



universität
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MASTERARBEIT / MASTER'S THESIS

Titel der Masterarbeit / Title of the Master's Thesis

„The Self-Determination Theory: Motivational Framework for
Foreign Language Learning – A Cross-Cultural Comparison
Using Structural Equation Modelling“

verfasst von / submitted by

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angestrebter akademischer Grad / in partial fulfilment of the requirements for the degree of
Master of Science (MSc)

Wien, 2016 / Vienna, 2016

Studienkennzahl lt. Studienblatt /
degree programme code as it appears on
the student record sheet:

A 066 840

Studienrichtung lt. Studienblatt /
degree programme as it appears on
the student record sheet:

Psychology

Betreut von / Supervisor:

Dipl.-Psych. Dr. Julia Klug

Acknowledgements

First and foremost, I would like to express my sincere gratitude to everybody who made this master thesis possible. I want to thank all the students for their numerous and enthusiastic participation and all the teachers for generously sharing their time in support of this study. In this respect, I want to extend my deepest gratitude towards Mr. Pagel, who made this study possible by providing the best organizational preparation and support imaginable.

I want to especially thank my advisor Dr. Julia Klug for the continuous support throughout this project in a perfect practical display of the self-determination theory. Thank you for giving me the space, feedback and support that was needed to complete this thesis.

Furthermore, I want to thank Andreas Pfaffel for always having an open ear for my statistical hardships and providing valuable input to advance my statistical analysis. Thank you for helping me understand statistics so much better.

A special gratitude has to be extended to all my friends who bore with me in times of oversharing and also in times of self-prescribed solitude towards the end. At this point I want to acknowledge my partner in crime Armin for the countless hours of reciprocal reflection and input during the lunch and late evening breaks.

Last, but not least I want to thank my parents for their continuous support not only throughout this master thesis, but more importantly throughout my whole life. Thank you for having my back on every decision that I make and for providing the solid foundation on which I was able to build my whole life.

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Introduction

In times of a globalized economy, the internationalization of higher education and the rise of the internet, English has become established as the widespread lingua franca in international relations and communication (Bernini, 2015). English as a lingua franca (ELF) refers to communication in English between speakers whose first language may not necessarily be English (Crystal, 2003, as cited in Seidlhofer, 2005). It therefore serves as a contact language between people who do not share the same native tongue or cultural background (Seidlhofer, 2005; Seidlhofer, Breiteneder, & Pitzl, 2006). The term “lingua franca” in this sense refers to a communicative need in international communication rather than to a linguacultural one (Seidlhofer et. al., 2006). In many different countries the curricula reflect that development. English was elevated to a basic skill, taught in general education like math and the first language (Graddol, 2004). Therefore, “English as a foreign language”-learning plays a crucial part in modern high school curricula outside of the English speaking countries. In 2001 90% of students educated in the European Union studied English in school, primarily as their first foreign language (Pilos, 2001; as cited in Seidlhofer et al., 2006).

There is broad consensus that motivation, together with aptitude, is one of the most important factors for the success of foreign language learning (FLL) (Coleman, Galaczi, & Astruc, 2007; Ma, 2009; Özgür & Griffiths, 2013; Ushioda, 2008; Vatankhah & Tanbakooei, 2014). A meta-analysis conducted by Masgoret and Gardner (2003) provided evidence for a consistent positive relationship between motivation and various aspects of language achievement. The crucial role of motivation for FLL seems almost trivial, or as Ushioda (2008, p. 19) puts it: “Common sense and everyday experience suggest that the high achievers of this world have motivation, a word which derives from the Latin verb *movere* meaning to move. Thus, simply defined, we might say that motivation concerns what moves a person to make certain choices, to engage in action, and to persist in action.”

Research on motivation in FLL has a long tradition and therefore several approaches have been proposed throughout the years. One of the first and most influential theories is the socio-educational model of second language acquisition by Robert Gardner and Wallace Lambert (1959). The Canadian researchers conducted most of their studies in the bilingual and bicultural FLL-context of Canada (Ma, 2009). They argue that language

learning is different from other forms of learning motivation. A language learner does not only acquire knowledge or a set of skills but also has to, to a certain extent, identify with the target language culture (Ushioda, 2008), which makes language learning a deeply social experience (Dörnyei & Cumming, 2003). It is argued that motivation is sustained by attitude towards the second language community and the goals sought through the acquisition of the second language (Noels, Pelletier, Clément, & Vallerand, 2003). Gardner and Lambert (1959) proposed two motivational orientations: integrative and instrumental orientation. Integrativeness refers to the sincere desire to (partly) integrate into the target language culture or community (Masgoret & Gardner, 2003). Instrumental orientation, on the other hand, refers to more practical reasons for language learning like getting better grades in school (Ma, 2009).

Even though the socio-educational model has high explanatory value for FLL motivation in general, it does not cover all facets of FLL, especially in educational contexts (Dörnyei, 1994a, 1994b; Oxford & Shearin, 1994). Because the model considers motivation as a learner's rather stable learner trait (Ma, 2009), it has limited practical implications for teachers (Dörnyei, 1994a). Furthermore, because FLL, or more specifically English lessons, are mandatory in many countries, the attitude towards the second language community may not hold any or only very little explanatory value. In 1991, American high school students were asked why they studied Japanese. Two-thirds of the respondents gave reasons which were not incorporated in the socio-educational model like intellectual stimulation, challenge seeking, elitism and many more (Shearin & Bernard, n. d., as cited in Oxford & Shearin, 1994). Also, the socio-educational model provides no explanation for amotivation – or non-motivation – in institutional settings, which is of growing interest for researchers (Ma, 2009). To better explain FLL motivation in the classroom context, a more cognitive approach was needed (Dörnyei, 1994a, 1994b; Dörnyei & Cumming, 2003; Oxford & Shearin, 1994). Cognitive theories focus on the thought process which shapes motivation for FLL and therefore emphasize the motivation from within (Ushioda, 2008). In this context, a conceptual distinction between English as a Second Language, where the learner is frequently in contact with English native speakers and English as a Foreign Language (EFL), where English is taught in a formal classroom setting and without frequent interaction with native speakers, has to be made (Pae, 2008). Because in most countries there is no frequent interaction with native English

speakers and because in this study ELF is viewed from a functional perspective, language learning is viewed as foreign language learning.

A promising approach in the field of EFL motivation research is the application of the Self-Determination Theory (SDT) by Deci and Ryan (1985a) to language learning as proposed by Noels and colleagues (Noels, 2001; Noels, Pelletier, Clément, & Vallerand, 2000; Noels et al., 2003).

The Self-Determination Theory

The SDT is a cognitive meta-theory of motivation. It encompasses four mini-theories, namely cognitive evaluation theory, organismic integration theory, causality orientation theory, and basic psychological needs theory. Together they deliver a comprehensive explanation for a variety of motivational phenomena in a multitude of situations (Deci & Ryan, 1985a). Even though the SDT is supported by a vast body of research in various different scientific fields of motivational research, it has only recently been applied to FLL (Ma, 2009).

The core of the SDT are the concepts of autonomy and intrinsic motivation (IM). Intrinsic motivation was first proposed in a paper from White (1959), where he defined intrinsic motivation as doing something because the task is inherently enjoyable or interesting. In short: an intrinsically motivated action is inherently fun (Ryan & Deci, 2000a). Behavioral theories and drive theories, which were the dominant explanatory theories for motivation at the time, had trouble explaining human behavior like play, exploration and various other human behavior (Deci & Ryan, 1985a). Whites' (1959) concept of intrinsic motivation was able to account for this kind of behavior. The SDT integrates the concept of intrinsic motivation into a broader motivational framework and puts it in an antagonistic relationship with extrinsic motivation (Deci & Ryan, 1985a). As mentioned above, the self-determination framework itself is constituted by four mini theories (Deci & Ryan, 1985a). Rather than viewing motivation as a one-dimensional construct, which only differs in amount, the SDT distinguishes several kinds of motivation. The quality of the motivational outcome, or the extent to which motivation is experienced, is not determined by the amount of motivation but rather by the kind of motivation that is experienced (Deci & Ryan, 2008). There are two basic types of motivation postulated by the SDT: extrinsic (controlled) and intrinsic (autonomous) motivation as well as one type of non-motivation, amotivation, which represents the unwillingness to pursue an activity

(Ryan & Deci, 2000a). The quality of motivation is proposed to be determined by the satisfaction of three basic psychological needs: autonomy, competence and relatedness. People pursue activities, which are in itself satisfying and rewarding but can also be alienated and disaffected if the social surroundings thwart peoples inherent active nature (Deci & Ryan, 2008). Those external circumstances influencing an individual from the outside and affecting intrinsic motivation are covered in the cognitive evaluation theory.

Cognitive Evaluation Theory

The cognitive evaluation theory is one of the four mini theories comprising the SDT. The theory specifies influence of external events, like rewards or punishment, on intrinsic motivation. Therefore, it primarily describes the effects of external influences on a person's perceived autonomy and competence – two of the three basic psychological needs (Ryan, 1982; Deci & Ryan, 1985a). In the cognitive evaluation theory relatedness only plays a secondary role (Ryan & Deci, 2000b). Early on, it was suggested, that extrinsic and intrinsic motivation were additive in nature (Porter & Lawler, 1968). In contrast, the cognitive evaluation theory proposes that external factors like rewards or control tend to diminish the feeling of autonomy and change the perceived locus of causality from internal to external (deCharms, 1968; Heider, 1958; as cited in Gagné & Deci, 2005). This view is supported by the results of a meta-analysis (Deci, Ryan, & Koestner, 1999), which showed that extrinsic rewards had an undermining effect on intrinsic motivation. That is, if an initially intrinsically motivated action is later on rewarded extrinsically, the intrinsic motivation is decreased. The same working mechanism also applies for negative extrinsic factors like punishment (Deco, & Casco, 1972, as cited in Deci & Ryan, 2009) and deadlines (Amabile, DeJoung, & Lepper, 1985, as cited in Deci & Ryan, 2009). Positive feedback, however, has to be excluded from this list of undermining external factors. On the contrary, it even enhances intrinsic motivation if the task difficulty is challenging but not too difficult (Deci et al., 1999; Hagger, Koch, & Chatzisarantis, 2015). Pulfrey, Darnon, and Butera (2013) showed a higher retained interest in the tasks subject matter if motivation was autonomous, meaning that an intrinsically motivated action is repeated spontaneously and retained for longer without external influence. Extrinsic rewards for an action decreased the spontaneous repetition and retention of the task after the effect of the extrinsic motivator has “expired”. It is important to note that this effect only concerns intrinsic motivation and therefore the tendency to repeat the task without external influence or constraint and not the outcome

of the task itself. This effect therefore does not necessarily have a negative influence on the immediate outcome. A recent meta-analysis (Cerasoli, Nicklin, & Ford, 2014) showed no negative interaction between performance and extrinsic and intrinsic motivation.

