MASTERARBEIT | MASTER'S THESIS

Titel | Title

Tomorrow or not tomorrow: How active and passive procrastinators differ in terms of intrinsic motivation and self-regulated learning (SRL)

verfasst von | submitted by

Sophie Eberhard BSc

angestrebter akademischer Grad | in partial fulfilment of the requirements for the degree of

Master of Science (MSc)

Wien | Vienna, 2025

Studienkennzahl lt. Studienblatt | Degree programme code as it appears on the student record sheet:	UA 066 840
Studienrichtung lt. Studienblatt | Degree programme as it appears on the student record sheet:	Masterstudium Psychologie
Betreut von | Supervisor:	emer. Univ.-Prof. Mag. Dr. Dr. Christiane Spiel

Table of Contents

List of Tables and Figures

Tables

Figures

Abstract

Procrastination as a tendency to start tasks later than planned or to fail to complete them promptly is highly prevalent among students. Whereas passive procrastination refers to a dysfunctional delay pattern traditionally associated with negative outcomes, so-called active procrastination has been suggested to represent its functional form involving adaptive coping mechanisms and positive ramifications. This thesis examines the relationship of intrinsic motivation and self-regulated learning (SRL) with active and passive procrastination. A sample of university students in Austria (N = 1527) was studied in an online survey and divided into three subgroups representing active, passive, and non-procrastinators. A strong negative correlation between active and passive procrastination was found in support of the claimed premise that they represent distinct constructs. In line with proposed hypotheses, results suggest that SRL relates positively to active and negatively to passive procrastination. Contrary to predictions, active procrastinators scored highest in both intrinsic motivation and SRL among all groups, whereas passive procrastinators displayed the lowest values in both variables. The thrill or flow caused by time pressure might hence allow active procrastinators to enjoy their tasks shortly before a deadline, while proficient SRL helps them succeed in spite of the delay. However, whether their high intrinsic motivation reflects a temporal, direct consequence of active procrastination, or potentially arises from the application of inherently rewarding SRL processes, will need to be addressed by future research. Nevertheless, SRL may enable active procrastination by guiding the effective management of resources required to successfully complete tasks on time. Consequently, the findings suspect high potential for SRL training to empower passive procrastinators to escape the vicious cycle of dysfunctional procrastination.

Abstract (German)

Prokrastination als die Tendenz, Aufgaben später als geplant zu beginnen oder sie nicht zügig zu erledigen, ist unter Studierenden stark verbreitet. Während passive Prokrastination sich auf das traditionelle Verständnis der Verzögerung als dysfunktionales Verhalten mit negativen Folgen bezieht, wird aktive Prokrastination als funktionale Form mit adaptiven Bewältigungsmechanismen und positiven Auswirkungen angesehen. Die vorliegende Arbeit untersucht den Zusammenhang von intrinsischer Motivation und selbstreguliertem Lernen (SRL) mit aktiver und passiver Prokrastination. Eine Stichprobe von Studierenden in Österreich (N = 1527) wurde mittels Online-Umfrage untersucht und in aktive, passive und Nicht-Prokrastinierende unterteilt. Die stark negative Korrelation zwischen aktiver und passiver Prokrastination stützt die grundlegende Prämisse, dass es sich dabei um unterschiedliche Konstrukte handelt. In Übereinstimmung mit den aufgestellten Hypothesen deuten die Ergebnisse zudem darauf hin, dass SRL positiv mit aktiver und negativ mit passiver Prokrastination zusammenhängt. Im Gegensatz zu den Vorhersagen erzielten aktiv Prokrastinierende unter den drei Gruppen die höchsten Werte in intrinsischer Motivation und SRL, während passiv Prokrastinierende jeweils die niedrigsten Werte aufwiesen. Ein durch Zeitdruck verursachter Thrill- oder Flow-Zustand könnte es aktiv Prokrastinierenden somit erlauben, ihre Aufgaben kurz vor einer Deadline mit Freude zu erledigen, während sie dank ihres geübten Einsatzes von SRL trotz Verzögerung erfolgreich sind. Ob ihre hohe intrinsische Motivation jedoch tatsächlich eine zeitliche, direkte Folge der aktiven Prokrastination ist oder eher aus inhärent lohnenden SRL-Prozessen resultiert, bedarf weiterer Forschung. Nichtsdestotrotz dürfte SRL die aktive Form der Prokrastination unterstützen, indem es die effektive Regulation von erfolgskritischen Ressourcen ermöglicht. Folglich deuten die Ergebnisse auf ein hohes Potenzial von SRL-Trainings hin, passiv Prokrastinierende aus dem Teufelskreis der dysfunktionalen Prokrastination zu befreien.

Introduction

Procrastination refers to the common tendency of voluntarily delaying to start, continue, or finish an intended action, based on self-regulation failure (e.g., Sirois & Pychyl, 2013). Traditionally, the behavior pattern has been associated with negative effects not only on the academic performance and grades, but also on the physical, mental, and financial well-being of affected individuals (Steel, 2007). Among university students, feelings of anger, anxiety or remorse, stress, and a negative self-concept have been reported as destructive consequences of academic procrastination (Grunschel et al., 2013). However, the behavior becomes tempting already during adolescence amidst instant gratification- or sensation-seeking tendencies, hampering psychological functioning, sleep quality, and physical well-being in a critical developmental stage (Pérez-Jorge et al., 2024). If not only learning but also health behaviors and treatments are postponed, procrastination results in poorer health and heightened risk of illness in the longer term (Sirois et al., 2003). Severe procrastinators, in particular, have been associated with lower quality of life and a higher likelihood to be affected by psychiatric disorders, anxiety, and depression (Rozental et al., 2022).

Given the number of possible disastrous consequences of the self-regulation failure that procrastination is often equated with (e.g., Sirois & Pychyl, 2013), it appears unlikely to be harmless or even beneficial in some cases. Nevertheless, this is precisely what the distinctive notion of *active procrastination* suggests, which was postulated two decades ago (Chu & Choi, 2005) as a functional expression of delay. Accordingly, it is defined as "a multifaceted phenomenon that includes cognitive (decision to procrastinate), affective (preference for time pressure), and behavioral (task completion by the deadline) components as well as the physical results and satisfaction with them" (Chu & Choi, 2005, p. 247). Apart from the shared procrastination behavior, this understanding contrasts *passive procrastination* representing a predominantly negative construct causing aforementioned detriments.

Although both procrastinator types might face similar motivational obstacles (Cao, 2012b) preventing them to execute tasks uninterruptedly, an ultimate failure to deliver satisfying outcomes in time implies time management issues in passive procrastinators that active procrastinators overcome to a degree sufficient for academic functioning (Chu & Choi, 2005). In fact, they seem to successfully enhance their learning by managing time and place, regulating effort, seeking help, and learning with and from their peers (Shi et al., 2024). Moreover, instead of tapping into the self-handicapping capacity of procrastination, active procrastinators maintain the belief in their ability to complete their tasks efficiently (Corkin et al., 2011). Thus, a crucial difference between active and passive procrastinators might be

constituted in their degree of applying "self-directive processes and self-beliefs that enable learners to transform their mental abilities, […], into an academic performance skill" (Zimmerman, 2008, p. 166), - or, in short, of mastering self-regulated learning (SRL).

Notably, a lack of external structure, motivation, resources, or support facilitates the onset of procrastination (Svartdal et al., 2020). One prime example of disrupting conditions presented itself to learners of all ages across the globe in 2020 with the COVID-19 pandemic, which caused strict lockdowns shutting down large parts of public and academic life. From one day to the next, students had to organize their learning in more autonomous ways than in a typical classroom setting and were prevented from attending infrastructure conducive to focused studying (Bork-Hüffer et al., 2021). Even after the pandemic and its restrictions had faded, the unprecedented transition left behind a transformed educational landscape posing significant challenges for students' concentration and motivation (Bork-Hüffer et al., 2021). The introduction of new digital learning tools and technologies and a trend of modularization raise the question if future students encounter not only a more flexible and individualized but also a more fragmented and detached educational experience (Rapanta et al., 2021). When social media or other digital entertainment additionally compete for the attention of the young mind, resisting to put aside academic work in favor of more instantly gratifying activities becomes increasingly tedious (Suárez-Perdomo et al., 2022). Under such conditions, keeping learners engaged by fostering intrinsic motivation through environments that support the satisfaction of the basic psychological needs (Luo et al., 2021) continues to gain relevance.

Both SRL and motivational measures have certainly shown to play an invaluable role for academic achievement (e.g., Feraco et al., 2023). Given the increasing importance of self-regulation capacities in modern educational environments, this thesis aims to explore if SRL may enable a functional procrastination form. Distinguishing the two types, the present work adds to the investigation of differences between active, passive, and non-procrastinators in terms of intrinsic motivation and SRL. More specifically, it is proposed that active and passive procrastinators share their lower intrinsic motivation towards academic work compared to non-procrastinators. However, active procrastinators are expected to report higher SRL strategy use than passive procrastinators, which might represent a decisive cause for their different characteristic ramifications. To validate the underlying premise of a conceptional distinction between active and passive procrastination, an assumed negative relationship is additionally tested. Taken together, this study is among the first to compare the two procrastinator types and non-procrastinators in terms of intrinsic motivation and self-regulation in their learning experience during an extraordinary era of online education.

Theoretical Background

Procrastination

The term procrastination originates from the Latin prefix *pro*, translating to ‘forward’, and *crastinus*, meaning ‘belonging to tomorrow’, which already hints at the central notion of the concept. Even though the exact operational configuration of the construct remains a topic of ambiguity among scholars, the involvement of an act of delay has been commonly acknowledged as one of its essential components (Pinxten et al., 2019). When challenging, stressful, or important tasks should be tackled, typical procrastinators repeatedly choose to put them off and end up dedicating their time to less difficult and more enjoyable activities instead (Pychyl et al., 2000). One attempt to derive a comprehensive and unambiguous definition setting it apart from other forms of delay describes procrastination as “the voluntary delay of an intended and necessary and/or [personally] important activity, despite expecting potential negative consequences that outweigh the positive consequences of the delay” (Klingsieck, 2013, p. 26). Building on this understanding, procrastination would be dysfunctional by definition, which has been challenged by other scholars as will be elaborated on in the next chapter.

Procrastination is a phenomenon particularly prevalent among university students with varying estimates of up to 95% according to early findings on the matter (Steel, 2007). Some further evidence points to significant intraindividual variance in procrastination and that almost all students indulge in this behavior from time to time (Theobald et al., 2019). However, in its traditional understanding, procrastination would be described as a personality trait or tendency in terms of its stability across temporal and situational variations (Steel, 2007). Across the globe, between 20 and 25% of the general adult population are assumed to chronically engage in procrastination behaviors in various spheres of their lives (Abbasi & Alghamdi, 2015). This so-called *trait procrastination* is indeed related and conducive - but not identical - to *state procrastination* as the factual delaying of tasks. With regard to this distinction, the present study concentrates on trait procrastination, interpreted as a relatively stable behavioral tendency, rather than state procrastination, which is more amenable to influence from situational or contextual factors and the individual’s action approaches (Wäschle et al., 2014). For instance, the timing of subsequent rewards or punishments as well as the appeal of the given task encompass important task characteristics affecting the likelihood of procrastination to occur (Steel, 2007). A boring or draining task is hence more likely to be avoided or postponed, and the later in the future related positive or negative consequences are to eventuate, the longer procrastination can endure “in good conscience”.

Similarly, tasks that are not accompanied by clear instructions and cause perceived ambiguity tend to be postponed more often (Ackerman & Gross, 2005; Wieland et al., 2022). On a personal level, learners are more likely to engage in academic procrastination if positive metacognitive beliefs about the ramifications of delaying one's work are held (Cao, 2012a). Individuals with ADHD seem to be particularly prone to engage in the delay pattern, which has been linked to their lower expectancy of completing a task and to their higher impulsiveness (Netzer Turgeman & Pollak, 2023). In line with this connection to attention-deficits, procrastination is also strongly associated with distractibility (Steel, 2007) as well as with excessive social network use (Suárez-Perdomo et al., 2022).

Even though the act of procrastination does not seem to bring momentarily negative affect because the activities replacing what "should" be done tend to be more enjoyable, it is generally associated with lower motivation and feelings of guilt (Pychyl et al., 2000). Aside from the behavioral manifestation, solely attending positive or negative metacognitive beliefs about procrastination has been linked to higher levels of anxiety (de Palo et al., 2017). Moreover, the expectation that key figures in one's life hold particularly high standards for one's performance, i.e. socially prescribed perfectionism, might represent another stress-inducing correlate of procrastination (Steel, 2007). Over time, the stress caused by delaying important tasks and enduring feelings of guilt or remorse leaves the procrastinator more vulnerable to illness and poor health (Sirois et al., 2003). The manifold additional negative consequences of procrastination after the fact and in the longer term have already been addressed in the introduction of this work and include academic, physical, mental, and financial detriments (e.g., Rozental et al., 2022; Steel, 2007).

What exactly causes people to delay or procrastinate is still not fully explored, but research has lately emphasized on the potential role of personality (e.g., Meng et al., 2024), metacognition (e.g., Zhou et al., 2022), and self-regulation more generally (e.g., Elizondo et al., 2024). While a recent meta-analysis has revealed a tendency of males to procrastinate more than females, other socio-demographic aspects like socioeconomic status, nationality, family size, or educational background did not display any significant impact on the likelihood of dilatory behaviors (Lu et al., 2022). It is broadly assumed that procrastination is provoked by both trait-level attributes and situational factors specific to a task or context (e.g., Wieland et al., 2022). Among the predictors classically most strongly associated with procrastination are low measures of conscientiousness, high distractibility, poor organization and achievement motivation, as well as a gap between intention and action (Steel, 2007). It has also been suggested that purposefully chosen dilatory behaviors offer a valve for coping

with feelings of stress by counteracting a perceived temporary decline in one's self-control capacities or willingness, i.e. ego depletion (Shang et al., 2023). Consistent with this, individuals who report low positive affect on a trait level seem to procrastinate more as a result of struggling with the initiation of action (Kühnel et al., 2023). Overall, procrastination has been described as a form or consequence of self-regulatory failure, and previous findings do support the negative relationship between procrastination and adaptive self-regulatory processes (e.g., Corkin et al., 2011). At the same time, the appearance and character of dilatory behaviors can evidentially be amended through the application of self-regulation strategies (Wäschle et al., 2014). Therefore, it is not surprising that attention has long been called to the crucial role of self-regulation and related volitional skills when designing effective interventions for and conducting meaningful research on procrastination (e.g., Pychyl et al., 2000).

Active vs. Passive Procrastination

The predominantly negative understanding of procrastination was challenged by Chu and Choi (2005), who proposed a division between active and passive procrastination that postulates cognitive, affective, and behavioral differences between the two. Whereas the passive type relates to the traditional understanding of procrastination as dysfunctional, unintended behavior with disadvantageous consequences from the failure to make and act on decisions in a timely manner, the active form is regarded as a positive expression of procrastination. Tasks are successfully completed by the deadline, and satisfactory results are still likely to be achieved after a deliberate decision to procrastinate has taken place due to a preference for time pressure. Correspondingly, the four defining factors allegedly underlying the construct of active procrastination are *preference for time pressure*, *intentional decision to procrastinate*, *ability to meet deadlines*, and *outcome satisfaction* (Chu & Choi, 2005).

