

Figure 4: P-P Plot DV Student Well-Being

Appendix J – Multiple Regression Analyses

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	,666[a]	,443	,422	3,68295	,443	21,084	4	106	,000

a. Predictors: (Constant), AttachmentAvoidance, Literacy, Involvement, AttachmentAnxiety

b. Dependent Variable: Coproduction

Table 1: Model Summary DV Coproduction

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations			Collinearity Statistics	
		B	Std. Error	Beta			Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	30,417	3,324		9,150	,000					
	Involvement	,194	,165	,093	1,179	,241	,200	,114	,085	,840	1,191
	Literacy	,402	,144	,213	2,793	,006	,238	,262	,202	,899	1,112
	AttachmentAnxiety	,119	,084	,112	1,409	,162	-,131	,136	,102	,829	1,206
	AttachmentAvoidance	-,820	,108	-,620	-7,596	,000	-,627	-,594	-,551	,789	1,267

a. Dependent Variable: Coproduction

Table 2: MRA Coefficients DV Coproduction

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	,405[a]	,164	,156	11,16754	,164	21,338	1	109	,000

a. Predictors: (Constant), Coproduction

b. Dependent Variable: StudentWellBeing

Table 3: Model Summary DV Student Well-Being

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations			Collinearity Statistics	
		B	Std. Error	Beta			Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	45,332	6,208		7,303	,000					
	Coproduction	1,015	,220	,405	4,619	,000	,405	,405	,405	1,000	1,000

a. Dependent Variable: StudentWellBeing

Table 4: MRA Coefficients DV Student Well-being

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	,303[a]	,092	,083	4,14834	,092	11,009	1	109	,001

a. Predictors: (Constant), Coproduction

b. Dependent Variable: SchoolConnectedness

Table 5: Model Summary DV School Connectedness

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations			Collinearity Statistics	
		B	Std. Error	Beta			Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	12,164	2,306		5,275	,000					
	Coproduction	,271	,082	,303	3,318	,001	,303	,303	,303	1,000	1,000

a. Dependent Variable: SchoolConnectedness

Table 6: MRA Coefficients DV School Connectedness

Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	,305^a	,093	,085	4,40374	,093	11,204	1	109	,001

a. Predictors: (Constant), Coproduction

b. Dependent Variable: JoyOfLearning

Table 7: Model Summary DV Joy of Learning

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations			Collinearity Statistics	
		B	Std. Error	Beta			Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	7,504	2,448		3,065	,003					
	Coproduction	,290	,087	,305	3,347	,001	,305	,305	,305	1,000	1,000

a. Dependent Variable: JoyOfLearning

Table 8: MRA Coefficients DV Joy of Learning

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	,224[a]	,050	,041	3,81374	,050	5,757	1	109	,018

a. Predictors: (Constant), Coproduction

b. Dependent Variable: EducationalPurpose

Table 9: Model Summary DV Educational Summary

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations			Collinearity Statistics	
		B	Std. Error	Beta			Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	13,565	2,120		6,399	,000					
	Coproduction	,180	,075	,224	2,399	,018	,224	,224	,224	1,000	1,000

a. Dependent Variable: EducationalPurpose

Table 10: MRA Coefficients DV Educational Purpose

Model Summary[b]

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate | Change Statistics | | | | |
					R Square Change	F Change	df1	df2	Sig. F Change
1	,324[a]	,105	,097	3,89520	,105	12,792	1	109	,001

a. Predictors: (Constant), Coproduction

b. Dependent Variable: AcademicEfficacy

Table 11: Model Summary DV Academic Efficacy

Coefficients[a]

| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. | Correlations | | | Collinearity Statistics | |
		B	Std. Error	Beta			Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	12,100	2,165		5,588	,000					
	Coproduction	,274	,077	,324	3,577	,001	,324	,324	,324	1,000	1,000

a. Dependent Variable: AcademicEfficacy

Table 12: MRA Coefficients DV Academic Efficacy

Appendix K – Additional Analyses

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	,660[a]	,436	,415	3,70686	,436	20,472	4	106	,000

a. Predictors: (Constant), AttachmentAvoidance, Literacy, I1_1, AttachmentAnxiety

Table 1: Model Summary DV Coproduction including I1

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	32,815	3,463		9,475	,000
	I1_1	,033	,335	,008	,099	,921
	Literacy	,361	,144	,192	2,510	,014
	AttachmentAnxiety	,137	,084	,129	1,630	,106
	AttachmentAvoidance	-,857	,107	-,648	-8,017	,000

a. Dependent Variable: Coproduction

Table 2: MRA Coefficients DV Coproduction including I1

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	,673[a]	,453	,432	3,65044	,453	21,936	4	106	,000

a. Predictors: (Constant), I2_1, AttachmentAnxiety, Literacy, AttachmentAvoidance

Table 3: Model Summary DV Coproduction including I2

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	30,042	2,946		10,197	,000
	Literacy	,416	,141	,221	2,943	,004
	AttachmentAnxiety	,102	,085	,096	1,199	,233
	AttachmentAvoidance	-,802	,106	-,607	-7,546	,000
	I2_1	,475	,261	,142	1,820	,072

a. Dependent Variable: Coproduction

Table 4: MRA Coefficients DV Coproduction including I2