Therefore, the cognitive evaluation theory explains how intrinsic motivation may be thwarted by extrinsic circumstances, which concern the evaluation of the motivational source of an activity, while not necessarily negatively impacting the performance. Intrinsic and extrinsic motivation may therefore co-exist parallel to each other and even contribute additively to the outcome of an action. However, the cognitive evaluation theory does not explain why people still act motivated and perform everyday tasks, of which the vast majority is not inherently intrinsically motivating and often involving some kind of extrinsic motivator (Ryan & Deci, 2000b).

The second mini theory, the organismic integration theory, covers this aspect of human motivation. It explains how people integrate externally regulated task which were not inherently motivating so that they become internally regulated. This is especially relevant for the educational context. Because not all educational activities can be intrinsically motivating, teachers need means to motivate students without constant pressure. In other words, how is it possible for teachers to foster a certain motivational aspect – in this case motivation for learning English – in students who may very well be not motivated at all (amotivated) or simply passively complying to external demands (externally regulated)?

Organismic Integration Theory

The organismic integration theory is an attempt to integrate the contrasting viewpoints of behavioral and cognitive theories on the one hand and psychoanalytical, humanistic and developmental theories on the other. Humans are assumed to be conditioned and respond to pressure from outside, but also to have a general innate tendency to develop an unified and consistent sense of self (Deci & Ryan, 2002). This represents an extension of the originally dichotomous view of intrinsic motivation (internal locus of causality) and extrinsic motivation (external locus of causality). This perspective was recognized as having too little explanatory value, which is why Deci and Ryan (1985a) refined the distinction. While intrinsically motivated behavior is assumed to always have an internal locus of causality, extrinsically motivated behavior can vary in its degree of perceived self-determination and may even be perceived as completely self-determined (internal locus of causality). At this point, it is important to note that not only the aforementioned

external influences result in a perceived external locus of causality but also intra-individual pressure like perceiving one's self-worth at stake (Ryan, 1982). The process of taking in values or regulations from external sources and making it internally regulated is called introjection (Deci & Ryan, 1985a). This process does not entail identification with the action or regulatory process but simply shifting the source of pressure from an external source to the inside. Integration, however, describes the process of assimilating the initially external regulation process into one's core of being and therefore making it part of the personal identity (Deci & Ryan, 1985a). Introjection results in internally controlling regulation whereas integration results in autonomous regulation (Deci, Eghrari, Patrick, & Leone, 1994).

The organismic integration theory therefore explains the introjection and integration of extrinsic motivation as a result of the ongoing attempt of developing a unified self through integration of external and internal stimuli and constraints (Deci & Ryan, 1985a). This process can be regarded as a function of a person's inner resources and the immediate social context. Those inner resources are the result of previous social functions and accumulate to a rather stable motivational orientations (Vansteenkiste, Niemiec, & Soenens, 2010). The causality orientation theory tries to explain those global motivation orientations, picking up the ideas of perceived locus of causality (PLOC) and motivational regulation.

Causality Orientation Theory

In the SDT, the causality orientation theory (COT) and the organismic integration theory are distinct mini theories. However, for this thesis it seems useful to describe the COT in regards to the organismic integration theory as the COT and the organismic integration theory are closely related to each other. Deci and Ryan (1985a; 1985b) differentiate between three different groups of people, the autonomously, the control- and the impersonally-oriented group. People who are autonomously orientated tend to act according to their own interests and self-endorsed values. They tend to interpret external events as informational and regulate their behavior autonomously. Control-orientated people tend to act according to their external or internal demands and interpret external events as pressuring and therefore feel rather controlled (Vansteenkiste et al., 2010). Lastly, impersonal-orientated individuals perceive their life experiences as beyond their control and therefore tend to feel helpless and passive (Deci & Ryan, 1985a; Vansteenkiste et al., 2010). People who score high on autonomy orientation scales show a higher congruency between displayed behaviors, self-reported personal characteristics,

while individuals with high scores in control orientation show low or even negative congruency (Koestner, Bernieri, & Zuckerman, 1992).

Organismic Integration and Causality Orientation

Even though intrinsic motivation is assumed to be the optimal kind of motivation (Ushioda, 2008), extrinsic motivation and its motivational regulation plays an important role in everyday activities and especially in the educational context. Research has shown that not only intrinsic but also internalized extrinsic motivation fosters positive human experience and performance (Deci & Ryan, 2008). Deci and Ryan (1985a) distinguish four regulation types of extrinsic motivation, which can be further subsumed into two groups of causality orientation. Externally and introjected regulated motivation are characterized by an external perceived locus of causality and therefore by an external causality orientation. Those regulation types are inconsistent predictors of proficiency (Noels, 2013). External regulation describes behavior intention with a source external to the person such as tangible rewards or punishment. It is the least self-determined form of extrinsic motivation. Even though people may show a considerable amount of effort, once the external stimulus is removed, the action will most likely not be retained or repeated (Noels, 2001). Introjected regulation, on the other hand, refers to behavioral sources within a person. This internal behavioral source, such as guilt or a self-inflicted competitive situation is, however, perceived as pressure and is therefore not considered self-determined (Noels et al., 2000). Identified and integrated extrinsic motivation, on the other hand, are characterized by an internal locus of causality and therefore an internal causality orientation, people are acting out of personal choice. They are considered as consistent predictors of positive learning outcomes while still being distinct from intrinsic motivation (Noels, 2013). Identified motivation refers to a behavioral intention that is perceived to be personally important, the activity is consistent with the personal values of the individual (Noels, 2001). Integrated regulation is the most autonomous form of extrinsically motivated behavior. It shares many features with intrinsic motivation like the action being perceived to be fully congruent with personal values, however, integrated regulated behavior is still considered extrinsic because the action is performed to achieve a personally important outcome rather than for the pleasure of the activity itself (Deci & Ryan, 2002).

In 1989 (Ryan & Connell, 1989), a three level structure was proposed for the educational context, which didn't include integrated regulation. This type of regulation is most often found in adults rather than children. This may be due to the fact that at a young age

intrinsic motivation is still more prevalent, and that younger people may not yet have achieved a sense of integration within the self (Vallerand, 1997, 2001). The SDT research in language learning follows this factor structure (Noels, 2001; Noels, et al., 2000; Vallerand, Blais, Brière Senècal, & Vallières, 1992; 1993), which is why this study also only regards three types of extrinsic motivational regulation.

In sum, the integration process describes the change of the perceived locus of causality (PLOC) from external to internal (Ryan & Deci, 2000a). The PLOC does not refer to the perceived source of the outcome, but to the perceived source of the initial action intention. This process is not necessarily a continuous process, following all steps in order, but motivational regulation can skip certain regulation steps and can even devolve back to a less desirable one (Ryan & Deci, 2000a).

Those mini theories combined result in a continuum of relative autonomy ranging from none self-determined to fully self-determined relative autonomy (Figure 1).

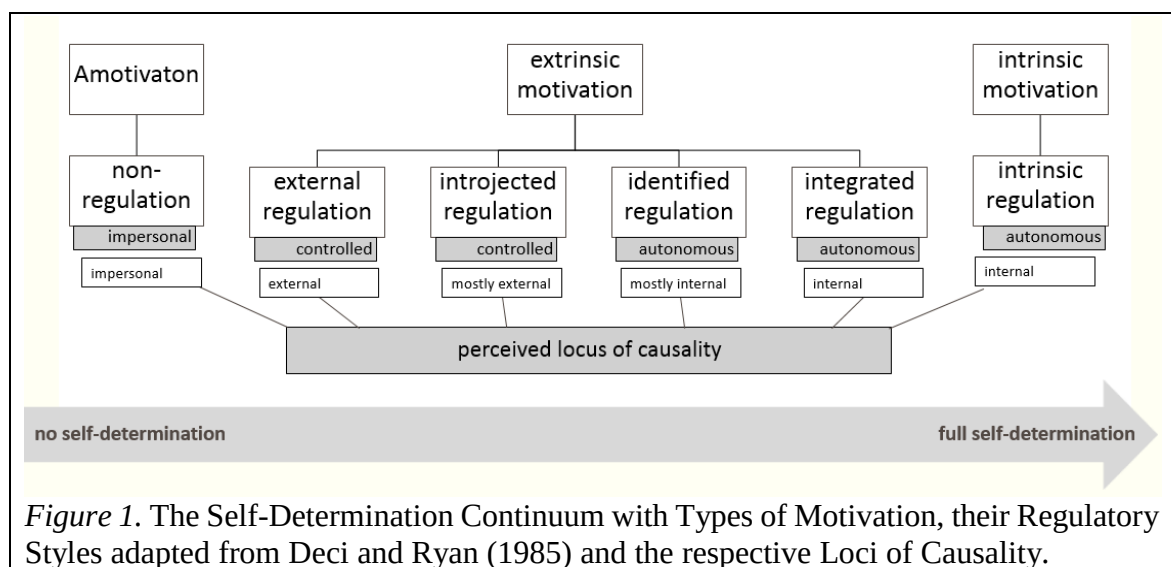


Figure 1. The Self-Determination Continuum with Types of Motivation, their Regulatory Styles adapted from Deci and Ryan (1985) and the respective Loci of Causality.

The integration process of extrinsic regulation, as well as the retention of intrinsic motivation only operates to the extent that the basic psychological needs are satisfied (Deci & Ryan, 2000; Ryan, Connell, & Deci, 1985).

Basic Psychological Needs Theory

The SDT considers needs as universal, organismic necessities as well as psychological and therefore combines the two need-research traditions of Hull and Murray (Deci & Ryan, 2000). While Hull (1943, as cited in Deci & Ryan, 2000) thought of needs as basic physiological necessities that are not obtained but rather congenital, Murray (1938, as cited in Deci & Ryan, 2000) considered needs to be psychological but obtained.

Furthermore, Ryan and Deci's definition of needs offer a stark contrast to basic drives. In the Hullian and Freudian perspective, drives are considered deficits that disturb the organism, while the SDT takes a growth-oriented approach which considers needs as essential for human development (Deci & Ryan, 2000).