Active procrastinators are expected to be more similar to non-procrastinators than to passive procrastinators in certain respects, despite procrastinating to the same extent as the latter group. Indeed, it was found that not only non-procrastinators, but also active procrastinators scored significantly higher than passive procrastinators in terms of purposive use of time, time control, self-efficacy belief, and positive outcomes in a university student sample (Chu & Choi, 2005). According to a phenomenological study, active procrastinators engage in purposeful delay systematically while reporting increased efficiency as a result, and attractive social and academic ramifications as additional reinforcement of this behavior (Hensley, 2016). Whereas passive procrastination is usually concomitant with lower grades and educational deficiency, active procrastination seems to effectively exhibit an overall

positive relationship to academic performance according to a recent meta-analysis (Kooren et al., 2024). Active procrastination is also positively associated with measures of psychological well-being (Habelrih & Hicks, 2015), creative problem solving (Liu et al., 2017), and creative thinking (Bai et al., 2024). For active procrastinator, the time delay caused by their decision to postpone a task might provide an ”incubation period” and the resulting time pressure a positive stressor for cultivating creative thoughts and ideas just in time (Liu et al., 2017). Moreover, while passive procrastinators tend to suffer from the dysfunctional aspects of striving for perfection, active procrastination is negatively related to maladaptive perfectionism (Coutinho et al., 2022).

In terms of the Big Five personality traits, several links to active and passive procrastination have been established. Agreeableness, extraversion, and conscientiousness negatively relate to passive procrastination (Kim et al., 2017). In its traditional understanding, procrastination also shares a strong inverse connection to conscientiousness (Gao et al., 2021). In fact, it is even suggested that conscientiousness might represent one of the focal aspects of procrastination (Steel, 2007). However, at the same time, the said five-factor trait is strongly positively linked to the active procrastination sub-dimension *ability to meet deadlines* (Kim et al., 2017). This might imply a differentiation between active and passive procrastinators in terms of self-control or motivation, which are the two neural pathways suspected to underly the influence of conscientiousness on factual procrastination (Gao et al., 2021). In line with this, motivational regulation was found to mediate the strong negative relation between conscientiousness and procrastination (Bäulke et al., 2019), suggesting that the occurrence and extent of procrastinatory behaviors might be determined by motivational self-regulation strategies that are in turn facilitated or hindered by manifestations of this personality trait. Whereas active and passive procrastination generally share distinct connections to the Big Five personality dimensions, neuroticism is positively associated with both types of procrastination (Kim et al., 2017), which coincides with its predictive value to the occurrence of general academic procrastination (Bäulke et al., 2019). Extraversion, on the other hand, appears to be positively associated only with active procrastination (Kim et al., 2017). The so-called Dark Triad traits of Machiavellianism, psychopathy, and narcissism seem to predict certain dimensions of active procrastination (Hughes & Adhikari, 2022), but have also been positively linked to a more negative understanding of procrastination (Meng et al., 2024).

When it comes to the question of how general measures of traditional procrastination connect to active procrastination, the situation is not as clear. The two constructs have been

compared in former studies, but the inconclusive findings on the nature of their relationship have been calling for further examination (Wolters et al., 2017). Regarding the recentness of contemplating an active – and more positive – type of procrastination allows the conclusion that traditional measures of procrastination were set up to capture the construct in an understanding that is more closely connected to what we here call passive procrastination. This is corroborated by the inverse link between active procrastination and (passive) procrastination in studies that equate passive procrastination with traditional procrastination (e.g., Corkin et al., 2011; Kim et al., 2017). The suggested multifactorial structure of active procrastination, which comprises a *preference for time pressure*, an *intentional decision to procrastinate*, the *ability to meet deadlines*, and *outcome satisfaction* (Chu & Choi, 2005), allows for a more differentiated analysis of its connection to other variables. In line with the shared behavioral tendency to delay, traditional *passive* procrastination has been positively linked to the sub dimension *intentional decision to procrastinate*, while it appears to show inverse relations to the remaining, and more adaptive, dimensions of active procrastination (Hensley, 2014).

More recently, active procrastination as a construct has been criticized for arguably lacking the defining characteristics of procrastination and therefore not being labelled accurately (Chowdhury & Pychyl, 2018). Importantly, the postulated conscious and calculated decision to delay contradicts the irrational character of postponing tasks in classic definitions of procrastination (Pinxten et al., 2019). Further, the construct is accused of becoming paradoxical as soon as the term procrastination is replaced by one of its defining features, namely self-regulation failure, which cannot be active (Chowdhury & Pychyl, 2018). On a related note, the term *active delay* has been proposed as a more suitable label based on the reasoning that delay has the capacity to occur in adaptive ways as opposed to the inherently maladaptive phenomenon of procrastination (Corkin et al., 2011). Following a critical examination of the APS that did not support aforementioned multi-factor structure, it has also been suggested to redefine active procrastination as *purposeful delay* (Pinxten et al., 2019). Similarly, two of the four factors claimed to constitute active procrastination have been called into question based on their relations to behavioral measures (Hensley, 2014). This notion was further corroborated by findings from a Principal Component Analysis, suggesting that active procrastination should rather be seen as a heterogenous construct consisting of both purposeful delay and arousal delay (Chowdhury & Pychyl, 2018). Apart from the manifold conceptual critique, a lack of detected advantageous consequences for

active procrastinators has additionally called into question the validity of the claimed differentiation from passive procrastinators on an outcome level (Shaked & Altarac, 2023).

On a more granular level, this critique expands to methodological flaws in the allocation of research subjects into the subgroups of active, passive, and non-procrastinators for comparison. In their study establishing the concept of active procrastination, Chu and Choi (2005) applied a two-step process by first dividing participants into non-procrastinators and procrastinators based on their Academic Procrastination Scale (AcaPS) score. Next, those respondents that were labelled procrastinators due to exceeding the midpoint on this scale were further separated into active and passive procrastinators by deploying a cut-off point on the Active Procrastination Scale (APS). Despite their reported finding that the AcaPS and APS scale are independent of each other and assess separate concepts, they base their group division on a consecutive selection using both scales, which equals to regarding high AcaPS scores as a prerequisite for active and passive procrastination. This implies that active procrastination is indeed a sub form of procrastination so that only "diagnosed" procrastinators can potentially be active procrastinators. Importantly, this formally rules out the suggested possibility of the concept called active procrastination to represent a sort of purposeful delay (Corkin et al., 2011) that might be part of time management strategies applied by individuals who are not identified procrastinators by classical measures. It is not indicated if or how many participants among the declared non-procrastinators scored above cut-off on the APS and might have been declared active procrastinators solely by their APS responses. Moreover, the only stated reason for choosing the cut-off point distinguishing between active and passive procrastinators in the second step is to create two groups of comparable sizes. This method of splitting the sample has been criticized not only by the authors themselves, but also by other scholars in the field (Chowdhury & Pychyl, 2018).

In contrast to the numerous outlined differences that are suspected to set apart active and passive procrastinators (e.g., Chu & Choi, 2005), their motivational setup might look surprisingly similar and, more importantly, might constitute one of the main causes for postponing tasks in the first place for a lack of pleasure gained from engaging in learning activities (Sirois & Giguère, 2018). Before addressing the role of self-regulated learning (SRL) as a behavioral lever throughout the learning process that might support procrastinators in reaching positive learning outcomes (De Bruijn-Smolders et al., 2016), intrinsic motivation will hence be explored as another potential antecedent for procrastination that tends to be less amendable in its nature (Gottfried et al., 2001).

Intrinsic (Academic) Motivation

According to self-determination theory (SDT; Deci & Ryan, 1985), human self-motivation, self-regulation, and personality development rely decisively upon the fulfillment of the three basic and innate psychological needs for competence, relatedness, and autonomy. SDT has also offered a more nuanced understanding of motivation, by defining different kinds of motivation ranging from self-motivation to external regulation, with a special emphasis on intrinsic motivation as "the inherent tendency to seek out novelty and challenges, to extend and exercise one's capacities, to explore, and to learn" (Ryan & Deci, 2000, p. 70). This form of motivation can further be divided into three subtypes based on their behavior-driving targets towards knowledge, achievement, or stimulating experiences, which have been shown to display differentiated connections with dilatory behaviors, respectively (Tisocco & Liporace, 2023). Overall, intrinsic motivation only accompanies courses of action that contain intrinsic appeal for an individual, as the activity is pursued for the satisfaction it brings in and by itself, and can be enabled or strengthened by an environment supporting the basic psychological needs (Ryan & Deci, 2000).

Applied to an educational setting, students' success and well-being have been widely associated with their academic intrinsic motivation (Howard et al., 2021). At the same time, learning in the context of formalized education is by default linked to some form of external rewards in terms of grades, credits, or scholarships. Such sources of extrinsic motivation for engaging in a given activity have been suspected to potentially cause a long-term deterioration of intrinsic motivation previously fueling the same activity (Moller & Sheldon, 2020). Nevertheless, the provision of learning environments that promote autonomy can support learners in maintaining their intrinsic motivation for different subjects (Soe et al., 2025). Similarly, in online learning settings, intrinsic motivation has been predicted by perceived autonomy, competence and relatedness (Luo et al., 2021) as well as by the online learning system's quality (Nguyen & Chen, 2023). The fulfillment of the three basic psychological needs also supports learners in successfully coping with and overcoming academic difficulties or setbacks (Shi et al., 2024).

As the onset of procrastination is decisively influenced by a number of task characteristics (Wäschle et al., 2014), it is assumed that procrastination is less likely to occur once a task is inherently pleasant or rewarding. For instance, it has been found that procrastination is disincentivized when assignments appear interesting to the learner, inspire the application of a number of different skills, and include precise instructions (Ackerman & Gross, 2005). When it comes to the overall relationship between different facets of

procrastination and intrinsic motivation, however, empirical evidence has not been unambiguous. Some results indicate no significant difference in intrinsic motivation among active, passive, and non-procrastinators (Cao, 2012b; Chu & Choi, 2005). On the other hand, research equally conducted within a SDT framework suggests that low intrinsic motivation predicts passive procrastination, but identifies a positive relationship between intrinsic motivation and active procrastination (Seo, 2013). This aligns with the SDT notion that intrinsic motivations enhances through perceived competence (Deci & Ryan, 1985), which active procrastinators may be more likely to experience thanks to their ability to manage tasks under pressure. On the other hand, however, stronger intrinsic motivation has been argued to lower the probability of academic procrastination to occur in the first place (Chen et al., 2024). This is underlined by the finding that experiencing high positive affect for a given tasks appears to reduce the risk of postponing or refraining from it (Sirois & Giguère, 2018).

Research investigating various subtypes showed procrastination to relate negatively to the intrinsic motivation towards stimulating experiences as well as towards achievement, but positively to the intrinsic motivation to know (Tisocco & Liporace, 2023). That the process of acquiring knowledge is inherently less structured and temporally bounded than other goal-directed activities might account for its positive association with procrastination, which often occurs amidst a lack of external guidance or structure (Svartdal et al., 2020). Moreover, both active and passive procrastinators share significantly lower levels of task value in comparison with non-procrastinators (Cao, 2012b), which signifies less perceived importance of a task for reaching personal, academic or professional, or hedonic advancement.

Overall, intrinsic motivation is only one of manifold factors that influence and regulate the actions an individual executes within and outside of their learning activity. Equally important is the broader concept of self-regulation, which encompasses processes and strategies by which individuals actively guide their thoughts, emotions, and behaviors in pursuit of personal goals (Zimmerman, 2002). Beyond the motivational drive to act, self-regulation provides a strategic framework that enables individuals to plan, monitor, and adapt their actions over time, which represents a capacity that can easily decide upon success, or failure, in academic settings (e.g., Theobald, 2021). The following chapter explores the role of self-regulated learning (SRL) as a central mechanism steering academic work across motivation, metacognition, and behavior (Zimmerman, 2008), which might also serve students in mitigating or transforming their procrastinatory tendencies and outcomes.

Self-Regulated Learning

Self-regulated learning (SRL) serves as a core conceptual framework within educational psychology research to embed and disentangle numerous aspects and variables that constitute or impact the learning process in the areas of (meta-)cognition, motivation, and emotion (Panadero, 2017). In short, self-regulation in this context can be described as "the self- directive process by which learners transform their mental abilities into academic skills" (Zimmerman, 2002, p. 65). As opposed to reactive behaviors dictated by external circumstances, SRL refers to proactive activities like goal setting, selection and application of study strategies, and self-monitoring, which are executed to gain academic competences and are characterized by personal initiative, endurance, and flexibility (Zimmerman, 2008). Self-regulated learners apply a set of cognitive, metacognitive, and motivational skills to plan, implement, and review these activities throughout the learning process (Schraw et al., 2006). From an SDT perspective, the application of such SRL strategies and metacognitive processes can be cultivated by the satisfaction of the basic psychological needs for autonomy, competence, and relatedness (Shi et al., 2024). In online learning environments, for instance, SRL is more likely whenever the need for pervasive learning experiences is met through high information, system, and service quality (Nguyen & Chen, 2023). Once applied, SRL holds the potential to boost progress and to attenuate the gap between low- and high-proficiency students in such online learning settings (Yang et al., 2024). Indeed, self-regulatory processes like metacognitive strategies, motivation, and self-efficacy have consistently demonstrated to positively affect learning outcomes (De Bruijn-Smolders et al., 2016). More generally, learners are expected to benefit from heightened academic achievement and motivation as a consequence of developing their SRL skills (e.g., Theobald, 2021).

Literature on SRL is abundant and different models have emerged, which anchor core variables, stages, and dynamics in the learning process and imply differential intervention suggestions for its improvement (Panadero, 2017). For the work at hand, the cyclical phase model by Zimmerman (2000) was selected and consulted to provide a theoretical basis from a social cognitive point of view. It is seen as one of the most comprehensive models on SRL and takes into account cognitive, behavioral, and motivational facets, with an emphasis on interactions between motivation and self-regulation (Panadero & Alonso-Tapia, 2014). The model describes three cyclical phases constituting self-regulation in terms of its dynamics and related beliefs: *forethought*, *performance or volitional control*, and *self-reflection processes* (Zimmerman, 2000). Over time, their depiction has been adjusted several times by Zimmerman to include even more processes and details (Panadero & Alonso-Tapia, 2014). In

the following, the interconnected phases will be introduced together with their suggested pathways and links to active and/or passive procrastination.

The forethought phase is characterized by processes of task analysis and self-motivation (Zimmerman, 2002). This is when the learner first approaches a task to explore it and to appraise their abilities and strategies to successfully tackle and complete it (Panadero & Alonso-Tapia, 2014). Goal setting and strategic planning occur in the context of a dynamic task analysis that needs to be evaluated and adjusted continuously for successful self-regulation (Zimmerman, 2002). This process is facilitated by self-motivation beliefs, including self-efficacy, outcome expectations, and goal orientation (Zimmerman, 2000). Next to the beliefs in one's own ability and in an adequate outcome, interest in as well as perceived value of the task decisively influence the initiation and maintenance of motivation (Panadero & Alonso-Tapia, 2014). Both active and passive procrastinators might find it generally difficult to uphold intrinsic motivation (Chen et al., 2024), and seem to orient themselves towards minimizing their effort by avoiding or cramming work (Cao, 2012a). However, active procrastination has been linked to higher beliefs in self-efficacy (Chu & Choi, 2005) and personal mastery (Bai et al., 2024). These convictions further impact goal setting as humans tend to set higher goals and stay dedicated more persistently when they regard themselves as being capable (Zimmerman, 2000). For instance, self-efficacy has been shown to mediate the relationship discovered between active procrastination and creative problem-solving (Liu et al., 2017). Despite indulging in procrastination, the high belief in one's ability to successfully complete a range of tasks might hence allow for the emergence of suitable, high-quality solutions, even within time frames shortened by delaying the task. Feeling confident about one's own competence to successfully complete given tasks quickly and efficiently might even be among the reasons that make (active) procrastination appear particularly attractive to begin with (Cao, 2012a). Passive procrastinators, on the other hand, have reported low values in self-efficacy when compared to active and non-procrastinators (Chu & Choi, 2005), which is expected to make them more vulnerable for falling into a vicious circle of procrastination (Wäschle et al., 2014). Moreover, their dilatory behaviors and difficulties in meeting deadlines may be partly attributable to a lack of strategies related to goal setting, prioritization, and time use monitoring already during the forethought phase (Wolters et al., 2017). Indeed, evidence suggests that goal setting and strategic planning strongly influence the actual use of strategies in the following performance phase (Callan et al., 2019). Similarly, time management strategies considered during forethought have been reported to play a critical role in enhancing the likelihood of successfully meeting deadlines

(Wolters et al., 2017). For active procrastinators, the strategic decision to delay might thus follow a thorough task analysis that allows them to estimate how much time they can afford to procrastinate before they need to start or continue to still achieve satisfactory outcomes in line with their goals. Passive procrastinators, on the other hand, may enter the forethought phase too late to conduct effective task analysis and planning, or may even skip it altogether due to the time pressure resulting from their initial inaction.