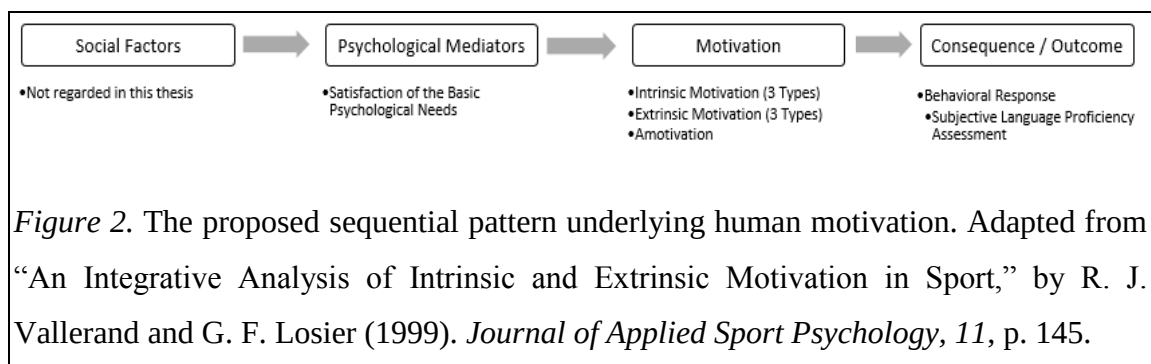
In the SDT, the basic psychological needs are the universal basis for all intrinsically regulated motivation and internalization. The satisfaction of those needs is a necessity for wellbeing and is associated with most effective functioning (Deci & Ryan, 2000). Deci and Ryan (1985a) defined needs as being "innate psychological nutrients that are essential for ongoing psychological growth, integrity and well-being." (Deci & Ryan, 2000). They identified three basic psychological needs: autonomy, relatedness and competence. (1) *Autonomy*, represents the need for "being an origin or source of one's behavior. It is experienced whenever a person perceives his or her behavior as congruent and self-endorsed" (Ryan & La Guardia, 2000, p. 149). Autonomy poses a delicate construct as it is often falsely equated with distinct constructs like internal locus of control, independence or individualism (Deci & Ryan, 2000). (2) *Belongingness or Relatedness*, refers to a "sense of belongingness and connectedness to the persons, group, or culture disseminating a goal. [...] In classrooms this means that students' feeling respected and cared for by the teacher" (Ryan & Deci, 2000a, p. 64). And (3) *Competence*, "[...] refers to feeling effective in one's interactions with the social environment and experiencing opportunities to exercise and express one's capacities [...] the feeling of competence attends behaviors that are both self-endorsed and effectively pursued." (Ryan & La Guardia, 2000, p. 150). SDT research does not focus on the strength of those basic needs but rather on the extent to which a person is able to satisfy the need in a particular situation (Gagné & Deci, 2005).

Need satisfaction fundamentally predicts how an individual is motivated – it is the underlying motivational driver for human activity (Deci & Ryan, 1985a). The interest in an activity is strongly dependent on the degree to which it satisfies the basic psychological needs. The SDT assumes the satisfaction of a single need to be a necessary, but not sufficient condition for intrinsic motivation, therefore the thwarting of a single need may prevent intrinsic motivation (Deci & Ryan, 2000).

While the need for competence and autonomy are considered to be the energizers of intrinsic motivation, the need for relatedness is vitally important for the internalization process (Baard, Deci, & Ryan, 2004; Vansteenkiste, Lens, & Deci, 2006). Dysvik,

Kuvaas, and Gagné (2013) found evidence that the relationship between needs and motivation may not only be synergetic but also additive in nature – assuming every single need to contribute uniquely to the motivational outcome. They found that autonomy and relatedness contribute independently to motivation while competence needs autonomy to be satisfied to predict motivation. This may be evidence for the postulate that autonomy and competence are the energizers of intrinsic motivation and therefor closely intertwined while relatedness contributes more uniquely as the facilitator of internalization (Baard et al., 2004).

The SDT postulates a general sequential working pattern, which is proposed to operate the same way, irrespective of the context (Vallerand, 1997). This working pattern, even though it was developed in conjunction with the hierarchical model of Vallerand (1997), which is not the focus of this thesis, it is assumed to be valid for the general SDT as well. Social factors are assumed to be at the beginning of the motivational sequence, leading into psychological mediators. Those mediators predict the type of motivation, which in turn leads to the consequence or outcome of the motivational sequence. Figure 2 illustrates this pattern as proposed by Vallerand (1997) and adapted for this paper.



This relationship has been examined by many different researches in a variety of different contexts. For example sports (e. g., Mageau & Vallerand, 2003) or work (e. g. Devloo, Anseel, De Beuckelaer, & Salanova, 2015; Gagné & Deci, 2005; Van den Broeck, Vansteenkiste, Lens, & De Witte, 2010).

Also, there is a vast body of research considering the effects of need satisfaction on motivational regulation in education. All three needs were shown to have significant influence on autonomously regulated motivation (Doménech-Betoret & Gómez-Artiga, 2014). A variety of studies found the need for autonomy being thwarted when socializing agents (e. g. teachers) used controlling tactics, resulting in students failing to find interest in or intrinsic motivation for the activity. Vice versa, autonomy supportive tactics were

shown to foster intrinsic motivation (Deci & Black, 2000; Filak & Sheldon, 2008; Reeve & Jang, 2006; Vansteenkiste, Simon, Lens Soenes, & Matos, 2005). Faye and Sharpe (2008) found the need for competence to be most strongly associated with academic motivation. McEown, Noels, and Saumure (2014) found teachers support for competence and relatedness to be associated with internally regulated motivation. Furthermore Reindl, Berner, Scheunpflug, Zeinz, and Dresel (2015) found that a negative peer climate – an aspect of the need for relatedness – had a negative effect on the development of autonomous motivation in mathematics, while a weak to none negative peer climate had a buffering effect. In a longitudinal study, Müller and Palekčić (2006) found a consistently significant contribution of relatedness to motivational regulation. Lastly, an experimental contribution to this body of research comes from Sheldon and Filak (2008). They were able to find significant predictive value of the three needs for intrinsic motivation in a controlled learning game experiment.

Motivational Regulation and Performance

Now one could ask the question: what does it matter how individuals are motivated as long as they are motivated at all? As Ryan and Deci (2000a) argue, the motivational regulation has a significant impact on the behavioral outcome dimension well-being and higher behavioral effectiveness. This study primarily focuses on the behavioral effectiveness variable “performance” or more specifically subjective language proficiency assessment. The assumption of a high predictive value of motivational regulation for several different performance metrics is supported by a vast body of empirical evidence. Cordova and Lepper (1996), as well as Deci and Ryan (1985a) showed that intrinsic motivation enhances performance in elementary school. Additionally, Lemos and Veríssimo (2014) provided evidence for the coexistence of intrinsic and extrinsic motivation in elementary school with intrinsic motivation being associated with higher achievement. Lin, McKeachie, and Kim (2001) showed that intrinsically motivated college students achieved significantly better grades in a variety of distinct subjects than their extrinsically motivated counter parts. In a systematic combination of a meta-analysis and three longitudinal studies (in two different cultures), Taylor et al. (2014) were able to show, that intrinsic motivation predicted school achievement in both conditions. Amotivation was significantly associated with lower academic achievement. These effects were also replicated in an experimental setting. Individuals’ task performance improved in a self-determined choice condition, compared

to a forced choice condition even if the task difficulty was not different (Leotti, Iyengar, & Ochsner, 2010; Patall, Cooper, & Robinson, 2008).

However, in the research on FLL, the SDT has only recently gained traction mainly due to the research efforts of Noels and colleagues (McEown et al., 2014; Noels, 2001, 2009a; Noels et al., 2000, 2003). Even though the meta-analysis of Masgoret and Gardner (2003) illustrates that the fundamental impact of motivation on performance is also applicable for foreign language learning, including different types of performance assessment (objective tests, school grades and subjective self-ratings), and autonomy has become the new “Buzzword” (Ma, 2009, p. 21) of FLL research, research regarding all facets of the SDT has only recently been applied in FLL research by several different researchers. For a review of the research of motivation in FLL see Noels (2009b) and Ma (2009).

However, despite the wide acknowledgement of the SDT there are still some aspects, which are often criticized. Deci, et al. (1999) assume their postulates to universally be applicable, but as most data has been collected in the North American and European context, some researchers (Cross & Gore, 2003; Markus & Kitayama, 2003; as cited in Rudy, Sheldon, Awong, & Tan, 2007) have questioned the generalizability of the SDT to other cultures. Littlewood (1999) states that high autonomy as a motivating factor in language learning could be applied to the western (individualistic) but not to eastern (collectivistic) context. Asian pupils may experience autonomous learning as a threat and they would feel uncomfortable (Hart, 2002).

Cultural Aspects

In the core of most of the criticism considering the SDT is the assumption that people from different cultures differ in various aspects of their lives like interactions, lifestyles and values, and that those differences influence the applicability of the SDT. In the broadest sense, culture encompasses all knowledge, believe-systems, art, morality, customs and explicit and implicit rules of a community (Kimmel & Volet, 2010). The culture theory of Hofstede (2001) is one of the most influential approaches in cross cultural research. Most cross-cultural research uses the term *culture* as the defining underlying factor to subsume people into different groups (McSweeney, 2002). However, Hofstede (1980) views culture as a countries` core as a whole. He refers to that core as “central tendencies” (Hofstede, 1991, p. 253) of countries. He differentiates between six distinct dimensions, which each are defined by opposing terms that represent those

tendencies. The six dimensions collectivism, power distance, masculinity, uncertainty avoidance, long-term orientation and indulgence represent preferences of individuals in a certain culture for one state of affairs over another (Hofstede & Minkov, 2010). They were initially derived from data, collected within the IBM organization in 66 countries (Hofstede 1980). In the scientific community of FLL-research, cultures are usually classified by their collectivism-dimension and therefore as individualistic or collectivistic societies (Noels et al., 2000). This also applies for the criticism of the SDT because the collectivism-dimension is considered closest to and often confused with the basic psychological needs autonomy and relatedness (Ryan & Deci, 2000c). The central question of this dimension concerns whether the self is defined by “I” or “we” (Hofstede, n. d.). Individualism describes a culture in which its members live in a loose social network where individuals take personal responsibility only for themselves and their closest family members. Collectivistic cultures show closer social networks where individuals count on the support of a larger group of individuals in exchange for loyalty towards the collective (Hofstede, 2001; Hofstede & Minkov 2010). A problem of research based on the concept of Hofstede is that it often produced inconclusive results (Oyserman, Coon, & Memmelmeier, 2002). This may be due to the fact that Hofstede’s categories are only marginally applicable for individuals and are better suited to compare cultures as a whole (McSweeney, 2002). The cultural scales have no interpretive value of their own but rather possess comparative value (Hofstede & Minkov, 2010). A more focused approach that encompasses the aspects of individualism and collectivism (I/C), which seem most relevant for the SDT-research, is proposed by Yanagida, Strohmeier, Toda, and Spiel (2014). The dimension I/C is viewed as the “convergence of an individual’s opinion with an anchor group opinion. In other words [... the] psychological process in which self-group distinction is existent (= individualism) or negligible (= collectivism)” (Yanagida et al., 2014, p. 305). This means that individuals’ personal preferences are compared with the subjective group-opinion of a relevant peer group. Individuals who view themselves as highly distinct from their relevant peer group are considered individualistic, while a high congruency hints towards a collectivistic orientation.

Culture and SDT

Even though the SDT is criticized for making generalizability claims while not accounting for different cultures, there is quite a lot of research supporting the applicability of the SDT to different cultural contexts. For an overview of cross-cultural

research concerning the SDT, see Ma (2009). However, even researchers who support the view of the SDT (Noels et al., 2012, as cited in Noels, 2013) argue that the cross-cultural research on the SDT is still too limited in scope and diversity to ensure the generalizability of the SDT across cultures. Therefore, more research in countries not regarded yet, that are distinct in regards to collectivism and individualism, is needed (Noels, 2001; Noels et al., 2000, 2003; Noels, 2013). Or as Artelt (2005) argues in a broader sense: if a psychological theory tries to explain human behavior, cross-cultural comparison is vitally important, because “By investigating the cross-cultural validity of ‘laws’ of human behavior elaborated within one cultural area, it is possible to test the universality of these assumptions (which is often implicitly or explicitly taken for granted)” (p. 231).

Aim of this Study and Research Questions

To summarize, the SDT is a cognitive meta-theory of motivation. It assumes the four mini theories and their interactions to be generalizable. To further the cross-cultural investigation of the SDT in FLL-research and therefore partially answer Noel’s call is the aim of the current Study. In order to do so, this thesis will investigate the constructs of the SDT and its basic assumptions in an Iranian and a German sample. According to Hofstede’s (2001) culture theory, Germany is regarded as an individualistic culture, while Iran is considered a collectivistic culture. Hence, the following overarching research question will be investigated in this paper:

RQ: Are the proposed working mechanisms and interactions of the SDT applicable for Iran and Germany?

There is no widespread classification of cultures, using the self-group distinction method (Yanagida et al., 2014) yet. Therefore, even though the limited value of Hofstede’s classification system for this study is acknowledged, it is used for the categorization of the observed countries. As aforementioned, Iran and Germany were selected according Hofstede’s (1980) cultural theory as they are postulated to be distinct in individualism/collectivism, which is considered the most relevant dimension for cross-cultural comparisons in FLL-research. The Iranian population scores 41 points while Germany has a score of 67 in regards to collectivism (Hofstede, n. d.). A high score in this dimension signifies a low collectivism orientation or vice versa a high individualism orientation. Therefore, Iran is considered a relatively collectivistic society while Germany is considered a relatively individualistic society (Hofstede & Minkov, 2010). It is,

however, the case, that the “culture” may differ significantly within a country, or even a relatively confined region. Within the survey data from Hofstede (1980), there were significant within-country-differences (McSweeney, 2002). Because of the stark difference in individualism scores proposed by Hofstede (n. d.), a cross-cultural study of the SDT regarding those two cultures seems fruitful. However, because of the limited applicability of Hofstede’s cultural score for individuals’ cultural differences and the aforementioned intragroup differences between the samples are not assumed a priori. Therefore, the following research question will be examined:

RQ1: Does the Iranian sample show a more collectivistic orientation than the German sample regarding their self-group distinction scores in a statistically significant way?

As mentioned before, there is no universal consensus that the proposed working mechanisms of the SDT are generalizable for every culture. The SDT assumes the basic psychological needs to be universal regardless of the cultural context (Ryan & Deci, 2000b) assuming the need for autonomy as being the central need for motivation – as the name “Self-Determination Theory” indicates (Deci & Ryan, 1985a). This may seem trivial in a western context where the culture is characterized by high individuality but may not hold up in collectivistic cultures where other needs may take a more prominent position (Noels, 2013).

Autonomy

Some researchers have argued that autonomy is less congruent with collectivistic cultures (Iyengar & DeVoe, 2003; Iyengar & Lepper, 1999; Markus & Kitayama, 2003). Iyengar and Lepper (1999), for example, showed in their research, that there is a difference in task persistence between Asian American and European American children, depending on the level of autonomy. Choice enhanced the intrinsic motivation of the American children more than for their Asian counterparts. Vice versa, if a choice was made for them, American children showed less intrinsic motivation while their Asian peers were the most intrinsically motivated. Replying to this criticism, the authors of the SDT argue that the universality of the basic psychological needs does not assume universal outcomes (Ryan & Deci, 2000c). Despite the criticism, most empirical evidence in culturally diverse samples (e. g. Chen et al., 2015; d’Ailly, 2004; Deci et al., 2001; Rudy, Sheldon, Awong, & Tan, 2007; Vansteenkiste, Lens, Soenens, & Luyckx, 2006; Zhang, Li, Li, Li, & Zhang, 2015; Zhou, Ma, & Deci, 2009) supports the postulate of the SDT that even though individuals from different age cohorts or different cultures may express and satisfy their

basic psychological needs in different ways, everybody is likely to benefit from having the basic psychological needs satisfied (Deci & Ryan, 2000). This inconsistency may be due to the different view of autonomy among the researchers. Iyengar and Lepper (1999), for example equate choice and autonomy. As Miller, Das, and Chakravarthy (2011) pointed out, autonomy and choice are assumed to be distinct constructs and certain “restricting” circumstances may be more internalized by members of collectivistic cultures. This may be why members of a collectivistic society may still experience autonomy even though they had no objective choice in a particular task.

Competence

To foster intrinsic motivation, a task needs to be optimally challenging, therefore solvable but not too easy for the person (Deci & Ryan, 1985a). Compared to autonomy, there has been relatively little argument about the cultural appropriateness of the need for an optimal challenge in a particular task (Ma, 2009). However, Schmidt and Savage (1990, as cited in Ma, 2009) found evidence that Thai participants preferred low-challenge tasks to “optimally” challenging ones.

Relatedness

Research considering relatedness also produced some mixed results. The benefit of cooperative learning and therefore the satisfaction of the need to be attached to a certain group have been widely acknowledged in FLL and other research (Ma, 2009). However, some research indicates that in some cultures (e. g. South Korea and Egypt) a competitive setting is preferred to a cooperative one (Schmidt, 2008, as cited in Ma, 2009; Ma, 2009).

By examining the relationships between the basic psychological needs and different kinds of motivation and non-motivation within two culturally distinct samples, this study will try to add to the scientific discourse regarding the generalizability of the basic psychological needs and their outcomes.

RQ2: Does the satisfaction of the three basic psychological needs positively predict the perceived intrinsic motivation in Iran and Germany in a statistically significant way?

RQ3: Does the satisfaction of the three basic psychological needs positively predict the perceived autonomously regulated and negatively predict controlled regulated extrinsic motivation in Iran and Germany in a statistically significant way?

RQ4: Does the satisfaction of the three basic psychological needs negatively predict the perceived amotivation in Iran and Germany in a statistically significant way?

To test for these effects, a multigroup multivariate linear regression analysis using structural equation modelling is conducted.

The postulated continuum of relative autonomy of the organismic integration theory was tested by Ryan and Connell (1989). They found that the motivational regulation styles along a motivational continuum from intrinsic motivation to amotivation are more strongly intercorrelated with each other the closer the respective constructs are located on the continuum. Even though there is a lot of cross-cultural research considering the conditions for different types of motivation and possible outcome variables, no research was found addressing the appropriateness of the continuum itself for different cultures. However it seems important to test all aspects of a proposed model for adequacy in different cultural contexts.

RQ5: Do the types of motivation and motivational regulations lie along a continuum of relative autonomy in Iran and Germany?

To examine this postulate of the SDT, a structural equation model is tested, in which all kinds of motivation surveyed in this study are intercorrelated. Namely intrinsic motivation to know, accomplishment and stimulation as well as amotivation and extrinsically regulated, introjected and identified extrinsic motivation are regarded.

As aforementioned, the SDT postulates intrinsic and autonomous regulated extrinsic motivation to positively predict learning achievement. There is some research supporting this relationship in different cultural settings. In the Chinese region Wang (2008) was able to replicate the assumptions of the SDT for English learning. It was shown that autonomous extrinsic and intrinsic motivation were positively correlated with English achievement while controlled extrinsic motivation was negatively correlated to achievement. Pae (2008) replicated a study by Noels et al. (2000) in Korea where he found, using structural equation modelling, intrinsic motivation to be the strongest predictor of perceived language proficiency. By regarding the effects of motivational orientation in Germany and Iran, the current study will add to the body of research of SDT and FLL by testing whether this effect is applicable for second language learning in Iran and Germany. Thus, the following research question will be addressed:

RQ6: Does the motivational orientation predict the subjective language proficiency in different cultures in a statistically significant way?

To test for this effect a multigroup multiple regression analysis using structural equation modelling is conducted.

In contrast to Vallerand's (1997) motivational sequence model that assumed motivation to follow a specific path, Filak and Sheldon (2008) proposed a working model in which need satisfaction held predictive value on the dependent variable course performance. Therefore, the direct effect of the basic psychological needs on performance – a divergence from the original path model – and the mediating effect of motivational regulation seems worth exploring.

RQ7: Does the motivational orientation mediate the relationship between need satisfaction and subjective language proficiency in different cultures?

To test for this effect a multigroup mediation analysis using structural equation modelling is conducted. By examining a mediation model this study aims to account for possible direct as well as indirect effects of the basic psychological needs on subjective language proficiency assessment (SLP). It therefore tests the assumption of the SDT that motivation is the mediating factor between need satisfaction and outcome variables – in this case subjective language proficiency.

Therefore, this study examines (a) the effect of need satisfaction on motivational orientation, (b) the effect of motivational orientation on SLP and (c) the mediating role of motivational orientation between need satisfaction and SLP. As well as (d) the correlative interaction between the types of motivation along the motivational continuum.

Method

Participants and Procedure

The current study was part of an international research cooperation between the Iranian University Of Bojnourd and the University of Vienna in Austria. The schools were recruited via direct contact with the principals and teachers. In Iran a permission from the "Department of Education" was requested and given beforehand. Due to the fact that the Catholic Church is considered a private sponsor, no permission from the Bavarian department of education was needed for the German school. In an initial step teachers of the participating classes were asked to distribute an informed consent to the participants'

parents (see Appendix B1). Students without signed informed consent form their parents were not allowed to participate in this study. The voluntariness of the participation in this study and the anonymity of the data were emphasized.

The data collection in Iran was conducted by the Iranian partners while, the German data was collected by myself. A researcher was present during all survey sessions. Therefore, the analysis for this study is based on data collected from two samples from two distinct populations – Iran and Germany – with a sample size of 204 and 264 respectively. To accommodate the preference of the respective schools, the Iranian data was collected via online questionnaire, while the German data was collected via paper pencil questionnaire. Despite some potential problems of online questionnaires, such as uncontrollability of the environment, potential lack of anonymity or layout problems (Wharton, Hampl, Hall, & Winham, 2003), research has shown little to no difference in accuracy of reporting between paper pencil and online questionnaires (Fouladi, Mccarthy, & Moller, 2002; Vereecken, 2001). The participating Iranian schools were located in a major city in the north east of Iran. The German students were from a school located in a rural area in southern Germany. The German school is sponsored by the Roman Catholic Church and the school building is part of a convent. Data for the Iranian sample were collected during March and April 2015, while the German data was collected in October 2015– the very beginning of the school year 2015/2016 in Germany – in a time frame of one week. The German students were taught in a co-educational setting barring physical education, while the Iranian participants were educated in a mono-educational setting.

In the case of Germany, the students filled out the questionnaire during class. The instructions were printed on the front page of the instrument. After every participating student received a questionnaire, the instructions (see Appendix B2) were read aloud to ensure standardization. The experimenter explained that the students were participating in a study about need satisfaction and learning motivation. It was again underscored that the anonymity and confidence of the data would be upheld on every level of the data analysis and at all times. The students were asked to be as thorough as possible and that there were no wrong answers. To help to ensure the students put in their best effort in the completion of the instrument, no explicit time limit for filling out the questionnaire was given but even the youngest/slowest participants took no longer than 40 minutes including reading the instructions. In consultation with the teachers, a soft time limit of 45 minutes was set, corresponding to one teaching unit in Germany. The students had no knowledge

of this soft time limit. After all the questionnaires were collected, the students were thanked for their collaboration and the goal of the study was explained in more detail. The students had the possibility to ask further questions.