During the performance or volitional control phase, processes related to attention and action are central in accompanying motoric efforts to keep the learner motivated and on track to reach their goals (Panadero & Alonso-Tapia, 2014). They can be classified into self-control, referring to the execution of means and strategies previously chosen during forethought, and self-observation, which entails the recording of or experimenting with one's own learning as well as its functioning's cognitive tracking in the form of self-monitoring (Zimmerman, 2002). Not surprisingly, the application of strategies for motivation, metacognition, and managing one's time seems to be conducive to finishing work and meeting deadlines (Wolters et al., 2017), while strategy use and metacognitive self-monitoring have also shown positive predictive influences on performance measures (Callan et al., 2019). Since both the ability to meet deadlines and outcome satisfaction are among the defining characteristics of active procrastinators, it appears only logical that previous findings report the application of certain SRL strategies to predict active procrastination (Shi et al., 2024). However, tendencies of distractibility and impulsiveness get their chance to directly interfere with the intention to engage in academic work during the performance phase, aided by the low level of self-control linked to procrastination (Zhao et al., 2021). Both active and passive procrastinators report to encounter challenges in being studious and in focusing on given tasks (Shaked & Altarac, 2023), hence sharing the struggle of accomplishing this phase uninterruptedly as opposed to their non-procrastinating peers. Nevertheless, thanks to the prior application of strategies and considerations on time management, active procrastinators might enter a stage of focused work just at the right time ahead of a deadline to still successfully finish the assignment. In contrast, passive procrastinators might find themselves overwhelmed after having neither engaged in prior planning nor developed effective strategies to face a daunting workload within a short time, which further impairs their ability to focus or act with purpose.

Self-judgment and self-reaction processes occurring in the final self-reflection phase determine how the experience is processed and responded to, while additionally affecting and informing forethought on upcoming efforts (Zimmerman, 2000). Strong perceived self-

efficacy, which tends to be related to active procrastination, also leads to higher self-assessments in terms of goal achievement, which in turn further strengthens perceived self-efficacy (Wäschle et al., 2014). As part of the self-regulatory cycle, feedback loops not only connect current learning experiences to past ones but also inform future ones. For instance, achieving success in a realm where no goals were defined before might cause the development of powerful goals in that area, fueling the next feedback cycle (Panadero, 2017). For active procrastinators, a "virtuous circle of self-efficacy" (Wäschle et al., 2014) might work in a way that prior learning experiences proved to them that their procrastination and a related later onset of working on tasks do not prevent them from mastering these to their satisfaction and on time (Hensley, 2016). As a result, they might not experience an overwhelming, paralyzing effect from time pressure, but rather perceive it as a motivational force that fuels their progress. On the contrary, passive procrastinators are more likely to reinforce additional feelings of guilt and stress if they reach the self-reflection phase and attribute their failure to perform in time and/or to their contentment to their procrastination.

Importantly, SRL can be regarded as a skill or habit that can be trained and improved over time. Indeed, SRL trainings have been reported to not only boost the application of SRL strategies, but to heighten academic performance and the learners' motivation as a direct consequence (Theobald, 2021). When considering the recent flexibilization and digitalization of the educational experience, supporting the learner to self-regulate their study processes and to cultivate perceptions of self-efficacy becomes more and more relevant in empowering their academic career (Rabin et al., 2020). Even when trait-level risk factors like low conscientiousness persist, self-regulation can determine if or how intraindividual trajectories of procrastination actually manifest over time (Bäulke et al., 2019). For example, encouraging self-regulation facets related to motivation and cognition, like learning from mistakes or goal setting, is suspected to allow students to foster their perseverance (Elizondo et al., 2024). Ultimately, for learners prone to falling into the dilatory behavior pattern, SRL might make the decisive difference between ending up with the negative consequences typically associated with procrastination, or with a functional academic career that does not suffer from their habitual delay.

Research Question and Hypotheses

Even though many students procrastinate to their academic, physical, and mental detriment, others seem to thrive and succeed under pressure through last-minute efforts, which has originally sparked the idea of distinguishing between active and passive procrastination (Chu & Choi, 2005). Building on Zimmerman's (2000) cyclical phase model of SRL, the present research investigates how intrinsic motivation and SRL relate to the two forms of procrastination. Consequently, the central research question is: How do active, passive, and non-procrastinators differ in their intrinsic motivation and application of SRL strategies? Examining the interplay between motivation, regulation and procrastination as described in the following particularly aims at ascertaining whether applying SRL might harbor the potential to transform a self-defeating delay pattern into a functional approach that allows learners who struggle with their motivational drive to succeed under time pressure.

Given the notion that active and passive procrastinators differ not only in behavioral but also in cognitive and affective terms (Chu & Choi, 2005), it is expected that they represent two distinct constructs that are mutually exclusive. Active and passive procrastination have indeed been shown to negatively relate to each other (e.g., Corkin et al., 2011), with the *ability to meet deadlines* dimension as a particularly strong distinguishing feature (Seo, 2013). The present thesis will not explore the conceptual or semantic debate around active procrastination (e.g., Chowdhury & Pychyl, 2018; Pinxten et al., 2019) but works on the assumption that both active and passive procrastination represent procrastination, while being diametrically opposed to each other in certain defining features (Chu & Choi, 2005). The first hypothesis shall hence establish a premise for the research at hand by supporting the validity of the proposed differentiation:

H1: *There is a negative correlation between active and passive procrastination.*

Despite the clear distinction, the two types of procrastinators share their eponymous habit of delaying tasks to a significant degree, which hints at certain motivational barriers they might encounter as opposed to non-procrastinators. It is suggested that high levels of intrinsic motivation, characterized by genuine interest and enjoyment in the task, may serve as a protective factor against procrastination (Chen et al., 2024). On the other hand, associating little positive affect to the tasks at hand makes disengagement and delay all the more attractive and likely (Sirois & Giguère, 2018). If all procrastinators postpone their work partly due to the lack of enjoyment drawn from engaging in it, the two types might thus not differ from each other in terms of their low intrinsic motivation in comparison to non-procrastinators (Cao, 2012b).

Therefore, it is also proposed that intrinsic motivation is not the factor that distinguishes active procrastinators from passive procrastinators. Together with the fundamental assumption that the perception of stronger intrinsic motivation for working on the assigned task is what sets apart non-procrastinators from both procrastinator types in the first place, it follows that:

H2: *Intrinsic motivation is higher in non-procrastinators than in active and passive procrastinators.*

H3: *Active and passive procrastinators do not differ in terms of intrinsic motivation.*

However, there remain denominating factors to explore that do distinguish both types of procrastinators and lead to the respective behaviors and ramifications defining each. Despite sharing the habit of delaying tasks to a notable degree (Chu & Choi, 2005), active procrastinators may be able to encounter their suggested lack of motivation in a way that does not compromise their academic performance. This would be supported by the finding that academic motivation shows lower predictive impact on academic achievement when procrastination levels are high (Fernández Da Lama & Brenlla, 2023). Moreover, prior research does suggest that certain adaptive SRL indicators predict active procrastination more or less directly (Corkin et al., 2011). For instance, resource management strategies seem to allow the satisfaction of the learner's basic needs to be channeled into this functional form of procrastination with its advantageous consequences (Shi et al., 2024).

Since the ability to meet deadlines and the satisfaction with outcomes are distinctive features of active procrastinators (Chu & Choi, 2005), it is argued that they have mastered SRL to an extent that makes them succeed in starting just in time to finalize tasks upon the deadline and to achieve positive outcomes. Even when intrinsic motivation is low or absent, the use of SRL processes and strategies might hence prevent the dire consequences traditionally associated with procrastination, and allow for a functional type of procrastination to come into effect (Shi et al., 2024). Taken together, this leads to the following assumption:

H4: *There is a positive relationship between active procrastination and self-regulated learning.*

On the other hand, traditional measures of procrastination have displayed strong negative relationships with strategic and motivational facets of time management, an important SRL component conducive to academic performance (Wolters et al., 2017). Similarly, passive procrastination has displayed negative connections to adaptive self-regulatory processes, like cognitive and metacognitive strategies (Corkin et al., 2011).

Passive procrastinators are assumed to fail in developing, executing, or finalizing their self-regulation strategies, thereby either missing deadlines or ending up with poor results, which yields the numerous negative repercussions that have been traditionally associated with procrastination (e.g., Steel, 2007). Consequently, the following hypothesis was deducted:
H5: *There is a negative relationship between passive procrastination and self-regulated learning.*

Method and Data

In the context of the COVID-19 pandemic, the project *Learning under COVID-19 conditions* [*Lernen unter COVID-19 Bedingungen*] was launched by a research team of the Faculty of Psychology at the University of Vienna to evaluate how pupils, teachers, and students were affected by and coping with the exceptional situation and the COVID-19 restrictions in place (e.g., Holzer et al., 2021). With regards to tertiary education, four consecutive surveys were conducted at different examination points during the pandemic among students in Austria to gather cross-sectional as well as longitudinal data. Each of the four questionnaires focused on various aspects of distance learning, well-being, and other psychological concepts, while all of them shared some common themes. The author of the work at hand joined the project in March 2021 and was able to gather the data required to answer her research questions as part of the fourth survey, which is described in the following.

Procedure and Data Analysis

The survey was conducted online among students attending Austrian tertiary education institutions. Respondents were able to participate between 21 June and 31 July 2021. The study was created and completed by using the online survey tool UNIPARK and was accessible for participants through an online link. A list of all survey items can be found in Appendix A. Participants were recruited by the team of researchers, who promoted and distributed the survey to the target group of students enrolled in Austrian universities or comparable higher education institutions via social media as well as by email. Participation in the study was anonymous, voluntary, and based on informed consent. Respondents did not receive any form of incentive or monetary compensation for completing the survey. For organization, processing, and analysis of the compiled data, the IBM SPSS Statistics software was consulted.

Participants

Initially, 2867 responses to the survey were recorded, but 1340 cases had to be excluded as they did not complete the questionnaire or fit the inclusion criteria to a sufficient degree. The final sample regarded in the work at hand consisted of 1527 students from diverse academic fields attending different universities and tertiary education institutions in Austria. Basic demographic participant information is displayed in Table 1.

Table 1

Participant Demographics

Category	Attribute	Value
Age	*M* ± *SD*	25.77 ± 7.24
	Median	24
Gender	Female	1088 (71.25%)
	Male	402 (26.33%)
	Diverse	13 (0.85%)
Degree	Bachelor's	936 (61.30%)
	Master's	403 (26.39%)
	Diploma	153 (10.02%)
	Doctorate	28 (1.83%)

Note. Final sample size $N = 1527$.

Measures

Multi-item scales with satisfactory reliability estimates were adopted from existing instruments to measure the studied variables of active procrastination, passive procrastination, intrinsic motivation, and SRL. Given the integration of this study into a larger project survey capturing a broad set of additional variables, the employment of short scales was deemed important to reduce participant burden and to minimize dropouts triggered by extensive questionnaire length and survey fatigue. Participants responded to all items on a 5-point Likert scale ranging from 1 (*Not at all true*) to 5 (*Exactly true*). Cronbach alpha was calculated as an indicator for internal consistency reliability for each scale within the present sample. Table 2 presents an overview of those measures that were employed to examine the study variables together with selected sample items and reliability indicators, before they are described in more detail below.

Table 2

Overview of Measures Used in the Study

Construct	Instrument	Items used	Sample items	Reliability (α) in sample
Active procrastination	APS (Choi & Moran, 2009)	8	"I feel tense and cannot concentrate when there's too much time pressure on me." (rev.)	.87 (total) .90 (*affective preference for time pressure*)

			"I often start things at the last minute and find it difficult to complete them on time." (rev.)	.86 (*ability to meet deadlines*)
Passive procrastination	UPS (Fernie et al., 2017)	6	"I rarely begin tasks as soon as I am given them, even if I intend to." "I intend to get things done, but sometimes this just does not happen."	.90
Intrinsic motivation	SMR-LS (Thomas et al., 2018)	3	"Currently, I really enjoy learning and working in my studies." "Currently, I find studying for my studies really exciting."	.92
Self-regulated learning	LIST-K (Klingsieck, 2018; Wild & Schiefele, 1994)	6	"In the current home learning, I reserve set learning times in my routine." "I use different learning and working strategies."	.77

Note. 5-point Likert scales from 1 (*Not at all true*) to 5 (*Exactly true*) were used for all items.

Active procrastination was measured by means of the *Active Procrastination Scale* (APS) developed by Choi and Moran (2009), which had been self-translated to German in a process of forward and back translation involving a native English speaker. The full APS covers the four active procrastination factors *preference for time pressure*, *intentional decision to procrastinate*, *ability to meet deadlines*, and *outcome satisfaction* with 4-item scales each. However, regarding the extensive length of the study questionnaire, only 8 items were used instead of the original 16 to keep the dropout rate as low as possible. These represented the two sub-dimensions *preference for time pressure* and *ability to meet deadlines*, which were chosen in consultation with the academic thesis supervisor as they were perceived to be the most revealing and informative in the given context.

To measure passive procrastination, the 6-item *Unintentional Procrastination Scale* (UPS; Fernie et al., 2017) was used after being self-translated to German undergoing the same forward and back translation applied for the APS. This scale was employed in its full original extent and deliberately chosen by the author due to its explicit aim of covering a negative, or passive, understanding of procrastination, which does not apply for all procrastination scales traditionally consulted. Construed as uncontrollable or involuntary behavior that emerges in spite of the intention to act, the UPS represents the concept in clear opposition to a potentially intentional, or active, form of procrastination.

Intrinsic motivation was measured using three items of the SMR-LS (*Skalen zur motivationalen Regulation beim Lernen im Studium;* Thomas et al., 2018). In its full version, this German-language instrument comprises 13 items distributed across its four subscales of *intrinsic*, *identified*, *introjected*, and *external regulation*, capturing distinct forms of motivational regulation in academic contexts. The three items of the intrinsic motivation subscale reflect engagement in learning for inherent enjoyment and interest. The scale was originally selected by the long-term research team for earlier waves of the project and was retained to ensure consistency and comparability of longitudinal measurements over time.

Self-regulated learning (SRL) was measured by using six items of the scale LIST-K (Klingsieck, 2018), a shortened version of the German-language questionnaire LIST (*Lernstrategien im Studium;* Wild & Schiefele, 1994). These items span several dimensions of SRL in terms of cognitive and metacognitive strategies as well as management of internal and external resources. Although they were not independently selected from the full 39 items of the LIST-K by the author, they were previously chosen by the project team for earlier measurement points. Like for intrinsic motivation, their continued application safeguards consistency and comparability of measurements over time. Moreover, their conceptual alignment with core SRL components makes them theoretically and methodologically appropriate for equally capturing SRL in the context of the current research.