The samples were very similar in regards to age and gender distribution. The participants in general were students between the age of 13-18 with a mean age of 14.91 ($SD = .79$), 268 participants were female (57.3%). For the Iranian sample this means an age distribution ranging from 14-16 with a mean age of 14.95 ($SD = .41$) with 120 (58.8%) of the participants being female students and 84 (41.2%) being male students. In Germany the age ranged from 13 to 18 in with a mean age of 14.88 ($SD = .49$). Because in Germany it is possible to enter school earlier if the child is considered mature enough and to skip grades because of extraordinarily high school achievement 15 students at the age of 13, which represents 5.7% of the German sample size, were included. On the other hand, students showing low school performance may have to repeat a grade. Therefore, 11 students at the age of 17 (4.2%) and one student at the age of 18 (0.4%) were also included in the analysis. Of the surveyed participants 148 (56.1%) were female and 116 (43.9%) were male.

Measures

Because of the aforementioned cooperation with the University Of Bojnourd, the instrument used in this study consists of five subscales, whereas only four of those subscales are used in the current analysis. The fifth scale was included for an independent research project of the Iranian research partners.

School Engagement Scale – Behavioral, Emotional, and Cognitive Engagement

The School Engagement Scale – Behavioral, Emotional, and Cognitive Engagement (SES) (Fredericks, Blumenfeld, Friedel, & Paris, 2005), which has no relevance for this study was used to measure the school engagement of the students. (see Appendix C1)

Academic Motivation Scale (AMS-HS 28) High School Version.

To survey the academic motivation an adapted version of the AMS for High schools is used: the Academic motivation Scale, High school version (AMS-HS 28; Vallerand, Blais, Brière, & Pelletier, 1992) (see Appendix C2). The AMS was constructed by Vallerand et al. (1992) and validated by Vallerand et al. (1993). It is a translation of the French Echelle de Motivation en Education (EME) (Vallerand et al., 1989, as cited in Vallerand et al., 1992). The basic aim of the EME is to assess the underlying “why” of

engaging in an activity (Vallerand et al., 1992), therefore the AMS asks the question “Why do you go to college?”. The 28 items that comprise the AMS are answers to this question which are rated on a seven point Likert scale ranging from “Does not correspond at all” to “Corresponds exactly”. In the AMS-HS 28 the initial question is modified to “Why do you go to school?”. To provide a consistent answering format for all instruments regarding the SDT, the Likert scale was changed to 1=“completely disagree” to 7=“strongly agree”.

The AMS and therefore the AMS-HS 28 uses a modified version of the aforescribed SDT. In this modified theory intrinsic motivation is not viewed as a global construct but rather comprised of different kinds of intrinsic motivation (Deci, 1975), which has been derived from intrinsic motivation research conducted independently (Vallerand, et al., 1989, as cited in Vallerand et al., 1992). *Intrinsic motivation to know* is derived from educational research and encompasses the pleasure experienced while learning, exploring, trying to understand or search for the meaning of something (Vallerand et al., 1992). The *intrinsic motivation toward accomplishment* is derived from research in the realm of developmental psychology as well as educational psychology. It has to be differentiated from the extrinsic motivation to accomplish something because it does not focus on the outcome of the accomplishment but rather on the process of achieving itself (Vallerand et al., 1992). As an example for language learning, students who extend their learning efforts beyond the requirements for a good grade, just to experience the satisfaction to surpass themselves display intrinsic motivation towards accomplishment. Finally Vallerand et al. (1992) identified intrinsic motivation to experience stimulation as derived from flow research (e.g. Csikszentmihalyi, & Csikszentmihalyi, 1992). This construct encompasses the feeling of excitement when engaging in an activity. As mentioned above this scale also only regards the extrinsic motivational regulations external regulation, introjected regulation and identified regulation. The last construct, surveyed by this instrument, is amotivation. Each of the seven constructs was indicated by 4 items. The authors report Cronbach’s alpha of $\alpha = .85$ (amotivation, $\alpha = .83$ (external regulation), $\alpha = .84$ (introjected regulation), $\alpha = .62$ (identified regulation), $\alpha = .84$ (intrinsic motivation to know), $\alpha = .85$ (intrinsic motivation for accomplishment) and $\alpha = .86$ (intrinsic motivation for stimulation).

Basic Need Satisfaction in General (BNS-G)

To assess the basic need satisfaction in general the Basic Need Satisfaction in General (BNS-G) by Gagné (2003) was used (see Appendix C3). The BNS-G is an adaption of the measure of need satisfaction at work (Ilardi, Leone, Kasser, & Ryan, 1993, as cited in Gagné, 2003). The scale consists of 21 Items. Seven for need for autonomy, eight for the need for competence and six for the need for relatedness. The authors indicate an internal consistency score of $\alpha = .69$, $\alpha = .71$ and $\alpha = .86$ respectively. The internal consistency in this study and the value of Cronbach's alpha in general are discussed further down below. The original answer format was a seven point Likert scale ranging from 1 "Not at all true" to 7 "Very true". As with the AMS-HS 28 to provide a consistent answering format for all instruments regarding the SDT, the Likert scale was changed to 1 = "completely disagree" to 7 = "strongly agree".

Self-Group Distinction Scale (SGDS)

As Hofstede's (1980) classification of cultures was assumed to have too little explanatory value for specific samples, cultural individualism/collectivism tendencies of the students is surveyed via the Self-Group Distinction Scale (see Appendix C4) (SGDS) It is derived from the self-group distinction approach (Yanagida et al., 2014), which provides a highly focused perspective of collectivistic tendencies within a sample. The Self group distinction scale consists of two item blocks with equivalent content. The first scale asks for the individually perceived group opinion of the relevant anchor group (in this case the class) while the second scale asks for the personal opinion regarding the exact same topics. Each block was comprised of the same seven items, one regarding advice seeking, two regarding group activity and four regarding independence which represent the main content domains of collectivism/individualism (Yanagida et al., 2014). Because the individualism/collectivism score is a precondition of the analysis and therefore not part of the structural equation model, the scores were calculated as proposed by the authors and the original five point Likert scale format (1 "very good" to 5 "very bad") was maintained. The self-group distinction score is the convergence between perceived group opinion and personal opinion, meaning the difference is calculated for each item pair and the absolute values are averaged. The authors indicate an internal consistency of $\alpha = .72$.

All four scales were translated from English to Persian. The Self Group Distinction Scale (Yanagida et al., 2014) was originally designed in German, therefore only three of the four scales were translated from English to German. To maintain equivalence between

the original and translated versions, Brislin's (1970) classical iterative back-translation approach was used. First, a bilingual translator (in the case of Germany the author of this thesis) translated the instruments from their original language (English) to the target language (Iranian or German). A second bilingual translator independently back-translated the instruments from the target language back to the original language. In the German case the concept equivalency of the original and translated instrument was assessed by a focus group comprised of psychology students enrolled in the psychology master program of the University of Vienna. In a last step equivalence errors and potentially misleading or blurry translations were corrected.

Subjective Language Proficiency Assessment

Lastly, the outcome score for this study was measured by a subjective language proficiency assessment of the students (see Appendix C5). The students were given four statements (speaking, understanding, reading, writing) regarding a high language proficiency, they indicated on a seven point Likert scale ranging from 1 "strongly disagree" to 7 "strongly agree" how much they perceived those statements to be true for them. Actual academic achievement as in achieved grades is a highly reliable dependent variable for motivational research (Diseth & Samdal, 2014). However, the scales measuring the dimensions of the SDT are all self-report measurements and the grading systems of different school systems in different countries may vastly differ. To keep the data collection methods as similar as possible and to use a cross-culturally comparable measurement of academic performance, a self-report questionnaire for the assessment of performance was preferred. Students' self-reported perceived level of academic performance can be considered a practical, reliable indicator of academic achievement (Felder-Puig et al., 2012) that is not only comparable among different school systems but also provides another layer of protection for the respondents' anonymity as it does not require disclosure of personal information (Diseth & Samdal, 2014).

The data were analyzed on multiple levels using IBM SPSS Statistics 20 (henceforth referred to as SPSS) for descriptive analysis and to address research question 1. Regarding RQ2-RQ7, and therefore computing the hypothesized models of relationship between the different constructs, as well as conducting a confirmatory factor analysis of the measurement models, the latent variable modeling program Mplus 7.3 (Muthén & Muthén, 1998-2015) was used.

Preliminary Analyses

Self-Group-Distinction

Before conducting a structural equation model the basic assumption that the German and the Iranian sample differ significantly in their assessed self-group distinction (RQ1.) was tested. A general SGD score of individualism/collectivism was computed by adding the absolute values of the difference between personal opinion and group opinion and averaging this value over the number of item pairs (7).

Missing Data

The data set was examined for missing data showing that less than 1% of the data were missing (0.15%). The structure of the missing data was examined and no systematic pattern was observed, therefore a missing completely at random mechanism (MCAR) was assumed. The missing data were estimated with the full information maximum likelihood estimation (FIML) also known as raw score likelihood method (McDonald & Ho, 2002). In the FIML approach a likelihood function for each case is computed, using only variables that are observed for cases, this function is maximized (Vandercammen, Hofmans, & Theuns, 2014). The FIML has various advantages over the more widely used listwise and pairwise deletion. First and foremost, it does not delete cases because of unsystematically missing values, which is why it preserves the original sample size and therefore more information. Additionally, the FIML estimates were shown to be more efficient and produce less biased parameter estimations in the MCAR and MAR (missing at random) condition (Enders & Bandalos, 2001; Vandercammen et al., 2014).

Structural Equation Modelling

With significant individualism/collectivism differences being established, the RQ2-7 will be tested via structural equation modelling using Mplus 7.3. The structural equation model is a statistical hypothesis that consists of two parts: the measurement model and the path model. In the measurement model a set of p observed variables represent the indicators of a smaller set of m latent variables. The path model describes the predictive relationship (regression) between the latent variables. Together the measurement and the path model constitute the structural model (McDonald & Ho, 2002). In this study the measurement model is a confirmatory factor model, this means that the latent variables are viewed as the common latent factor of the observed variables with no correlations

between the errors assumed. Observed variables are specified to load uniquely on a latent construct and therefore are not correlated with more than one latent factor, while the latent factors are assumed to correlate with various other latent factors in either an expected direction or bidirectional. The unique loading pattern of the indicators therefore means that an item measures only the common latent factor and an unexplained error. This is a sufficient condition for the identifiability of the measurement model (McDonald, 1999). Directional paths may be assumed to be “causal” (Pearl, 2000, as cited in McDonald & Ho, 2002) representations of effects, while bidirectional paths are viewed as “disturbances” (McDonald & Ho, 2002, p. 66) which are not explained by the model. Even though I do not propose any “causality” interaction per se, based on the strong theoretical support a direction of several paths in the path model is assumed. This means that the current model is a recursive model with the paths not being circular and the error terms of the variables involved in a regression being uncorrelated.

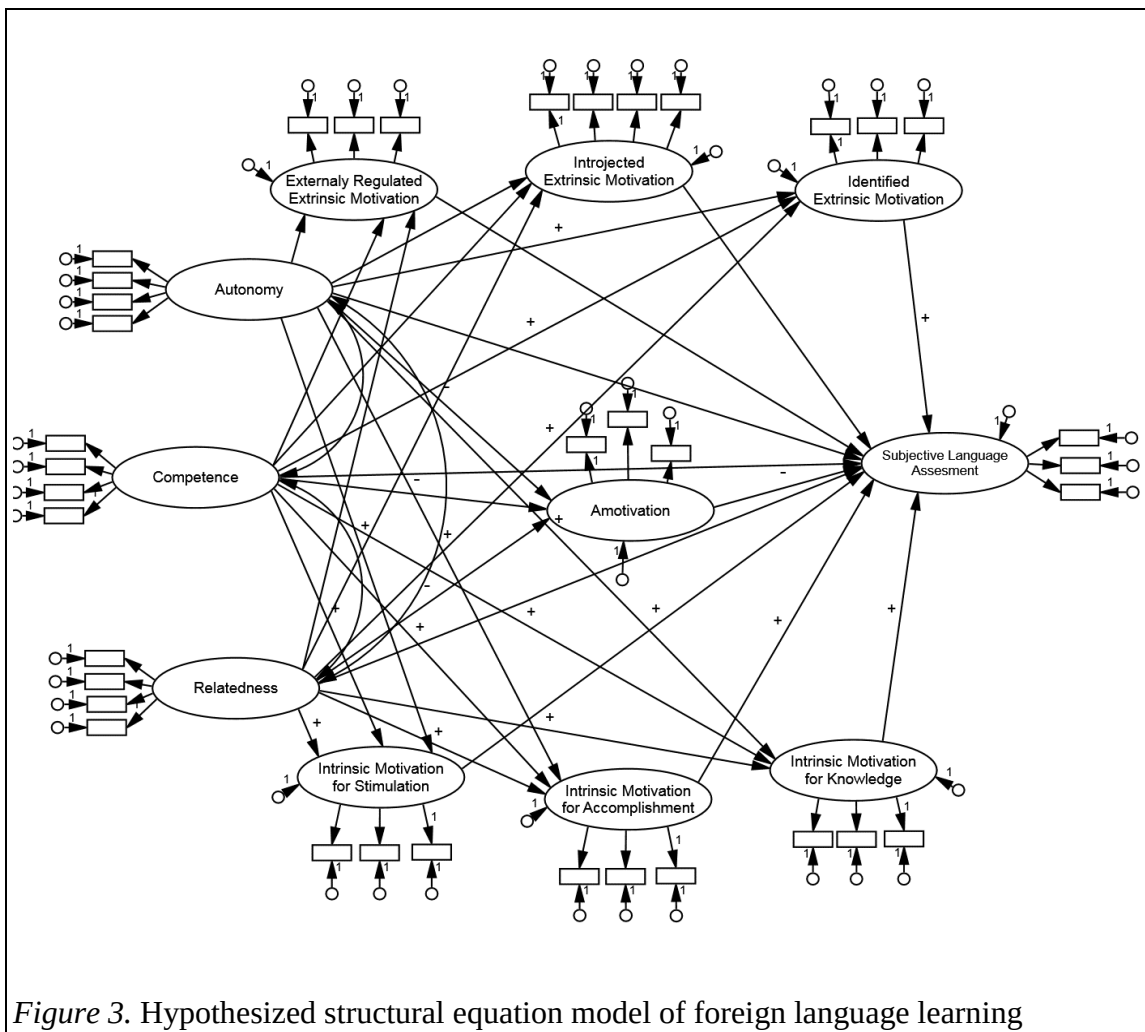
Confirmatory Factor Analysis

In line with the broad theoretical background and founded on the research of scale constructors, the factor structure was defined a priori. Therefore as the first step of structural equation modelling, the measurement models were tested via confirmatory factor analysis. As Thompson (2004) argued “It makes little sense to relate constructs within an SEM model if the factors specified as part of the model are not worthy of further attention” (p. 110). Confirmatory factor analysis is a powerful tool for factor analytic problems because it allows for explicit testing of theoretically founded hypotheses, in which observed variables are assigned to latent constructs a priori (McDonald & Ho, 2002). SEM is recognized to be merely an approximation to reality and no hypothesis that might be true (McDonald & Ho, 2002). Therefore, in order to assess the quality of the a priori measurement models several indices of model fit were examined. Model fit describes how well the empirical data correspond to the theoretical model and therefor indicates whether to reject or accept the proposed model. The overall (global) model fit was examined using the chi-square test. A significant chi-square indicates a poor model fit for the sample data. However, because the chi-square may be biased due to influences like sample size (McDonald & Ho, 2002), the two-index presentation strategy as proposed by Hu and Bentler (1999) is applied using the comparative-fit-index (CFI) and the root-means square-error-of-approximation (RMSEA). The CFI is an incremental fit index. It assesses if the target model fits the data better than the independence model (baseline

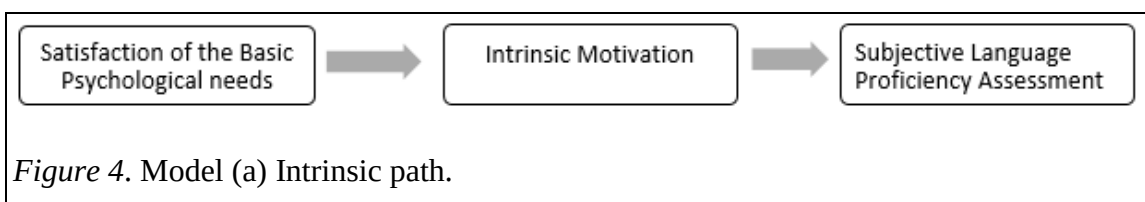
model). The independence model assumes the variables to not be related. The RMSEA on the other hand is a measurement of approximate data fit (Geißer, 2010). The CFA was computed for a multigroup analysis. In doing so the differences between Iran and Germany within the measurement approach was represented in the model fit indices. The measurement models were assessed on the quality of the model fit as well as the quality of the factor loadings. When an item showed poor factor loadings or the loadings were extremely different between the two groups or the measurement model showed poor model fit, the items were successively excluded. The following model fit indices are regarded acceptable and good respectively: CFI > .90/.95, RMSEA < .08/.06 (Marsh, Hau, & Wen, 2004). As it is not part of the central SEM, no CFA was conducted for the Self-Group Distinction Scale (Yanagida et al., 2014).

Path Model

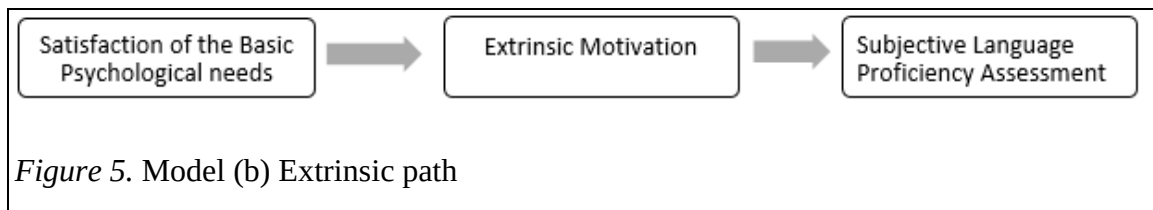
Based on the measurement models that were adjusted through the CFA, a modified structural equation model was specified (Figure 3). The three basic psychological needs are hypothesized to predict all types of self-determined motivation, namely identified regulated extrinsic motivation, intrinsic motivation for accomplishment, intrinsic motivation for knowledge and intrinsic motivation for stimulation. Furthermore, the different types of self-determined motivation are assumed to positively predict the subjective language proficiency assessment. Amotivation is hypothesized to be negatively predicted by the three basic psychological needs and negatively predicting the subjective language proficiency assessment. The predicting constructs of basic psychological needs as well as the residuals of the mediating constructs of intrinsic and extrinsic motivation were allowed to correlate with the constructs of intrinsic and extrinsic motivation respectively, following the recommendations of Vallerand (2001, as cited in Standage, Duda, & Ntoumanis, 2003).



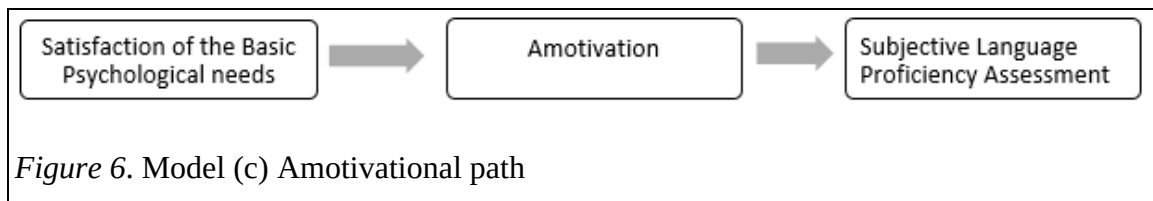
Due to the high complexity of the general model, it was divided into three path models and one intercorrelation model. The three paths were determined by the three initial motivational distinctions as proposed by Deci and Ryan (1985b). The first part of the model (lower part) represents the intrinsic motivational path (a). The intrinsic motivational part includes all three kinds of intrinsic motivation as proposed by Vallerand et al. (1992).



The second model represents upper part of the general model – the extrinsic motivational part (b). The part of extrinsic motivation includes the three motivational regulations incorporated in the model of Ryan and Connell (1989): externally regulated, introjected and identified extrinsic motivation.