To enable the group comparisons necessary for hypothesis testing in the scope of the present study, scores on the APS and UPS were used to classify participants into three distinct procrastination subgroups, as described in the following section.

Subgroup Classification

As outlined in the theoretical framework, the original classification approach proposed by Chu and Choi (2005) in their study developing the concept of active procrastination has been subject to serious methodological critique. Therefore, another approach was adopted in this work to create the same three subgroups of active, passive, and

non-procrastinators, which did not rely on a two-step process. Instead, it was based exclusively on cut-off values one standard deviation above the sample's mean value in the APS (M = 3.49, SD = 0.92) and UPS (M = 2.98, SD = 1.04) each. Participants who scored at or above 4.41 on the APS were hence regarded as active procrastinators, and those scoring 4.03 or higher on the UPS as passive procrastinators. If both cut-offs were undercut, respondents were seen as non-procrastinators. This resulted in three subgroups of 239 active procrastinators, 272 passive procrastinators, and 1015 non-procrastinators. One single case slightly exceeded the cut-offs on both scales and was consequently removed from the group comparison sample as it could not be clearly ascribed to one subgroup only. The surprisingly low number of identified procrastinators within the student sample, where higher prevalence would typically be expected (e.g., Steel, 2007), may be attributed to self-selection bias. It was assumed that individuals prone to procrastination across various domains of life might have lacked the willingness or capacity to complete a voluntary, unpaid survey. Therefore, the application of this rather conservative identification of procrastinators was still seen as appropriate in consultation with the academic thesis supervisor.

Results

Descriptive Statistics and Preliminary Analyses

Descriptive statistics were computed for all main research variables, namely active procrastination, passive procrastination, intrinsic motivation, and SRL. Table 3 presents their respective means, standard deviations, and bivariate Pearson correlations. The results revealed significant correlations between all variables of interest. Active procrastination positively correlated with intrinsic motivation ($r = .394$, $p < .01$) and SRL ($r = .298$, $p < .01$), whereas it showed a strong negative link to passive procrastination ($r = –.710$, $p < .01$). Passive procrastination correlated negatively and moderately with both intrinsic motivation ($r = –.386$, $p < .01$) and SRL ($r = –.396$, $p < .01$). In addition, intrinsic motivation and SRL positively correlated ($r = .422$, $p < .01$).

Table 3

Means, Standard Deviations, and Pearson Correlations among Study Variables

Variable	*M*	*SD*	1	2	3	4
1. Active Procrastination	3.49	0.92	—			
2. Passive Procrastination	2.98	1.04	−.710**	—		
3. Intrinsic Motivation	3.02	1.10	.394**	−.386**	—	
4. SRL	3.07	0.87	.298**	−.396**	.422**	—

Note. $N = 1527$.

** $p < .01$.

Assumption Testing for Parametric Analyses

To assess whether the data met the assumptions for parametric testing, normality was examined for all relevant study variables using the Shapiro-Wilk test. Results indicated significant deviations from normality for all scales (e.g., intrinsic motivation: $W(1527) = 0.97$, $p < .001$). However, given the large sample size ($N = 1527$) and the resulting high sensitivity to minor deviations, skewness and kurtosis were also inspected. All four variables showed acceptable values within the recommended range (skewness and kurtosis between -1 and +1), suggesting approximately normal distributions, which was further supported by visual inspections of histograms and Q-Q plots. Consequently, parametric procedures (e.g., ANOVA, Pearson correlations) were deemed appropriate for hypothesis testing.

Hypothesis Testing: Correlational Analyses

Building on the descriptive results presented before, the hypothesized relationships between the main study variables were interpreted through bivariate Pearson correlations.

Indicating that higher levels of active procrastination are associated with lower levels of passive procrastination, the very strong negative relationship detected between active and passive procrastination ($r = -.710$, $p < .01$) corroborated Hypothesis 1 (*There is a negative correlation between active and passive procrastination*). Hypothesis 4, positing that *there is a positive relationship between active procrastination and SRL*, was equally supported by these findings to a moderate extent ($r = .298$, $p < .01$). Likewise, the moderate negative correlation between passive procrastination and SRL ($r = -.396$, $p < .01$) in the present sample was consistent with Hypothesis 5, which claimed that *there is a negative relationship between passive procrastination and SRL*.

Hypothesis Testing: Group Comparison

To explore the potential group differences suggested by the remaining two hypotheses, the sample was divided into the three subgroups of active, passive, and non-procrastinators based on their values on the APS and the UPS as described by the classification procedure above.

One-way ANOVA analyses were applied for testing Hypothesis 2 (*Intrinsic motivation is higher in non-procrastinators than in active and passive procrastinators*) and Hypothesis 3 (*Active and passive procrastinators do not differ in terms of intrinsic motivation*). They revealed a significant difference in both intrinsic motivation ($F(2, 1523) = 112.63$, $p < .001$, $\eta^2 = .13$) and SRL ($F(2, 1523) = 72.15$, $p < .001$, $\eta^2 = .09$) among the three groups of active, passive and non-procrastinators. According to interpretation guidelines for η^2 (Cohen, 1988), the effect size for intrinsic motivation approaches a large effect, while the effect size for SRL is considered moderate. These values suggest that group affiliation accounts for a meaningful proportion of variance in both variables.

Levene's test for equality of variances indicated that the assumption of homogeneity of variances was violated for both SRL ($F(2, 1523) = 5.27$, $p = .005$) and intrinsic motivation ($F(2, 1523) = 4.33$, $p = .013$). Consequently, post hoc comparisons were conducted using the Games-Howell test, which does not assume equal variances or group sizes. All mean differences of both variables between the three groups were statistically significant at $p < .001$. Table 4 portrays the results of descriptive analyses with the means and standard deviations of the studied variables by procrastination type.

Table 4

Descriptive Statistics for Intrinsic Motivation and SRL by Procrastination Type

Group	N	Intrinsic motivation			SRL		
		M	*(SD)*	*SE*	*M*	*(SD)*	*SE*
Active procrastinators	239	3.61	(1.15)	0.07	3.44	(0.94)	0.06
Passive procrastinators	272	2.27	(0.96)	0.06	2.58	(0.85)	0.05
Non- procrastinators	1015	3.09	(1.02)	0.03	3.11	(0.80)	0.03

Note. Intrinsic motivation and SRL were measured on a 5-point Likert scale from 1 to 5.

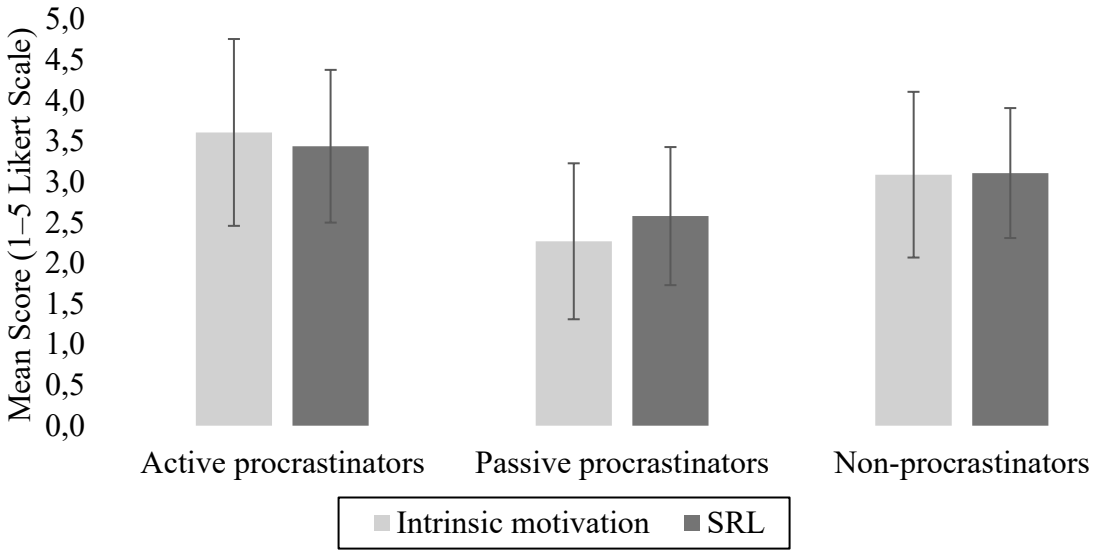
Pair-wise comparisons disclosed that active procrastinators displayed a significantly higher level of intrinsic motivation ($M = 3.61$, $SD = 1.15$) than both passive ($M = 2.27$, $SD = 0.96$) and non-procrastinators ($M = 3.09$, $SD = 1.02$). This result contradicts Hypothesis 2, claiming that *intrinsic motivation is higher in non-procrastinators than in active and passive procrastinators*.

The significant mean difference in intrinsic motivation between active and passive procrastinators (M difference = 1.34, 95% CI [1.11, 1.56], $p < .001$) contrasts with Hypothesis 3, which assumed that *active and passive procrastinators do not differ in terms of intrinsic motivation*. Notably, the relatively high standard deviation for intrinsic motivation among active procrastinators ($SD = 1.15$) indicates substantial variability in terms of their motivational drive. For SRL, active procrastinators ($M = 3.44$, $SD = 0.94$) equally showed values significantly higher than those of passive ($M = 2.58$, $SD = 0.85$) and non-procrastinators ($M = 3.11$, $SD = 0.80$) in pair-wise comparisons.

Figure 1 illustrates the detected distinctions in intrinsic motivation and SRL among active, passive, and non-procrastinators. Additional relevant SPSS outputs of statistical procedures that have been applied and mentioned can be found in Appendix B.

Figure 1

Mean Scores of Intrinsic Motivation and SRL by Procrastination Type



Note. Error bars represent standard deviations.

Post Hoc Power Analysis

To demonstrate the robustness of the significant findings, a post hoc power analysis was conducted using G*Power (Faul et al., 2007) for sensitivity assessment of the one-way ANOVA. Based on $\alpha = .05$ and a total sample size of $N = 1526$ (approximated using the harmonic mean $N = 339.14$ due to unequal group sizes), the analysis indicated that the achieved power amounted to 1.00 for both intrinsic motivation ($\eta^2 = .13$, $f = .38$) and SRL ($\eta^2 = .09$, $f = .31$), which indicates a very high probability of discovering the observed effects.

Discussion

The goal of this thesis was to disentangle differences and commonalities between active and passive procrastination with regard to their perceived intrinsic motivation and SRL use. More specifically, it was hypothesized that both types of procrastinators would report the same low motivational drive for engaging with their academic tasks, preventing them from starting and completing those in a timely, uninterrupted manner. A decisive difference, however, was assumed to lie in the proficient application of self-regulation cognitions and strategies among active procrastinators, which would enable them to structure and steer their deferred working process towards reaching a satisfying outcome just in time.

The strong negative correlation between active and passive procrastinators posited by Hypothesis 1, as an underlying premise of all remaining claims, was supported by the current dataset. This is in line with previous findings (e.g., Chu & Choi, 2005; Seo, 2013), and further corroborates the argument that the two types of procrastination constitute separate constructs that mutually exclude each other while sharing the common feature of time delay. However, the negative association found in this study does by no means negate the possibility that active procrastination does not entail procrastination but rather a form of purposeful delay chosen strategically for effective time management, as claimed by various scholars (e.g., Chowdhury & Pychyl, 2018; Corkin et al., 2011; Pinxten et al., 2019).

Hypothesis 2 suggested reports of higher intrinsic motivation in non-procrastinators than in active and passive procrastinators, while Hypothesis 3 claimed no difference between active and passive procrastinators in terms of intrinsic motivation. Contrary to expectations, however, active procrastinators scored highest in intrinsic motivation, while passive procrastinators displayed the lowest values. Non-procrastinators showed levels higher than passive and lower than active procrastinators. The findings of particularly high intrinsic motivation of active procrastinators contradict previous research applying a SRL perspective that found no significant difference in intrinsic motivation among the three groups, with active procrastinators even scoring the lowest (Cao, 2012b). On the other hand, there has been some evidence for a connection between the functional, active type of procrastination and more autonomous forms of motivation (Seo, 2013). According to SDT (Deci & Ryan, 1985), competence is indeed among the basic psychological needs that foster self-motivation once satisfied. The elevated intrinsic motivation detected in active procrastinators may thus be explained by their perceived competence gained by successfully completing tasks in time. This interpretation is corroborated by findings from related research within the same project,

showing that students describing themselves as competent displayed higher intrinsic motivation than those with less perceived competence (Pelikan et al., 2021).

An alternative potential explanation is that active procrastinators might experience a particularly high degree of intrinsic motivation once they have started their tasks shortly before the deadline thanks to the challenging and motivating effect that time pressure exerts on them (Chu & Choi, 2005). The question why active procrastinators do not tackle tasks early on if they do enjoy engaging in them might be answered by the fact that it is precisely this "thrill" that makes focused work possible and enjoyable for them. In turn, such temporary boost of intrinsic motivation might support students in minimizing additional procrastination behavior (Chen et al., 2024). This is in line with the claim that active procrastination coincides with arousal delay, which is marked by an internal need for thrill and excitement as a motivational force triggered by putting off work to the last moment (Chowdhury & Pychyl, 2018). Active procrastination may additionally "unlock" an incubation period for engaging in creative thoughts and cultivating innovative solutions through positive time stress (Bai et al., 2024; Liu et al., 2017). Consequently, active procrastinators may enjoy a task only in relation to the temporal dimension, if they can sustain a flow-like momentum for a shortened period of intensive, concentrated work thanks to time pressure and the prospect of an approaching finish line. Indeed, it was found that procrastination is associated with a heightened probability to experience flow among students (Seo, 2011). However, the respective study did neither differentiate between active and passive procrastination nor consider the role of other aspects of the learning process, which does not permit a nuanced comparison and might justify why no relation to academic achievement was identified.

Yet another possible explanation for the strong intrinsic motivation detected in active procrastinators might be linked to their high SRL values equally detected in this study. According to the applied model (Zimmerman, 2000), SRL often comes with the adoption of hierarchical process goals that are iteratively achieved, thereby progressively yielding satisfaction and intrinsic motivation to continue independent of reaching the superordinate outcome goal. Hence, self-regulatory processes applied to recognize and acknowledge such progress, like self-monitoring, and their resulting impact on self-beliefs might provide motivation instead of or more than the task as such (Zimmerman, 2002). Accordingly, it has been found that self-efficacy, as one of the central markers of SRL, plays a significant role in predicting intrinsic learning motivation (Chen et al., 2024). Moreover, the corresponding correlation between intrinsic motivation and SRL found in this study is in line with previous

research suggesting that intrinsic motivation is strongly linked to SRL indicators in online settings (Luo et al., 2021), and that increasing SRL through respective training also leads to heightened motivational measures (Theobald, 2021). On a related note, it is worth reiterating that both intrinsic motivation and SRL are predicted by the satisfaction of the basic psychological needs for competence, relatedness, and autonomy (e.g., Shi et al., 2024; Soe et al., 2025).

Hypothesis 4 stated a positive relationship between active procrastination and SRL, which was corroborated by results in the present study. This corresponds to previous findings establishing a positive connection between SRL indicators and active procrastination (Corkin et al., 2011; Shi et al., 2024). It is also in line with the detected potential of motivational self-regulation to amend dysfunctional procrastinatory behaviors (Bäulke et al., 2019). High SRL reports in active procrastinators support the assumption that they compensate for the negative effects of dilatory tendencies by applying self-regulatory processes in time. On the other hand, this high display of SRL is in contrast to research that found active procrastinators to report the lowest academic self-efficacy among the three groups of active, passive, and non-procrastinators (Shaked & Altarac, 2023). Similarly, it contradicts earlier study results, where active and passive procrastinators stated significantly lower use of learning strategies than non-procrastinators in a student sample (Cao, 2012b). However, such findings may solely reflect a more nuanced interplay between one's confidence or subjective perception related to their academic abilities and the actual deployment of regulatory strategies. Active procrastinators' high SRL values, as detected in the present study, might signify their willpower and strategic foresight of knowing just when to start to achieve satisfying outcomes on time. Indeed, it might be their strong SRL that capacitates them to harvest the advantages of their dilatory behaviors in the first place. Additionally, if they can afford to postpone tasks in favor of more enjoyable activities without suffering negative consequences on their performance thanks to their effective strategy use and metacognition (Callan et al., 2019), they might encounter little incentive to reduce or modify their procrastination patterns (Hensley, 2016). Their success might rather fuel positive metacognitive beliefs about procrastination as such, which have been shown to propagate various manifestations of the behavior (Cao, 2012a; de Palo et al., 2017).

Hypothesis 5 posited a negative relationship between passive procrastination and SRL, which was equally supported by the current dataset. A lack of SRL indicators has been associated with passive procrastinators in prior research (e.g., Corkin et al., 2011), likely preventing them from reasonably managing their resources and workload. For instance,

deficiencies in time management seem to fuel the postponement of important decisions necessary for study progress (de Palo et al., 2017). As expected, passive procrastinators portrayed particularly low levels not only in SRL but also in intrinsic motivation, which matches a failure in getting work done and meeting deadlines commonly experienced by this group (Chu & Choi, 2005). Their low intrinsic motivation, which has been reported together with their poor strategy use before (Cao, 2012b), may further discourage any sustained focus, making it even harder to start and finish their tasks. Indeed, this is supported by prior research suggesting that a lack of internal drive can lead to stronger inclinations towards procrastinating (Tisocco & Liporace, 2023).

By investigating the role of SRL within the "vicious circle of procrastination" (Wäschle et al., 2014) among university students, however, the present study addresses a tangible point for practical intervention that might allow the overcoming of one's unique challenges in learning (Zimmerman, 2002). Indeed, SRL could be compared to a versatile toolbox that can be used and developed irrespective of individual learning differences, preferences, or challenges. This is what makes SRL interventions widely applicable in their invaluable capacity to tackle and improve important indicators of motivation and regulation in the learning process (Schmitz & Wiese, 2006). For instance, providing an SRL-stimulating learning environment and clear instructions that are accompanied by coaching helps students improve their use of self-regulatory processes, which in turn positively affects their learning outcomes (De Bruijn-Smolders et al., 2016).

Considering that procrastinators fail to dedicate their time in a way they intended to and often end up racing against deadlines, it is not a surprise that time management seems to act as a stronger predictor of procrastination than other SRL features within the learning process (Wolters et al., 2017). Therefore, training this specific area of SRL might represent a promising pathway for traditional procrastinators to escape the negative repercussions of their (passive) procrastination. For students suffering from the negative consequences of excessive procrastination, decreasing dilatory behaviors to a less severe extent would already be expected to positively affect their quality of life and reduce their risk of experiencing psychological issues (Rozental et al., 2022). Even if they might not stop indulging in procrastination, empowering them to meet deadlines with satisfactory outcomes might gradually enhance their beliefs in their own capabilities and allow them to eventually step into a "virtuous circle of self-efficacy" (Wäschle et al., 2014).

At last, there remains a semantic debate around the term of active procrastination to be addressed. If dysfunctionality characterizes procrastination and sets it apart from delay

that can occur in functional ways if applied strategically (Klingsieck, 2013), active procrastination might indeed represent an oxymoron and require a rebranding towards active or purposeful delay (Corkin et al., 2011; Pinxten et al., 2019). At the same time, looking at the items used to measure active procrastination, the APS seems to fall short on investigating the behavioral dimension of the construct. The "act of procrastination" as used in everyday language entails periodic attempts to start or continue working on a task that fail and often result in engaging in pleasant but meaningless activities instead (Pychyl et al., 2000). If active procrastinators consciously choose from the very beginning to postpone their tasks to a point in time closely ahead of the deadline, they never experience the ambiguous state between intended action and contended inaction (or distraction) that is conducive to immediate feelings of guilt or self-doubt (Pychyl et al., 2000). Calling somebody who would hence in no given moment state or perceive to currently procrastinate, i.e. putting something off to "tomorrow-land", a procrastinator might indeed be misleading (Chowdhury & Pychyl, 2018).

This observation also corresponds to an alternative interpretation of the study's detected high negative correlation between active and passive procrastination, stressing the behavioral differences among the two. Since active procrastinators have originally been claimed to engage in procrastination just like their passive peers (Chu & Choi, 2005), their actual learning behavior might need to be more closely considered by complementing respective items in used scales or by including alternative methods, like learning diaries, with higher ecological validity. Hence, even if procrastination always entails a delay, a delay might not always correspond to procrastination (e.g., Pinxten et al., 2019). Nevertheless, considering similar timing patterns and measures associated with both active and passive procrastination, it might remain appropriate to embed and contrast them within a shared body of research and scientific discourse around the overarching "brand" of procrastination.

Limitations

Several limitations of the present research that are potentially affecting its implications should be addressed. Generalizability of the presented findings is hampered by the fact that the sample consisted mostly of female participants, and exclusively of tertiary education students. Just like in many comparable studies, data has additionally been self-reported, which comes with the risk of common method bias as well as social desirability bias. In future research, a more diverse sample selection as well as more objective records collected from peers, parents, or educators might prevent such limitations and increase the validity of the findings. Another promising approach might be the application of standardized

diaries combined with time-series analyses, which has been successfully applied to track daily learning and evaluate SRL interventions (Schmitz & Wiese, 2006).

Even more critical in this context is a potential self-selection bias, which might have significantly affected the sample composition. Since participation in the study was voluntary, it is plausible that many of those prone to procrastination might not have been motivated or likely to initiate or complete the survey if they, by nature, struggle to complete their actual obligations in the first place. This would also explain why almost two thirds of the student sample were assigned to the non-procrastinator subgroup, even though procrastination is highly prevalent among students (e.g., Steel, 2007). This unexpected imbalance hints at a severe underrepresentation of those most affected by procrastination, which hampers generalizability of the findings and representativeness of the sample. One measure to counteract this limitation in future research could be to embed participation into course structures or link it to academic incentives, like credit or attendance requirements.

Importantly, the cross-sectional design prohibits conclusive interpretations regarding the causality and its direction among the detected connections. An alternative study design allowing to approximate causality claims might include measurement points before and after an SRL training intervention to investigate whether former passive procrastinators might be able to "evolve" into active procrastinators thanks to their heightened SRL skills, compared to those in a control group who have not undergone education in this regard.

Another methodological limitation lies in the incomplete use of the APS in the questionnaire due to length constraints. This resulted in the representation of only two of the four factors of active procrastination being assessed, which reduces the comprehensiveness and accuracy of the construct measurement. By omitting half of the defining dimensions of a multifaceted concept, the study may have failed to fully capture the complexity of active procrastination, potentially leading to an underestimation or mischaracterization of procrastination styles prevalent in the participant sample. Moreover, the reduced scale may compromise the internal consistency and construct validity of the APS in this context, hence weakening the reliability of conclusions drawn about active procrastinators.

Finally, it cannot be overstated that the findings of this study emerged within the context of the COVID-19 pandemic with its once-in-a-century restraints and challenges surrounding private, public, and academic life. Even though these conditions were not explicitly addressed by any of the present hypotheses, it is possible that they have affected the responses of participants in one way or another. The scope and direction of the potentially

confounding impact of the exceptional circumstances on findings in this work remain unknown, which is why they should be treated with caution.

Conclusions and Future Directions

The present study aims to deepen the understanding of procrastination by distinguishing between its active and passive forms and examining their respective relationships with intrinsic motivation and SRL. Drawing on a large sample of university students in Austria, the findings provide empirical support for the conceptual distinction between active and passive procrastination, as evidenced by a strong negative correlation between the two. This differentiation is further substantiated by divergent associations with variables of motivation and self-regulation.

Consistent with the proposed hypotheses, SRL was found to relate positively to active and negatively to passive procrastination. Contrary to initial expectations, active procrastinators not only demonstrated the most extensive use of SRL compared to passive procrastinators and non-procrastinators but also reported the highest levels of intrinsic motivation among these three groups. These findings suggest that active procrastinators may be capable of leveraging time pressure as a motivational resource, while successfully engaging in tasks closer to deadlines due to their effective use of SRL strategies. In contrast, passive procrastinators appear to lack both the motivational and regulatory resources necessary for avoiding the negative consequences of their irrational delay, reinforcing the view of passive procrastination as a maladaptive behavioral pattern.

The results raise important questions regarding the causality and directionality of the observed relationships. Specifically, it remains unclear whether high intrinsic motivation can be regarded a consequence of active procrastination or whether it emerges independently, possibly through the application of inherently rewarding SRL processes. Addressing this ambiguity will require future research employing longitudinal or experimental designs to disentangle causal pathways and temporal dynamics. Moreover, real-time data collection and the integration of qualitative data could provide valuable insights into how dilatory behaviors and motivational states fluctuate across different phases of task engagement within or beyond the applied SRL model.

From a practical perspective, the findings highlight the potential of SRL training as an intervention strategy. By equipping students with effective self-regulatory tools, educational programs may not only reduce the prevalence of passive procrastination but also enable students to adopt more adaptive forms of delay when appropriate. Additionally, providing learners with a stimulating learning environment that satisfies the basic psychological needs

might not only enhance their intrinsic motivation, but inspire them to develop and apply SRL strategies and competencies by themselves. Therefore, educators and learning designers are presented with several relatively low-threshold opportunities to enhance their students' SRL, making a deeper comprehension of its potential role in mitigating or reversing the negative effects of (passive) procrastination even more critical.

In conclusion, this study contributes to a more nuanced understanding of procrastination by demonstrating that the interplay between motivation and self-regulation might determine whether it serves as a functional or dysfunctional behavior. Future research is set out to continue exploring these relations and their underlying dynamics, with the aim of informing not only theoretical models but also practical interventions that support students in maintaining their well-being and achieving academic success.

References

Abbasi, I. S., & Alghamdi, N. G. (2015). The Prevalence, Predictors, Causes, Treatment, and Implications of Procrastination Behaviors in General, Academic, and Work Setting. *International Journal of Psychological Studies*, *7*(1), p59. https://doi.org/10.5539/ijps.v7n1p59

Ackerman, D. S., & Gross, B. L. (2005). My Instructor Made Me Do It: Task Characteristics of Procrastination. *Journal of Marketing Education*, *27*(1), 5–13. https://doi.org/10.1177/0273475304273842

Bai, H., Li, X., Wang, X., Tong, W., Li, Y., & Hu, W. (2024). Active procrastination incubates more creative thinking: The sequential mediating effect of personal mastery and creative self-concept. *Creativity Research Journal*, *36*(4), 675–687. https://doi.org/10.1080/10400419.2023.2171721

Bäulke, L., Daumiller, M., & Dresel, M. (2019). How Conscientiousness and Neuroticism Affect Academic Procrastination: Mediated by Motivational Regulation? *Zeitschrift Für Entwicklungspsychologie Und Pädagogische Psychologie*, *51*(4), 216–227. https://doi.org/10.1026/0049-8637/a000225

Bork-Hüffer, T., Kulcar, V., Brielmair, F., Markl, A., Immer, D. M., Juen, B., Walter, M. H., & Kaufmann, K. (2021). University Students' Perception, Evaluation, and Spaces of Distance Learning during the COVID-19 Pandemic in Austria: What Can We Learn for Post-Pandemic Educational Futures? *Sustainability*, *13*(14), 7595. https://doi.org/10.3390/su13147595

Callan, G. L., Link to external site, this link will open in a new window, & Cleary, T. J. (2019). Examining cyclical phase relations and predictive influences of self-regulated learning processes on mathematics task performance. *Metacognition and Learning*, *14*(1), 43–63. https://doi.org/10.1007/s11409-019-09191-x

Cao, L. (2012a). Differences in procrastination and motivation between undergraduate and graduate students. *Journal of the Scholarship of Teaching and Learning*, *12*(2), 39–64.

Cao, L. (2012b). Examining 'active' procrastination from a self-regulated learning perspective. *Educational Psychology*, *32*(4), 515–545. https://doi.org/10.1080/01443410.2012.663722

Chen, X., Wu, M., Dong, G., Cui, L., Qu, B., & Zhu, Y. (2024). Social support and academic procrastination in health professions students: The serial mediating effect of intrinsic

learning motivation and academic self-efficacy. *Advances in Health Sciences Education*. https://doi.org/10.1007/s10459-024-10394-4

Choi, J. N., & Moran, S. V. (2009). Why Not Procrastinate? Development and Validation of a New Active Procrastination Scale. *The Journal of Social Psychology*, *149*(2), 195–212. https://doi.org/10.3200/SOCP.149.2.195-212

Chowdhury, S. F., & Pychyl, T. A. (2018). A critique of the construct validity of active procrastination. *Personality and Individual Differences*, *120*, 7–12. https://doi.org/10.1016/j.paid.2017.08.016

Chu, A. H. C., & Choi, J. N. (2005). Rethinking Procrastination: Positive Effects of "Active" Procrastination Behavior on Attitudes and Performance. *The Journal of Social Psychology*, *145*(3), 245–264. https://doi.org/10.3200/SOCP.145.3.245-264

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed). L. Erlbaum Associates.

Corkin, D. M., Yu, S. L., & Lindt, S. F. (2011). Comparing active delay and procrastination from a self-regulated learning perspective. *Learning and Individual Differences*, *21*(5), 602–606. https://doi.org/10.1016/j.lindif.2011.07.005

Coutinho, M. V. C., Menon, A., Ahmed, R. H., & Fredricks-Lowman, I. (2022). The association of perfectionism and active procrastination in college students. *Social Behavior & Personality: An International Journal*, *50*(3), 1–8. https://doi.org/10.2224/sbp.10611

De Bruijn-Smolders, M., Timmers, C. F., Gawke, J. C. L., Schoonman, W., & Born, M. Ph. (2016). Effective self-regulatory processes in higher education: Research findings and future directions. A systematic review. *Studies in Higher Education*, *41*(1), 139–158. https://doi.org/10.1080/03075079.2014.915302

de Palo, V., Monacis, L., Miceli, S., Sinatra, M., & Di Nuovo, S. (2017). Decisional Procrastination in Academic Settings: The Role of Metacognitions and Learning Strategies. *Frontiers in Psychology*, *8*. https://doi.org/10.3389/fpsyg.2017.00973

Deci, E. L., & Ryan, R. M. (1985). *Intrinsic motivation and self-determination in human behavior*. Plenum press.