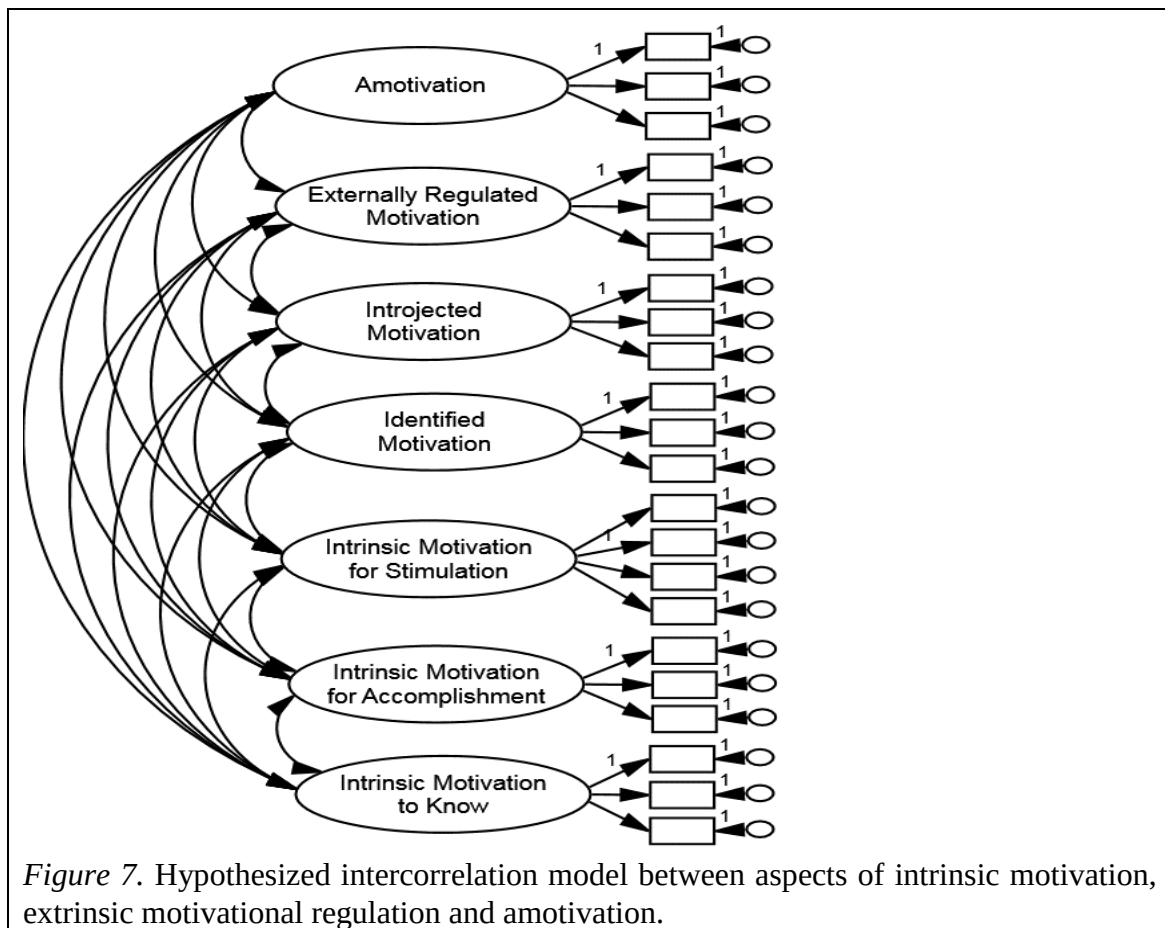


The last model solely includes the latent construct of amotivation as a mediator. It therefore represents the central amotivational path (c). Note that the location of the paths is completely arbitrary and is of no theoretical or analytical importance.



Each part of the model includes the three basic psychological needs and the subjective language proficiency assessment. For research question 5 – *Do the types of motivation and motivational regulations lie along a continuum of relative autonomy in Iran and Germany?* – an intercorrelation model was created incorporating the three aspects of intrinsic motivation, the three regulation styles of extrinsic motivation and amotivation (Figure 7).

A full latent factor model was computed for each model. Because of identifiability issues in a gradual process the factor loadings were fixed to the values established in the confirmatory factor analysis. In the end, to accomplish an identifiable model, all factor loadings had to be fixed. This resulted in a general path model with specific measurement models for Germany and Iran, accounting for varying factor loadings between the two samples. Furthermore the model was optimized by allowing errors of indices to covariate. Appropriate covariates were determined by using modification indices. Only items of the same latent construct were allowed to covariate. The cut-offs for model fit were set according to scientific convention. For the RMSEA values smaller than .06 are regarded as a good model fit, values smaller than .08 are regarded as acceptable. For the CFI model fit values greater than .90 are regarded as acceptable (McDonald & Ho, 2002).



Descriptive Analysis

A descriptive data analysis showed that the data was not normally distributed. Several items showed z-values of skewness and kurtosis higher or lower than the critical value of the normal distribution ± 1.96 $\alpha = .05$ (see Table 1 for descriptive statistics of the measurement model and Appendix D Table D1 and Table D2 for item statistics) (George & Mallery 2010). Because normal distribution is a necessary if not sufficient condition of multivariate normality a basic assumption (Stevens, 1996) of ML estimation was violated. To account for this fact the robust estimator MLR (Brown, 2015; Efron & Tibshirani, 1993) was used.

Table 1
Descriptive Statistics for each measure

					Skewness			Kurtosis		
Scales	N	Mean	Range	SD	Skewness	SE Skewness	Z- Skewness	Kurtosis	SE Kurtosis	Z- Kurtosis
Iran										
1. Autonomy	204	4.31	1-7	1.09	-0.47	.17	-2.78	0.07	.339	0.20
2. Competence	204	4.75	1-7	1.64	-0.33	.17	-1.95	-1.21	.339	-3.57
3. Relatedness	204	5.93	1-7	0.97	-1.42	.17	-8.36	2.08	.339	6.13
4. Amotivation	204	3.73	1-7	1.26	0.13	.17	0.77	-0.49	.339	-1.46
5. External regulated motivation	204	6.02	1-7	0.85	-1.33	.17	-7.82	3.12	.339	9.22
6. Introjected regulated motivation	204	5.63	1-7	0.82	-0.86	.17	-5.05	1.14	.339	3.37
7. Identified regulation	204	5.77	1-7	0.92	-0.42	.17	-2.47	-0.86	.339	-2.55
8. Intrinsic motivation for Accomplishment	204	5.45	1-7	1.31	-0.39	.17	-2.30	-1.21	.339	-3.58
9. Intrinsic motivation for knowledge	204	4.34	1-7	1.57	-0.31	.17	-1.82	-1.38	.339	-4.08
10. Intrinsic motivation for stimulation	204	4.23	1-7	1.78	-0.21	.17	-1.20	-1.56	.339	-4.60
11. Subjective language assessment	204	4.33	1-7	1.11	-0.19	.17	-1.14	-0.83	.339	-2.45
Germany										
1. Autonomy	264	5.33	1-7	0.98	-0.86	.15	-5.73	0.59	.299	1.96
2. Competence	256	4.92	1-7	1.05	-0.28	.15	-1.84	-0.33	.303	-1.10
3. Relatedness	263	6.06	1-7	0.68	-2.10	.15	-14.01	11.26	.299	37.61
4. Amotivation	259	2.03	1-7	1.19	1.17	.15	7.74	0.64	.302	2.11
5. External regulated motivation	262	5.89	1-7	1.09	-1.48	.15	-9.86	2.48	.300	8.26
6. Introjected regulated motivation	262	4.50	1-7	1.48	-0.56	.15	-3.70	-0.48	.300	-1.59
7. Identified regulation	262	5.56	1-7	1.17	-1.05	.15	-6.96	0.88	.300	2.95
8. Intrinsic motivation for Accomplishment	262	3.61	1-7	1.34	0.05	.15	0.34	-0.43	.300	-1.42
9. Intrinsic motivation for knowledge	261	4.35	1-7	1.31	-0.43	.15	-2.87	-0.18	.300	-0.59
10. Intrinsic motivation for stimulation	261	3.57	1-7	1.33	-0.11	.15	-0.73	-0.87	.300	-2.91
11. Subjective language assessment	264	5.42	1-7	0.89	-1.35	.15	-8.98	2.74	.299	9.19

Note: Z-Skewness= *Skewness/SE Skewness*; Z-Kurtosis= *Kurtosis/SE Kurtosis*

Cronbach's Alpha vs Composite Reliability

In this thesis two measures of reliability are used. First off, to compare the reliability values of this thesis and the given reliability scores of the instruments' developers Cronbach's alpha (α) is calculated via SPSS. α has been criticized by several authors because it is based on three assumptions which are likely to be violated (Yang & Green, 2011). Alpha assumes that each item's observed score is the sum of true score and error, it assumes τ (tau) equivalency indicating that all items have equal loadings and thirdly it assumes that the error scores are uncorrelated (Starkweather, 2012). Because of modern

statistical programs and cheaper computing power α is likely to lose its dominant status and will be replaced by more robust measures of reliability such as composite reliability (Starkweather, 2012). Composite reliability refers to a broad group of reliability estimates which account for the individual contribution of each latent factor and item error. They provide a much less biased estimate for reliability. In this thesis, the composite reliability point estimation of Raykov (1997, as cited in Raykov, 2009) was computed as seen in Equation 1.

$$CR = \frac{(\sum_{i=1}^k b_i)^2}{(\sum_{i=1}^k b_i)^2 + \sum_{i=1}^k Var(\varepsilon_i)} \triangleq \frac{(\sum factor loadings)^2}{(\sum factor loadings)^2 + \sum measurement error variances} \quad (1)$$

Item Exclusion

Because the model fit indices indicated a poor model fit of several measurement models and because some items displayed poor standardized factor loadings the items were excluded in the following order: For autonomy the following items were excluded “In my daily life, I frequently have to do what I am told.” (N11_AUT_R), “I feel pressured in my life.” (N4_AUT_R) and “There is not much opportunity for me to decide for myself how to do things in my daily life” (N20_AUT_R). For competence the following items were excluded “I have been able to learn interesting new skills recently.” (N10COM) and “Most days I feel a sense of accomplishment from what I do.” (N13COM) For the latent variable relatedness the following items were excluded from the analysis “There are not many people that I am close to.” (N16_REL-R), “The people I interact with regularly do not seem to like me much.” (N18_REL_R), “I pretty much keep to myself and don't have a lot of social contacts.” (N7_REL_R) and “I consider the people I regularly interact with to be my friends.” (N9_REL). For amotivation, intrinsic and extrinsic motivation only one item for each control dimension was excluded: “Because I want to have "the good life" later on” (M15EXEX), “Because of the fact that when I succeed in school I feel important.” (M14EXINT), “Because eventually it will enable me to enter the job market in a field that I like.”(M10EX_ID), “For the satisfaction I feel when I am in the process of accomplishing difficult academic activities” (M20INTAC), “Because I experience pleasure and satisfaction while learning new things.” (M2INTKN), “Because for me, school is fun” (M11INTST) and “Honestly, I don't know; I really feel that I am wasting my time in school” (M5_AMO). Finally for the competence self-assessment the item “I can write about every topic in English very well” (WIRTE) had to be excluded.

Results

t-Test for Cultural Differences

To answer RQ1 a t-test was conducted. The Iranian sample on average showed a higher SGD score ($M = .84$, $SD = .33$) than their German counterparts ($M = .71$, $SD = .39$). Because the normal distribution assumption for the t-test was violated (see Appendix D Table D3 and Table D4 for skewness and kurtosis) bootstrapping was performed. Bootstrapping estimates the properties of the distribution of the sample data by taking many smaller subsamples of the given sample (Field, 2009). 10 000 subsamples were drawn for each model. The Iranian and German sample showed significant differences in the general self-group distinction ($t = 3.878$, $p < .001$). Therefore, contrary to expectations, the Iranian sample was significantly more individualistically oriented than the German. The Iranian participants showed a higher individualistic orientation in all sub domains of individualism and collectivism measured by the SGDS in general as well as in every single item except “What does your class think/What do you think of other classmates, who want to push through their own opinion?”. Even though self-group distinction is contrary to the initial expectation a significant cultural difference is abundant, therefore a cultural comparison is warranted.