Elizondo, K., Valenzuela, R., Pestana, J. V., & Codina, N. (2024). Self-regulation and procrastination in college students: A tale of motivation, strategy, and perseverance. *Psychology in the Schools*, *61*(3), 887–902. https://doi.org/10.1002/pits.23088

Faul, F., Erdfelder, E., Lang, A.-G., & Buchner, A. (2007). G*Power 3: A flexible statistical power analysis program for the social, behavioral, and biomedical sciences. *Behavior Research Methods*, *39*(2), 175–191. https://doi.org/10.3758/bf03193146

Feraco, T., Resnati, D., Fregonese, D., Spoto, A., & Meneghetti, C. (2023). An integrated model of school students' academic achievement and life satisfaction. Linking soft skills, extracurricular activities, self-regulated learning, motivation, and emotions. *European Journal of Psychology of Education*, *38*(1), 109–130. https://doi.org/10.1007/s10212-022-00601-4

Fernández Da Lama, R. G., & Brenlla, M. E. (2023). Past-Positive time perspective predicts academic achievement via motivation, and procrastination might not be as bad as it seems. *Journal of Applied Research in Higher Education*, *15*(2), 392–410. https://doi.org/10.1108/JARHE-11-2021-0413

Fernie, B. A., Bharucha, Z., Nikčević, A. V., & Spada, M. M. (2017). The Unintentional Procrastination Scale. *Journal of Rational-Emotive & Cognitive-Behavior Therapy*, *35*(2), 136–149. https://doi.org/10.1007/s10942-016-0247-x

Gao, K., Zhang, R., Xu, T., Zhou, F., & Feng, T. (2021). The effect of conscientiousness on procrastination: The interaction between the self-control and motivation neural pathways. *Human Brain Mapping*, *42*(6), 1829–1844. https://doi.org/10.1002/hbm.25333

Gottfried, A. E., Fleming, J. S., & Gottfried, A. W. (2001). Continuity of academic intrinsic motivation from childhood through late adolescence: A longitudinal study. *Journal of Educational Psychology*, *93*(1), 3–13. https://doi.org/10.1037/0022-0663.93.1.3

Grunschel, C., Patrzek, J., & Fries, S. (2013). Exploring reasons and consequences of academic procrastination: An interview study. *European Journal of Psychology of Education*, *28*(3), 841–861.

Habelrih, E. A., & Hicks, R. E. (2015). Psychological Well-Being and Its Relationships with Active and Passive Procrastination. *International Journal of Psychological Studies*, *7*(3), p25. https://doi.org/10.5539/ijps.v7n3p25

Hensley, L. C. (2014). Reconsidering active procrastination: Relations to motivation and achievement in college anatomy. *Learning and Individual Differences*, *36*, 157–164. https://doi.org/10.1016/j.lindif.2014.10.012

Hensley, L. C. (2016). The Draws and Drawbacks of College Students' Active Procrastination. *Journal of College Student Development*, *57*(4), 465–471. https://doi.org/10.1353/csd.2016.0045

Holzer, J., Lüftenegger, M., Käser, U., Korlat, S., Pelikan, E., Schultze-Krumbholz, A., Spiel, C., Wachs, S., & Schober, B. (2021). Students' basic needs and well-being during the COVID-19 pandemic: A two-country study of basic psychological need satisfaction, intrinsic learning motivation, positive emotion and the moderating role of self-regulated learning. *International Journal of Psychology*, *56*(6), 843–852. https://doi.org/10.1002/ijop.12763

Howard, J. L., Bureau, J., Guay, F., Chong, J. X. Y., & Ryan, R. M. (2021). Student Motivation and Associated Outcomes: A Meta-Analysis From Self-Determination Theory. *Perspectives on Psychological Science*, *16*(6), 1300–1323. https://doi.org/10.1177/1745691620966789

Hughes, S., & Adhikari, J. (2022). Time Wasters?: Active Procrastination and the Dark Tetrad. *Journal of Individual Differences*, *43*(2), 89–94. https://doi.org/10.1027/1614-0001/a000357

Kim, S., Fernandez, S., & Terrier, L. (2017). Procrastination, personality traits, and academic performance: When active and passive procrastination tell a different story. *Personality and Individual Differences*, *108*, 154–157. https://doi.org/10.1016/j.paid.2016.12.021

Klingsieck, K. B. (2013). Procrastination: When Good Things Don't Come to Those Who Wait. *European Psychologist*, *18*(1), 24–34. https://doi.org/10.1027/1016-9040/a000138

Klingsieck, K. B. (2018). Kurz und knapp – die Kurzskala des Fragebogens „Lernstrategien im Studium" (LIST). *Zeitschrift für Pädagogische Psychologie*, *32*(4), 249–259. https://doi.org/10.1024/1010-0652/a000230

Kooren, N. S., Van Nooijen, C., & Paas, F. (2024). The Influence of Active and Passive Procrastination on Academic Performance: A Meta-Analysis. *Education Sciences*, *14*(3), 323. https://doi.org/10.3390/educsci14030323

Kühnel, J., Bledow, R., & Kuonath, A. (2023). Overcoming Procrastination: Time Pressure and Positive Affect as Compensatory Routes to Action. *Journal of Business and Psychology*, *38*(4), 803–819. https://doi.org/10.1007/s10869-022-09817-z

Liu, W., Pan, Y., Luo, X., Wang, L., & Pang, W. (2017). Active procrastination and creative ideation: The mediating role of creative self-efficacy. *Personality and Individual Differences*, *119*, 227–229. https://doi.org/10.1016/j.paid.2017.07.033

Lu, D., He, Y., & Tan, Y. (2022). Gender, Socioeconomic Status, Cultural Differences, Education, Family Size and Procrastination: A Sociodemographic Meta-Analysis. *Frontiers in Psychology*, *12*. https://doi.org/10.3389/fpsyg.2021.719425

Luo, Y., Lin, J., & Yang, Y. (2021). Students' motivation and continued intention with online self-regulated learning: A self-determination theory perspective. *Zeitschrift Für Erziehungswissenschaft*, *24*(6), 1379–1399. https://doi.org/10.1007/s11618-021-01042-3

Meng, X., Pan, Y., & Li, C. (2024). Portraits of procrastinators: A meta-analysis of personality and procrastination. *Personality and Individual Differences*, *218*, 112490. https://doi.org/10.1016/j.paid.2023.112490

Moller, A. C., & Sheldon, K. M. (2020). Athletic scholarships are negatively associated with intrinsic motivation for sports, even decades later: Evidence for long-term undermining. *Motivation Science*, *6*(1), 43–48. https://doi.org/10.1037/mot0000133

Netzer Turgeman, R., & Pollak, Y. (2023). Using the temporal motivation theory to explain the relation between ADHD and procrastination. *Australian Psychologist*, *58*(6), 448–456. https://doi.org/10.1080/00050067.2023.2218540

Nguyen, V. T. T., & Chen, H.-L. (2023). Examining impacts of information system success and perceived stress on students' self-regulated learning mediated by intrinsic motivation in online learning environments: Second-order structural equation modelling analyses. *Education and Information Technologies*, *28*(10), 12945–12968. https://doi.org/10.1007/s10639-023-11685-w

Panadero, E. (2017). A Review of Self-regulated Learning: Six Models and Four Directions for Research. *Frontiers in Psychology*, *8*, 422. https://doi.org/10.3389/fpsyg.2017.00422

Panadero, E., & Alonso-Tapia, J. (2014). How do students self-regulate? Review of Zimmerman‟s cyclical model of self-regulated learning. *Anales de Psicología*, *30*(2), 450–462. https://doi.org/10.6018/analesps.30.2.167221

Pelikan, E. R., Lüftenegger, M., Holzer, J., Korlat, S., Spiel, C., & Schober, B. (2021). Learning during COVID-19: The role of self-regulated learning, motivation, and procrastination for perceived competence. *Zeitschrift Für Erziehungswissenschaft*, *24*(2), 393–418. https://doi.org/10.1007/s11618-021-01002-x

Pérez-Jorge, D., Hernández-Henríquez, A. C., Melwani-Sadhwani, R., & Gallo-Mendoza, A. F. (2024). Tomorrow Never Comes: The Risks of Procrastination for Adolescent

Health. *European Journal of Investigation in Health, Psychology and Education*, *14*(8), 2140–2156. https://doi.org/10.3390/ejihpe14080143

Pinxten, M., De Laet, T., Van Soom, C., Peeters, C., & Langie, G. (2019). Purposeful delay and academic achievement. A critical review of the Active Procrastination Scale. *Learning and Individual Differences*, *73*, 42–51. https://doi.org/10.1016/j.lindif.2019.04.010

Pychyl, T. A., Lee, J. M., Thibodeau, R., & Blunt, A. (2000). Five Days of Emotion: An Experience Sampling Study of Undergraduate Student Procrastination. *Journal of Social Behavior and Personality*, *15*(5), 239–254.

Rabin, E., Henderikx, M., Yoram, M. K., & Kalz, M. (2020). What are the barriers to learners' satisfaction in MOOCs and what predicts them? The role of age, intention, self-regulation, self-efficacy and motivation. *Australasian Journal of Educational Technology*, *36*(3), Article 3. https://doi.org/10.14742/ajet.5919

Rapanta, C., Botturi, L., Goodyear, P., Guàrdia, L., & Koole, M. (2021). Balancing Technology, Pedagogy and the New Normal: Post-pandemic Challenges for Higher Education. *Postdigital Science and Education*, *3*(3), 715–742. https://doi.org/10.1007/s42438-021-00249-1

Rozental, A., Forsström, D., Hussoon, A., & Klingsieck, K. B. (2022). Procrastination Among University Students: Differentiating Severe Cases in Need of Support From Less Severe Cases. *Frontiers in Psychology*, *13*, 783570. https://doi.org/10.3389/fpsyg.2022.783570

Ryan, R. M., & Deci, E. L. (2000). Self-Determination Theory and the Facilitation of Intrinsic Motivation, Social Development, and Well-Being. *American Psychologist*, 11.

Schmitz, B., & Wiese, B. S. (2006). New perspectives for the evaluation of training sessions in self-regulated learning: Time-series analyses of diary data. *Contemporary Educational Psychology*, *31*(1), 64–96. https://doi.org/10.1016/j.cedpsych.2005.02.002

Schraw, G., Crippen, K. J., & Hartley, K. (2006). Promoting Self-Regulation in Science Education: Metacognition as Part of a Broader Perspective on Learning. *Research in Science Education*, *36*(1–2), 111–139. https://doi.org/10.1007/s11165-005-3917-8

Seo, E. H. (2011). The Relationships Among Procrastination, Flow, and Academic Achievement. *Social Behavior and Personality*, *39*(2), 209–217. https://doi.org/10.2224/sbp.2011.39.2.209

Seo, E. H. (2013). A Comparison of Active and Passive Procrastination in Relation to Academic Motivation. *Social Behavior and Personality*, *41*(5), 777–786. https://doi-org.uaccess.univie.ac.at/10.2224/sbp.2013.41.5.777

Shaked, L., & Altarac, H. (2023). The possible contribution of procrastination and perception of self-efficacy to academic achievement. *Journal of Further and Higher Education*, *47*(2), 197–214. https://doi.org/10.1080/0309877X.2022.2102414

Shang, Z., Cao, Y., Cui, Z., & Zuo, C. (2023). Positive delay? The influence of perceived stress on active procrastination. *South African Journal of Business Management*, *54*(1). https://doi.org/10.4102/sajbm.v54i1.3988

Shi, Y., Lin, Y., & Yu, Z. (2024). The effects of need satisfaction on active academic procrastination and the mediating roles of academic buoyancy and self-regulated learning. *Current Psychology*, *43*(24), 21096–21109. https://doi.org/10.1007/s12144-024-05916-7

Sirois, F., & Giguère, B. (2018). Giving in when feeling less good: Procrastination, action control, and social temptations. *British Journal of Social Psychology*, *57*(2), 404–427. https://doi.org/10.1111/bjso.12243

Sirois, F., Melia-Gordon, M. L., & Pychyl, T. A. (2003). "I'll look after my health, later": An investigation of procrastination and health. *Personality and Individual Differences*, *35*(5), 1167–1184. https://doi.org/10.1016/S0191-8869(02)00326-4

Sirois, F., & Pychyl, T. (2013). Procrastination and the Priority of Short-Term Mood Regulation: Consequences for Future Self. *Social and Personality Psychology Compass*, *7*(2), 115–127. https://doi.org/10.1111/spc3.12011

Soe, H. Y., Zhang, D., Fu, D., & Cui, Y. (2025). How an autonomy-supportive learning environment influences students' achievements in science and mathematics. *Social Psychology of Education*, *28*(1), 1–35. https://doi.org/10.1007/s11218-024-09970-8

Steel, P. (2007). The nature of procrastination: A meta-analytic and theoretical review of quintessential self-regulatory failure. *Psychological Bulletin*, *133*(1), 65–94. https://doi.org/10.1037/0033-2909.133.1.65

Suárez-Perdomo, A., Ruiz-Alfonso, Z., & Garcés-Delgado, Y. (2022). Profiles of undergraduates' networks addiction: Difference in academic procrastination and performance. *Computers & Education*, *181*, 104459. https://doi.org/10.1016/j.compedu.2022.104459

Svartdal, F., Dahl, T. I., Gamst-Klaussen, T., Koppenborg, M., & Klingsieck, K. B. (2020). How Study Environments Foster Academic Procrastination: Overview and

Recommendations. *Frontiers in Psychology*, *11*, 540910. https://doi.org/10.3389/fpsyg.2020.540910

Theobald, M. (2021). Self-regulated learning training programs enhance university students' academic performance, self-regulated learning strategies, and motivation: A meta-analysis. *Contemporary Educational Psychology*, *66*, 101976. https://doi.org/10.1016/j.cedpsych.2021.101976

Theobald, M., Bellhäuser, H., & Nückles, M. (2019). Inside Self-Regulated Learning: Measuring and Predicting Intraindividual and Interindividual Variation in Self-Regulated Learning Over Time. *Zeitschrift Für Entwicklungspsychologie Und Pädagogische Psychologie*, *51*(4), 183–189. https://doi.org/10.1026/0049-8637/a000224

Thomas, A. E., Müller, F. H., & Bieg, S. (2018). Entwicklung und Validierung der Skalen zur motivationalen Regulation beim Lernen im Studium (SMR-LS). *Diagnostica*, *64*(3), 145–155. https://doi.org/10.1026/0012-1924/a000201

Tisocco, F., & Liporace, M. F. (2023). Structural Relationships Between Procrastination, Academic Motivation, and Academic Achievement Within University Students: A Self-determination Theory Approach. *Innovative Higher Education*, *48*(2), 351–369. https://doi.org/10.1007/s10755-022-09622-9

Wäschle, K., Allgaier, A., Lachner, A., Fink, S., & Nückles, M. (2014). Procrastination and self-efficacy: Tracing vicious and virtuous circles in self-regulated learning. *Learning and Instruction*, *29*, 103–114. https://doi.org/10.1016/j.learninstruc.2013.09.005

Wieland, L. M., Hoppe, J. D., Wolgast, A., & Ebner-Priemer, U. W. (2022). Task ambiguity and academic procrastination: An experience sampling approach. *Learning and Instruction*, *81*, 101595. https://doi.org/10.1016/j.learninstruc.2022.101595

Wild, K.-P., & Schiefele, U. (1994). Lernstrategien im Studium: Ergebnisse zur Faktorenstruktur und Reliabilität eines neuen Fragebogens. [Learning strategies of university students: Factor structure and reliability of a new questionnaire.]. *Zeitschrift Für Differentielle Und Diagnostische Psychologie*, *15*(4), 185–200.

Wolters, C. A., Won, S., & Hussain, M. (2017). Examining the relations of time management and procrastination within a model of self-regulated learning. *Metacognition and Learning*, *12*(3), 381–399. https://doi.org/10.1007/s11409-017-9174-1

Yang, Y.-F., Lee, I.-C., Tseng, C. C., & Lai, S.-C. (2024). Developing students' self-regulated learning strategies to facilitate vocabulary development in a digital game-

based learning environment. *Journal of Research on Technology in Education*, 1–20. https://doi.org/10.1080/15391523.2024.2338092

Zhao, J., Meng, G., Sun, Y., Xu, Y., Geng, J., & Han, L. (2021). The relationship between self-control and procrastination based on the self-regulation theory perspective: The moderated mediation model. *Current Psychology*, *40*(10), 5076–5086. https://doi.org/10.1007/s12144-019-00442-3

Zhou, M., Lam, K. K. L., & Zhang, Y. (2022). Metacognition and Academic Procrastination: A Meta-Analytical Examination. *Journal of Rational - Emotive & Cognitive - Behavior Therapy*, *40*(2), 334–368. https://doi.org/10.1007/s10942-021-00415-1

Zimmerman, B. J. (2000). Attaining Self-Regulation. In *Handbook of Self-Regulation* (pp. 13–39). Elsevier. https://doi.org/10.1016/B978-012109890-2/50031-7

Zimmerman, B. J. (2002). Becoming a Self-Regulated Learner: An Overview. *Theory Into Practice*, *41*(2), 64–70. https://doi.org/10.1207/s15430421tip4102_2

Zimmerman, B. J. (2008). Investigating Self-Regulation and Motivation: Historical Background, Methodological Developments, and Future Prospects. *American Educational Research Journal*, *45*(1), 166–183. https://doi.org/10.3102/0002831207312909

Appendix A

Full Study Questionnaire (in German)

Fragebogen Masterarbeiten “Studieren unter COVID-19”

Soziodemografische Angaben

Zunächst bitten wir Sie um einige allgemeine Angaben zu Ihrer Person und Ihrem Studium.
Falls Sie mehrere Studienrichtungen belegen, beziehen Sie sich bei der Beantwortung bitte auf Ihr Hauptstudium.

Variablenname	**Item**	**Typ**	**Labels**
	Ihr Geschlecht:	Einfachauswahl	1 = weiblich 2 = männlich 3 = divers
	Ihr Alter:	freie Eingabe (ganze Zahlen)	
	An welcher Hochschule studieren Sie?	Mehrfachauswahl + offene Antwort	1 = Universität 2 = Fernuniversität 3 = Fachhochschule 4 = Fernfachhochschule 5 = Pädagogische Hochschule 6 = Andere
	Ist die Hochschule an der Sie studieren öffentlich oder privat?		1 = öffentlich 2 = privat
	In welcher Studienform befinden Sie sich?	Einfachauswahl	1 = Bachelorstudium 2 = Masterstudium 3 = Diplomstudium 4 = Doktorat 5 = Hochschullehrgang
	Welche Studienrichtung studieren Sie?	freie Eingabe	
	Im wievielten Semester (der angegebenen Studienform) befinden Sie sich derzeit?	Dropdown	1 = 0 2 = 1 3 = 2 4 = 3 5 = 4 6 = 5 7 = 6 8 = 7 9 = 8 10 = 9 11 = 10 und mehr

	Wie erfolgreich schätzen Sie sich in Ihrem bisherigen Studium ein?		1 = nicht erfolgreich bis 5 = sehr erfolgreich
	Wie wichtig ist es Ihnen, gute Noten zu bekommen?		1 = nicht wichtig 5 = sehr wichtig
	Sind Sie neben dem Studium berufstätig?	Einfachauswahl (Filterfrage)	1 = Nein, ich bin nicht berufstätig . 1 = Ja, ich arbeite neben dem Studium im Home-Office 2 = Ja, ich arbeite neben dem Studium (auch) außer Haus
	Wie viele Stunden pro Woche arbeiten Sie derzeit? ((bitte runden Sie auf ganze Zahlen)	freie Eingabe, eingeschränkt auf ganze Zahlen	
	Leben in Ihrem Haushalt betreuungspflichtige Kinder bzw. haben Sie andere Betreuungsverpflichtungen?		1 = ja 2 = nein
	Teilen Sie sich die Betreuungsverpflichtungen mit jemandem?	Einfachauswahl (Filterfrage)	1 = ja 2 = nein
	Wie sieht ihre derzeitige Wohnsituation aus? Ich lebe …		… alleine. … in einer Wohngemeinschaft. … mit meiner/meinem Lebenspartner/in. … bei meinen Eltern.
Situationsspezifische Items			
Digitale Lehr-Lern-Formen			
Variablenname	**Item**	**Typ**	**Labels**
Was sind Ihre Erfahrungen bezüglich der derzeit eingesetzten digitalen Lehr- und Lernformen?			
	Ich komme beim Studium mit den verwendeten digitalen Lehr- und Lernformen insgesamt gut zurecht.	Einfachauswahl	1 = Stimmt genau 2 = Stimmt ziemlich 3 = Stimmt etwas 4 = Stimmt eher nicht 5 = gar nicht
	Die meisten meiner Lehrenden kennen sich mit digitaler Lehre gut aus.		
	Ich fühle mich in der aktuellen Situation durch meine Lehrveranstaltungsleiter*innen gut unterstützt.		
	Die meisten meiner Lehrveranstaltungsleiter*innen halten regelmäßig Kontakt zu den Studierenden.		

	In welchem Ausmaß wünschen Sie sich auch zukünftig Online-Unterricht?	Schieberegler	0%-100%
	Warum? Könnten Sie das erläutern? Welche Vorteile oder Nachteile sehen Sie in der digitalen Lehre?	Offene Antwort	
Herausforderungen quantitative Fragen			
Variablenname	**Item**	**Typ**	**Labels**
Bei der derzeitigen Home-Learning Situation ist für mich besonders herausfordernd ...			
	... meinen Tag zu planen.	Einfachauswahl	1 = Stimmt genau 2 = Stimmt ziemlich 3 = Stimmt etwas 4 = Stimmt eher nicht 5 = gar nicht
	... dass ich so viel anderes erledigen muss.		
	... dass ich technische Einschränkungen habe (z.B. langsames Internet, keine angemessenen Arbeitsgeräte, ...)		
	... dass ich keinen Arbeitsplatz habe, an dem ich ungestört arbeiten kann.		
	... dass mich so viele Dinge ablenken.		
Institutionelles Vertrauen (angepasst auf Hochschulkontext)			
Variablenname	**Item**	**Typ**	**Labels**
Bitte geben Sie an, inwieweit die folgenden Aussagen auf Sie zutreffen.			
	Ich glaube, dass sich die Hochschule gut um mich kümmert.	Einfachauswahl	1 = Stimmt genau 2 = Stimmt ziemlich 3 = Stimmt etwas 4 = Stimmt eher nicht 5 = gar nicht
	Ich glaube, dass die Sicherheitsmaßnahmen an der Hochschule sicherstellen, dass ich mich nicht mit COVID-19 anstecke.		
	Die Lehrenden der Hochschule passen gut auf, dass ich nicht krank werde.		
	Ich mache mir keine Sorgen, dass mir an der Hochschule etwas passiert.		
	Wenn es neue Regeln für die Hochschule gibt (z.B., das Tragen von Masken im Unterricht), sagen mir meine Lehrenden bzw. die Hochschulleitung sofort Bescheid.		
	Ich bekomme an der Hochschule alle wichtigen Informationen zu COVID-19 Maßnahmen, Unterricht und Prüfungen.		
	Wenn etwas Wichtiges passiert, vertraue ich darauf, dass ich es von der Hochschule rechtzeitig erfahre.		

	Ich bin mir sicher, dass mir meine Lehrenden bzw. die Hochschulleitung alle wichtigen Entscheidungen zu Unterricht und Lehre mitteilen.		
Well-Being			
Positiver Affekt			
Variablenname	**Item**	**Typ**	**Labels**
Wie geht es Ihnen derzeit?			
	Ich fühle ich mich gut.	Einfachauswahl	1 = Stimmt genau 2 = Stimmt ziemlich 3 = Stimmt etwas 4 = Stimmt eher nicht 5 = gar nicht
	Ich fühle ich mich zuversichtlich.		
	Auch wenn es gerade schwierig ist, denke ich, dass alles gut wird.		
Engagement/Flow (EPOCH; Kern, Benson, Steinberg & Steinberg, 2015 dt. Übersetzung von Bürger et al., in Vorb.)			
Variablenname	**Item**	**Typ**	**Labels**
Denken Sie an die derzeitige Home-Learning Situation:			
	Wenn ich an schwierigen Aufgaben für das Studium arbeite, merke ich gar nicht wie die Zeit vergeht.	Einfachauswahl	1 = Stimmt genau 2 = Stimmt ziemlich 3 = Stimmt etwas 4 = Stimmt eher nicht 5 = gar nicht
	Wenn ich für das Studium arbeite, bin ich ganz vertieft.		
	Wenn ich etwas für das Studium mache, merke ich gar nicht, was um mich herum passiert.		
Perseverence (EPOCH; Kern, Benson, Steinberg & Steinberg, 2015 dt. Übersetzung von Bürger et al., in Vorb.)			
Variablenname	**Item**	**Typ**	**Labels**
	Wenn ich eine Aufgabe begonnen habe, bringe ich sie auch zu Ende.	Einfachauswahl	1 = Stimmt genau 2 = Stimmt ziemlich 3 = Stimmt etwas 4 = Stimmt eher nicht 5 = gar nicht
	Ich arbeite so lange an meinen Aufgaben, bis ich fertig bin.		
	Wenn ich mir vornehme, für das Studium zu lernen, mache ich das auch.		
SPANE (Scale of Positive and Negative Experience; Dienert et al., 2009)			
Variablenname	**Item**	**Typ**	**Labels**

Bitte denken Sie daran, was Sie in den vergangenen vier Wochen getan und erlebt haben. Geben Sie anschließend mithilfe der nachfolgenden Skala an, in welchem Maße Sie die unten angegebenen Gefühle erlebt haben. In den vergangenen vier Wochen…			
	… hatte ich positive Gefühle.	Einfachauswahl	1 = Nie oder sehr selten 2 = Selten 3 = Gelegentlich 4 = Oft 5 = Sehr oft oder immer
	… hatte ich negative Gefühle.		
	… hatte ich gute Gefühle.		
	… hatte ich schlechte Gefühle.		
	… hatte ich angenehme Gefühle.		
	… hatte ich unangenehme Gefühle.		
	… habe ich mich glücklich gefühlt		
	… habe ich mich traurig gefühlt.		
	… hatte ich Angst.		
	… war ich froh.		
	… war ich wütend.		
	… war ich zufrieden.		
Coping (SVF-KJ, Hampel et al., 2000)			
Variablenname	**Item**	**Typ**	**Labels**
Hier geht es darum, wie du mit Situationen umgehst, die dich unter Druck setzen! Wenn mich derzeit etwas an der Hochschule unter Druck setzt…			
Emotionsregulierende Bewältigung			
	... sage ich mir: So schlimm ist das doch gar nicht!	Einfachauswahl	1 = auf keinen Fall 2 = eher nein 3 = vielleicht 4 = eher ja 5 = auf jeden Fall
	... denke ich mir: So wichtig ist das doch gar nicht!		
	... sage ich mir: Alles halb so wild!		
	... denke ich mir: Morgen sieht das schon wieder anders aus!		
Problemlösende Bewältigung			
	... mache ich mir einen Plan, wie ich das Problem lösen kann!	Einfachauswahl	1 = auf keinen Fall 2 = eher nein 3 = vielleicht 4 = eher ja 5 = auf jeden Fall
	... versuche ich herauszufinden, was das Problem ist!		
	... überlege ich, was ich tun kann!		
	... mache ich etwas, das das Problem löst!		
Negative Stressverarbeitung			
	... fällt es mir schwer, an etwas Anderes zu denken!	Einfachauswahl	1 = auf keinen Fall 2 = eher nein 3 = vielleicht 4 = eher ja 5 = auf jeden Fall
	... geht mir diese Situation immer wieder durch den Kopf!		
	... beschäftigen mich die ganze Zeit Sorgen und Gedanken über die Situation!		

	... kreisen meine Gedanken nur noch um diese Sache!		
Coping II			
Variablenname	**Item**	**Typ**	**Labels**
Geben Sie bitte an, wie sehr Sie den folgenden Aussagen derzeit zustimmen.			
	Ich neige dazu, mich nach schwierigen Zeiten schnell zu erholen.	Einfachauswahl	1 = Stimme vollkommen zu 2 = Stimme eher zu 3 = Neutral 4 = Stimme eher nicht zu 5 = Stimme überhaupt nicht zu
	Es fällt mir schwer, stressige Situationen durchzustehen.		
	Ich brauche nicht viel Zeit, um mich von einem stressigen Ereignis zu erholen.		
	Es fällt mir schwer, zur Normalität zurückzukehren, wenn etwas Schlimmes passiert ist.		
	Normalerweise überstehe ich schwierige Zeiten ohne größere Probleme.		
	Ich brauche tendenziell lange, um über Rückschläge in meinem Leben hinwegzukommen.		
Life-Orientation-Test (LOT-R; Glaesmer et al., 2008)			
Variablenname	**Item**	**Typ**	**Labels**
Bitte geben Sie an, inwieweit Ihre Meinung mit den folgenden Aussagen übereinstimmt.			
	Ich mache mir normalerweise wenig Gedanken und Mühe, mich auf die Zukunft vorzubereiten.	Einfachauswahl	1 = Stimmt genau 2 = Stimmt eher 3 = Teils-teils 4 = Stimmt eher nicht 5 = Stimmt nicht
	Oft tue ich, was mir im Moment Spaß macht, auch wenn ich dafür ein langfristiges Ziel aufgeben muss.		
	Was hier und jetzt geschieht, ist für mich wichtiger als was langfristig aus mir wird.		
	Ich handle oft aus einer augenblicklichen Laune heraus ohne zu überlegen.		
Optimismus			
Variablenname	**Item**	**Typ**	**Labels**
	Ich bin optimistisch, was meine Zukunft betrifft.	Einfachauswahl	1 = Stimmt genau 2 = Stimmt eher 3 = Teils-teils 4 = Stimmt eher nicht 5 = Stimmt nicht
	Auch in schwierigen Zeiten glaube ich, dass alles gut wird.		
	Ich denke, dass mir in meinem Leben gute Dinge passieren werden.		

	Ich glaube, dass ich alles schaffen kann, egal wie schwierig es ist.		
ICD-10 Symptom Checklist (ISR: ICD-10-Symptom-Rating; Tritt et al., 2008)			
Variablenname	**Item**	**Typ**	**Labels**
Bitte geben Sie an, inwieweit die folgenden Aussagen derzeit auf Sie zutreffen.			
	Meine Stimmung ist gedrückt/niedergeschlagen.	Einfachauswahl	1 = Trifft extrem zu 2 = Trifft deutlich zu 3 = Trifft ziemlich zu 4 = Trifft kaum zu 5 = Trifft nicht zu
	An Dingen, die ich normalerweise gern mache, habe ich keine richtige Freude mehr.		
	Ich habe nicht genug Energie, wenn ich etwas tun will und werde schnell müde.		
	Ich fühle mich wertlos/traue mir nichts zu.		
Skala Angstsyndrom			
	Ich bekomme unerklärliche Angstattacken oder Angst in Situationen, die anderen Menschen harmlos erscheinen.		
	In starken Angstsituationen habe ich plötzlich auftretende körperliche Beschwerden, z. B. Herzklopfen/-rasen, Atemnot, Schwindel, Druck auf der Brust, Kloß im Hals, Zittern oder innere Unruhe bzw. Anspannung.		
	Ich versuche bestimmte Situationen, die mir Angst machen, zu vermeiden.		
	Schon die Vorstellung, dass ich wieder eine Angstattacke erleiden könnte, macht mir Angst		
Intrinsische Motivation (SMR-LS; Skalen zur motivationalen Regulation beim Lernen im Studium) (Thomas, Müller, Bieg; 2018)			
Variablenname	**Item**	**Typ**	**Labels**
Derzeit ...			
	... macht mir das Arbeiten in meinem Studium richtig Spaß.	Einfachauswahl	1 = Stimmt genau 2 = Stimmt ziemlich 3 = Stimmt etwas 4 = Stimmt eher nicht 5 = gar nicht
	... genieße ich es richtig, im Studium zu lernen und zu arbeiten.		
	... finde ich das Lernen für mein Studium richtig spannend.		
Identifizierte Regulation (SMR-LS; Skalen zur motivationalen Regulation beim Lernen im Studium) (Thomas, Müller, Bieg; 2018)			

Variablenname	Item	Typ	Labels
	... setze ich mich im Studium ein, weil ich die Tätigkeit persönlich für sehr wichtig erachte.	Einfachauswahl	1 = Stimmt genau 2 = Stimmt ziemlich 3 = Stimmt etwas 4 = Stimmt eher nicht 5 = gar nicht genau
	... lerne ich vor allem, weil ich kompetenter werden und mich weiterentwickeln will.		
	... setze ich mich im Studium ein, um selbstgesteckte Ziele verwirklichen zu können.		
Introjizierte Regulation (SMR-LS; Skalen zur motivationalen Regulation beim Lernen im Studium) (Thomas, Müller, Bieg; 2018)			
Variablenname	**Item**	**Typ**	**Labels**
	... lerne ich, weil ich mir selbst beweisen will, dass ich fähig bin, ein Hochschulstudium abzuschließen.	Einfachauswahl	1 = Stimmt genau 2 = Stimmt ziemlich 3 = Stimmt etwas 4 = Stimmt eher nicht 5 = gar nicht genau
	... lerne ich, um mir selbst zu zeigen, dass ich eine intelligente Person bin.		
	... möchte ich mir selbst beweisen, dass ich im Studium erfolgreich sein kann.		
Externale Regulation (SMR-LS; Skalen zur motivationalen Regulation beim Lernen im Studium) (Thomas, Müller, Bieg; 2018)			
Variablenname	**Item**	**Typ**	**Labels**
	... lerne ich vor allem, weil ich einen akademischen Grad erlangen möchte.	Einfachauswahl	1 = Stimmt genau 2 = Stimmt ziemlich 3 = Stimmt etwas 4 = Stimmt eher nicht 5 = gar nicht
	... lerne ich vor allem, weil ich ohne akademische Ausbildung keine gut bezahlte Arbeit bekomme.		
	... lerne ich, um später einen angesehenen Beruf zu bekommen.		
Psychologische Grundbedürfnisse (Fragebogen zur Befriedigung und Frustration der psychologischen Grundbedürfnisse) (Heissel et al., 2018)			
Variablenname	**Item**	**Typ**	**Labels**
Bitte geben Sie an, inwieweit die folgenden Aussagen derzeit auf Sie zutreffen.			
Aut+	Ich habe das Gefühl, dass ich bei den Sachen, die ich mache, frei entscheiden kann. **I feel a sense of choice and freedom in the things I undertake.**	Einfachauswahl	1= Trifft voll und ganz zu 2 3 4 5 = Trifft überhaupt nicht zu
Aut-	Bei den meisten Sachen, die ich mache, habe ich das Gefühl, dass ich sie tun muss. **Most of the things I do feel like "I have to".**		
Sr+	Ich spüre, dass ich den Menschen, die mir etwas bedeuten, auch wichtig bin.		

	I feel that the people I care about also care about me.		
Sr-	Ich fühle mich ausgeschlossen aus der Gruppe, zu der ich gehören möchte. **I feel excluded from the group I want to belong to.**		
Comp+	Ich bin davon überzeugt, dass ich Dinge gut kann. **I feel confident that I can do things well.**		
Comp-	Ich habe ernsthafte Zweifel daran, dass ich Dinge gut kann. **I feel confident that I can do things well.**		
Aut+	Ich habe das Gefühl, dass meine Entscheidungen widerspiegeln, was ich wirklich will. **I feel that my decisions reflect what I really want.**		
Aut-	Ich fühle mich gezwungen viele Dinge zu tun, die ich mir selbst nicht aussuchen würde. **I feel forced to do many things I wouldn't choose to do.**		
Sr+	Ich fühle mich mit Menschen verbunden, die sich um mich kümmern und um die ich mich kümmere. **I feel connected with people who care for me, and for whom I care.**		
Sr-	Ich habe das Gefühl, dass Personen, die mir wichtig sind, sich mir gegenüber kalt und distanziert verhalten. **I feel that people who are important to me are cold and distant towards me.**		
Comp+	Ich fühle mich kompetent in dem was ich tue. **I feel capable at what I do.**		
Comp-	Ich bin von vielen meiner Leistungen enttäuscht. **I feel disappointed with many of my performances.**		
Aut+	Ich habe das Gefühl, dass meine Entscheidungen ausdrücken, wer ich wirklich bin. **I feel my choices express who I really am.**		
Aut-	Ich fühle mich unter Druck zu viele Dinge tun zu müssen.		

	I feel pressured to do too many things.		
Sr+	Mit Personen, die mir wichtig sind, fühle ich mich nah und verbunden. **I feel close and connected with other people who are important to me.**		
Sr-	Ich habe den Eindruck, dass Menschen, mit denen ich meine Zeit verbringe, mich nicht leiden können. **I have the impression that people I spend time with dislike me.**		
Comp+	Ich fühle mich kompetent meine Ziele erreichen zu können. **I feel competent to achieve my goals.**		
Comp-	Ich bin mir meiner Fähigkeiten nicht sicher. **I feel insecure about my abilities.**		
	Ich habe das Gefühl, dass ich immer das getan habe, was mich wirklich interessiert. **I feel I have been doing what really interests me.**		
	Meine täglichen Aktivitäten fühlen sich wie eine Reihe von Verpflichtungen an.		
	Ich empfinde ein warmes Gefühl für die Menschen, mit denen ich Zeit verbringe. **I experience a warm feeling with the people I spend time with.**		
	Ich habe das Gefühl, dass die Beziehungen, die ich habe, nur oberflächlich sind. **I feel the relationships I have are just superficial.**		
	Ich habe das Gefühl schwierige Aufgaben erfolgreich meistern zu können. **I feel I can successfully complete difficult tasks.**		
	Ich fühle mich wie ein/e Versager/in aufgrund der Fehler, die ich mache. **I feel like a failure because of the mistakes I make.**		
Handlungsfähigkeit/Selbstwirksamkeit			
Variablenname	**Item**	**Typ**	**Labels**
Denken Sie an die derzeitige Home-Learning Situation:			

	Ich weiß, dass ich derzeit die Aufgaben in meinem Studium schaffen kann.	Einfachauswahl	1 = Stimmt genau 2 = Stimmt ziemlich 3 = Stimmt etwas 4 = Stimmt eher nicht 5 = gar nicht
	Wenn ich mich anstrenge, kann ich derzeit auch die schwierigen Aufgaben in meinem Studium lösen.		
	Ich bin überzeugt, dass ich derzeit bei Tests gut abschneiden kann.		
Selbstreguliertes Lernen (LIST-K: Gekürzte Version des Fragebogens Lernstrategien im Studium (LIST; Wild & Schiefele, 1994) (Klingsieck, 2018)			
Variablenname	**Item**		**Labels**
Beim derzeitigen Home-Learning ...			
	... plane ich mein Vorgehen.	Einfachauswahl	1 = Stimmt genau 2 = Stimmt ziemlich 3 = Stimmt etwas 4 = Stimmt eher nicht 5 = gar nicht
	... reserviere ich feste Lernzeiten in meinem Tagesablauf.	Einfachauswahl	
	... versuche ich mich selbst zu motivieren (z.B. durch Belohnungen für erledigte Aufgaben).	Einfachauswahl	
	... setze ich verschiedene Lern- und Arbeitsstrategien ein.		
	... überlege ich, wenn mir eine sehr schwierige Aufgabe gelungen ist, welche Strategien hilfreich waren und welche nicht.	Einfachauswahl	
	... hole ich mir Rückmeldung und Feedback, wenn ich es brauche.	Einfachauswahl	
Prokrastination (Prokrastinationsfragebogen für Studierende; PFS) (Glöckner-Rist, Engberding, Höcker, & Rist, 2014)			
	... schiebe ich Aufgaben bis zum letzten Moment hinaus.		1 = Stimmt genau 2 = Stimmt ziemlich 3 = Stimmt etwas 4 = Stimmt eher nicht 5 = gar nicht
	... gelingt es mir häufig nicht, mit einer Aufgabe anzufangen, obwohl ich es mir vorgenommen habe.		
	... fange ich mit einer Aufgabe erst an, wenn der Druck sehr hoch ist.		
Passive Prokrastination (Unintentional Procrastination Scale; UPS) (Fernie et al., 2017)			
Variablenname	**Item**	**Typ**	**Labels**
	Selbst wenn ich es mir vornehme, beginne ich Aufgaben meist nicht unmittelbar nachdem ich sie erhalten habe.	Einfachauswahl	1 = Stimmt genau 2 = Stimmt ziemlich 3 = Stimmt etwas

	Ich nehme mir oft vor an etwas zu arbeiten, aber komme dann manchmal einfach nicht dazu.		4 = Stimmt eher nicht 5 = gar nicht
	Ich beginne oft mit Sachen, die ich dann nicht zu Ende bringe.		
	Mir gelingt es manchmal einfach nicht etwas zu erledigen, obwohl ich es beabsichtige.		
	Ich setze mir häufig selbst einen Termin, bis zu dem ich etwas erledigt oder entschieden haben möchte, aber verpasse ihn dann.		
	Obwohl ich Aufgaben wirklich rechtzeitig fertigstellen möchte, schaffe ich das nur selten.		

Aktive Prokrastination (Active Procrastination Scale; APS) (Choi & Moran, 2009)

Variablenname	**Item**	**Typ**	**Labels**
Bitte geben Sie an, inwieweit die folgenden Aussagen derzeit auf Sie zutreffen.			
	Es ist wirklich eine Qual für mich, unter Termindruck zu arbeiten. (RK)	Einfachauswahl	1= Stimmt gar nicht 2 = Stimmt eher nicht 3 = Stimmt etwas 4 = Stimmt ziemlich 5 = Stimmt genau
	Wenn ich unter Druck arbeiten muss, bin ich aufgewühlt und handle zögerlich. (RK)		
	Ich bin angespannt und kann mich nicht konzentrieren, wenn zu viel Zeitdruck auf mir lastet. (RK)		
	Wenn ich mich beeilen muss, um eine Frist einzuhalten, frustriert mich das. (RK)		
	Ich fange Aufgaben oft in letzter Minute an und habe dann Schwierigkeiten, rechtzeitig fertig zu werden. (RK)		
	Ich scheitere häufig an der Erreichung meiner selbst gesetzten Ziele. (RK)		
	Ich bin oft spät dran, wenn ich etwas erledigen muss. (RK)		
	Es fällt mir schwer, einmal begonnene Aktivitäten abzuschließen. (RK)		

Herausforderungen - qualitative Fragen

Zum Schluss wollen wir Sie noch bitten folgenden Fragen zu beantworten, die sich auf die derzeitige außergewöhnliche Situation beziehen und wie es Ihnen dabei geht.

Variablenname	**Item**	**Typ**	**Labels**
	Wenn Sie an den kommenden Herbst denken, worüber machen Sie sich am meisten Gedanken?	freie Eingabe	

	Wie fänden Sie es, falls im Herbst auch weiterhin fast ausschließlich Home-Learning angeboten würde?	Einfachauswahl	1 = sehr gut 2 = gut 3 = mittelmäßig 4 = schlecht 5 = sehr schlecht
	Was waren für Sie seit Beginn der Pandemie die größten Herausforderungen?	freie Eingabe	
	Was ist Ihnen seit Beginn der Pandemie besonders gut gelungen?	freie Eingabe	

Appendix B

SPSS Output Summaries (in German)

SPSS Output: ANOVA for SRL and Intrinsic Motivation

ANOVA

		Quadratsumme	df	Mittel der Quadrate	F	Sig.
Mean scale SRL (reversed items used)	Zwischen den Gruppen	100,501	2	50,250	72,148	<,001
	Innerhalb der Gruppen	1060,747	1523	,696		
	Gesamt	1161,248	1525			
Mean scale Intrinsische Motivation (reversed items used)	Zwischen den Gruppen	239,759	2	119,879	112,627	<,001
	Innerhalb der Gruppen	1621,074	1523	1,064		
	Gesamt	1860,833	1525			

SPSS Output: Effect Size Estimates for ANOVA on SRL and Intrinsic Motivation

ANOVA-Effektgrößen[a]

		Punktschätzung	95% Konfidenzintervall Unterer	Oberer
Mean scale SRL (reversed items used)	Eta-Quadrat	,087	,061	,114
	Epsilon-Quadrat	,085	,060	,112
	Omega-Quadrat, fester Effekt	,085	,060	,112
	Omega-Quadrat, Zufallseffekt	,045	,031	,059
Mean scale Intrinsische Motivation (reversed items used)	Eta-Quadrat	,129	,099	,159
	Epsilon-Quadrat	,128	,098	,158
	Omega-Quadrat, fester Effekt	,128	,098	,158
	Omega-Quadrat, Zufallseffekt	,068	,051	,086

a. Eta-Quadrat und Epsilon-Quadrat werden basierend auf dem Modell mit festen Effekten geschätzt.

SPSS Output: Tests for Normality of Scale Distributions for Studied Variables

Tests auf Normalverteilung

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistik	df	Signifikanz	Statistik	df	Signifikanz
Mean scale Active Prokrastination	,075	1527	<,001	,973	1527	<,001
Mean scale Passive Prokrastination (reversed items used)	,065	1527	<,001	,977	1527	<,001
Mean scale Intrinsische Motivation (reversed items used)	,095	1527	<,001	,965	1527	<,001
Mean scale SRL (reversed items used)	,046	1527	<,001	,991	1527	<,001

a. Signifikanzkorrektur nach Lilliefors

SPSS Output: Levene's Test for Homogeneity of Variance for SRL and Intrinsic Motivation

Tests der Varianzhomogenität

		Levene-Statistik	df1	df2	Sig.
Mean scale SRL (reversed items used)	Basiert auf dem Mittelwert	5,274	2	1523	,005
	Basiert auf dem Median	5,158	2	1523	,006
	Basierend auf dem Median und mit angepaßten df	5,158	2	1501,867	,006
	Basiert auf dem getrimmten Mittel	5,214	2	1523	,006
Mean scale Intrinsische Motivation (reversed items used)	Basiert auf dem Mittelwert	4,330	2	1523	,013
	Basiert auf dem Median	3,195	2	1523	,041
	Basierend auf dem Median und mit angepaßten df	3,195	2	1429,534	,041
	Basiert auf dem getrimmten Mittel	3,626	2	1523	,027

SPSS Output: Games–Howell Post Hoc Comparisons for All Group Pairs on SRL and Intrinsic Motivation

Mehrere Vergleiche

Games-Howell

Abhängige Variable	(I) activpassivtype	(J) activpassivtype	Mittelwertdifferenz (I-J)	Std.-Fehler	Sig.	95% Konfidenzintervall Untergrenze	95% Konfidenzintervall Obergrenze
Mean scale SRL (reversed items used)	active	passive	,86065*	,07968	<,001	,6733	1,0480
		no	,32230*	,06588	<,001	,1672	,4774
	passive	active	-,86065*	,07968	<,001	-1,0480	-,6733
		no	-,53835*	,05729	<,001	-,6731	-,4036
	no	active	-,32230*	,06588	<,001	-,4774	-,1672
		passive	,53835*	,05729	<,001	,4036	,6731
Mean scale Intrinsische Motivation (reversed items used)	active	passive	1,33569*	,09454	<,001	1,1134	1,5580
		no	,51696*	,08098	<,001	,3263	,7076
	passive	active	-1,33569*	,09454	<,001	-1,5580	-1,1134
		no	-,81873*	,06657	<,001	-,9753	-,6622
	no	active	-,51696*	,08098	<,001	-,7076	-,3263
		passive	,81873*	,06657	<,001	,6622	,9753

*. Die Mittelwertdifferenz ist in Stufe 0.05 signifikant.