Measurement Models

After the exclusion of items that displayed a poor or inconsistent model fit the CFA resulted in standardized factor loadings ranging from $\lambda = .463$ to $\lambda = .975$ in the Iranian sample and from $\lambda = .436$ to $\lambda = .857$ in the German sample. For a detailed list of the factor loadings see Appendix D Table D5. Standardized factor loadings can be interpreted as the correlation between the observed variable and the latent factor (Geiser, 2011). The final model fit indices for a multigroup model are displayed in Table 2.

Table 2
Measurement model fit indices for a multigroup comparison

Variable	<i>df</i>	χ^2	<i>p</i>	RMSEA	CFI
Basic psychological needs					
Autonomy	10	28.58	.01	.089	.977
Competence	10	49.22	.01	.129	.949
Relatedness	10	36.31	.01	.106	.931
Extrinsic motivation					
Extrinsic external	4	22.30	.01	.140	.922
Extrinsic introjected	4	11.93	.02	.092	.977
Extrinsic identified	4	3.39	.49	0	1
Amotivation	4	8.36	.08	.068	.990
Intrinsic motivation					
Intrinsic accomplishment	4	24.58	.01	.148	.938
Intrinsic knowledge	10	6.74	.01	.147	.947
Intrinsic accomplishment	4	6.16	.19	.048	.996
Outcome variables					
Language proficiency	4	58.43	.01	.241	.816
Emotional engagement	10	41.53	.01	.116	.963

Note: *df* = degrees of freedom, *p* refers to the significance level of chi squared.

Although not attaining the standards (Hu & Bentler, 1999) for two of the regarded model fit indices (χ^2 not significant, RMSEA < .06) the CFI of all measurement models indicated a very good (CFI > 0.95) to good (CFI > 0.90) model fit¹, except for the subjective language proficiency scale (CFI = 0.82). Nevertheless, because of the theoretical importance of an outcome measurement the subjective language proficiency remained in the structural equation model. Thus the postulated measurement model structure of the SES, AMS-HS 28, BNS-G and SGDS with excluded items is generally supported in both samples while still accounting for group differences.

After a satisfactory measurement model was achieved the scales were tested for reliability. As shown in Table 3., the reliability scores of composite reliability and Cronbach's alpha were almost equal, therefore the assumptions for Cronbach's α seem to be applicable for this sample. Both measures for reliability showed decent (CR= .65) to excellent (CR= .95) reliability scores except for the measurement for competence in the German sample (α = .65; CR= .54). Even though the measurements for autonomy and competence showed reliability scores below most criterions e. g. Nunnally's criterion of

¹ According to Andreas Pfaffel (personal communication 2016) a „Bussi feiner“ model fit for a measurement model.

$\alpha > .70$ (1978) they were retained because of their theoretical importance and because the α value exceeds the critical value of $\alpha < .5$ for unacceptable reliability (Field, 2009). After the item reduction the internal consistency measures were comparable or in the case of Iran exceeded the Cronbach's α given by the instrument developers (See Table 3). However, it has to be acknowledged that, due to the exclusion of several items, the internal consistencies of the scales are only marginally comparable.

Table 3
Reliability scores for the latent constructs

	Iran		Germany		All	Original
	CR	α	CR	α	CR	α
Needs						
Autonomy	.93	.93	.65	.64	.83	.69
Competence	.91	.92	.54	.65	.79	.71
Relatedness	.87	.87	.71	.70	.80	.86
Extrinsic motivation						
Extrinsic external	.80	.80	.78	.77	.78	.86
Extrinsic introjected	.81	.81	.789	.79	.83	.81
Extrinsic identified	.74	.72	.72	.70	.73	.60
Amotivation	.91	.93	.75	.74	.89	.86
Intrinsic motivation						
Intrinsic accomplishment	.86	.86	.75	.73	.86	.78
Intrinsic knowledge	.95	.95	.87	.87	.905	.79
Intrinsic stimulation	.94	.94	.67	.66	.84	.81
Language proficiency	.78	.76	.75	.74	.76	x

Note: α and Composite Reliability (CR) are computed for each group separately, additionally CR was computed for the whole sample. Original α refers to the internal consistency reported by the developers of the respective measurements. $n_{(Iran)} = 204$; $n_{(Germany)} = 264$

Intercorrelation

An inspection of the intercorrelation matrix of the latent constructs (Table 4) suggest that a number of latent variables (constructs) are significantly correlated. In Iran most notably, the subjective language proficiency is moderately to highly positively correlated with every aspect of intrinsic motivation ($r = .70 - r = .63$), with relatedness having the strongest relationship. Concerning the German scales no significant correlation of these constructs was found. The aspects of intrinsic motivation in turn are also strongly to moderately positively correlated with each other ($r = .90 - r = .70$) and also moderately negatively correlated with amotivation ($r = -.56$ and $r = -.61$). Furthermore, the basic psychological needs are significantly positively correlated with the autonomous regulated aspects of motivation with competence having the strongest relationship (identified

regulation $r = .68$ and the aspects of intrinsic motivation $r = .66 - r = .75$) and negatively correlated with amotivation ($r = -.18 - r = -.46$). Furthermore the basic psychological needs were not at all (autonomy and relatedness) to moderately (competence and relatedness $cov = 0.862$, $SE = .142$, $r = .424$, $p < .01$) correlated with each other.

Table 4
Bivariate Correlations Among latent Variables

IRAN	1	2	3	4	5	6	7	8	9	10
1. Autonomy	1									
2. Competence	.169*	1								
3. Relatedness	.067	.424*	1							
4. Amotivation	-.178*	-.459*	-.213*	1						
5. External regulated	-.042	.121	.206*	-.351*	1					
6. Introjected regulated	-.126	-.197*	.069	.223*	.476*	1				
7. Identified regulation	.261*	.683*	.392*	-.640*	.306*	-.297	1			
8. Intrinsic m. for accomplishment	.305*	.658*	.386*	-.682*	.208*	-.287*	.902*	1		
9. Intrinsic m. for knowledge	.248*	.673*	.386*	-.517*	.154	-.282*	.846*	.886*	1	
10. Intrinsic m. for stimulation	.302*	.750*	.435*	-.600*	.172*	-.324*	.950*	.901*	.847*	1
11. Language proficiency	.212*	.612*	.293*	-.385*	.105	-.255*	.599*	.633*	.671*	.700*
GERMANY	1	2	3	4	5	6	7	8	9	10
1. Autonomy	1									
2. Competence	.816*	1								
3. Relatedness	.759*	.544*	1							
4. Amotivation	-.213*	-.337*	-.091	1						
5. External regulated	.054	.077	.061	-.158	1					
6. Introjected regulated	.432*	.204*	.250*	-.184*	.281*	1				
7. Identified regulation	.005	.053	-.022	-.472*	.638*	.320*	1			
8. Intrinsic m. for accomplishment	.144*	.218*	-.008	-.344*	.044	.751*	.221*	1		
9. Intrinsic m. for knowledge	.218*	.221*	.028	-.514*	-.035	.504*	.311*	.737*	1	
10. Intrinsic m. for stimulation	.047	-.069	.044	-.557*	-.003	.472*	.370*	.700*	.855*	1
11. Language proficiency	.084	.174*	-.005	-.124*	.162*	.173*	.055	.198*	.119	.013

Note: *Significant bivariate correlations at $p < .05$; Values above the diagonal are incorporated in the intercorrelation model. $n_{(Iran)} = 204$; $n_{(Germany)} = 264$

The scales used in Germany, on the other hand, showed fewer moderate to strong relationships in general, however, the basic need satisfaction scales showed a moderate to strong positive relationship with each other: competence and autonomy ($b = 1.556$, $SE = .237$, $r = .816$, $p < .01$), competence and relatedness ($b = 0.693$, $SE = .142$, $r = .544$, $p < .01$) and autonomy and relatedness ($b = 0.986$, $SE = .213$, $r = .759$, $p < .01$), and autonomy was moderately related to introjected regulated extrinsic motivation ($r = .43$). Further correlations are discussed in the intercorrelation model of motivation.

Intrinsic Model (RQ2, RQ6 & RQ7)

For the multigroup condition the SEM analysis results for Model (a - intrinsic) showed that the hypothesized structure showed a close to acceptable model fit. The χ^2 (1226.196, $df = 138$, $p < .01$) was significant and the RMSEA (.071) was $> .06$ therefore indicating an insufficient model fit but the CFI (.896) showed a very close to acceptable model fit. The model was improved according to the modification indices. For the Iranian sample the errors of the need for competence items N15COM_R² and N19COM_R³ as well as N3COM_R⁴ and N5COM⁵ were allowed to covariate. For the German sample a covariance between the following items was allowed: For the subjective language proficiency assessment items LISTEN⁶ and SPEAK⁷, for the need for competence item N19COM_R³ and N3COM_R⁴ and for intrinsic motivation item M11INTST⁸ and M4INTSTI⁹, M25INTST¹⁰ and M4INTSTI⁹, M25INTST¹⁰ and M11INTST⁸ and M25INTST¹⁰ and M18INTST¹¹. This resulted in an improved model fit of χ^2 (1024.478, $df = 146$, $p < .01$), RMSEA (.06) and the CFI (.927) indicating an acceptable model fit for the multigroup model of path (a - intrinsic). No further adjustments of the model were theoretically viable.

In regards to RQ2 it was found, that for the Iranian sample intrinsic motivation for stimulation was significantly predicted by autonomy ($b = 0.336$, $SE = .074$, $\beta = .213$, $p < .01$) relatedness ($b = 0.315$, $SE = .106$, $\beta = .194$, $p < .01$) and competence ($b = 0.686$, $SE = .064$, $\beta = .691$, $p < .01$). Intrinsic motivation to know was also significantly predicted by autonomy ($b = 0.217$, $SE = .080$, $\beta = .152$, $p < .01$) relatedness ($b = 0.249$, $SE = .108$, $\beta = .170$, $p < .01$) and competence ($b = 0.578$, $SE = .061$, $\beta = .594$, $p < .01$) and so was intrinsic motivation for accomplishment ($b = 0.307$, $SE = .081$, $\beta = .247$, $p < .01$) relatedness ($b = 0.244$, $SE = .098$, $\beta = .190$, $p < .05$) and competence ($b = 0.466$, $SE = .065$, $\beta = .594$, $p < .01$). Regarding RQ6, subjective language proficiency (SLP)

² In my life I do not get much of a chance to show how capable I am

³ I often do not feel very capable.

⁴ "Often, I do not feel very competent"

⁵ "People I know tell me I am good at what I do"

⁶ I can understand English movies and news very well.

⁷ I can speak English very well.

⁸ Because for me, school is fun

⁹ Because I really like going to school.

¹⁰ For the "high" feeling that I experience while reading about various interesting subjects.

¹¹ For the pleasure that I experience when I am taken by discussions with interesting teachers.

assessment was only significantly predicted by intrinsic motivation for stimulation ($b = 0.385$, $SE = .117$, $\beta = .535$, $p < .01$).

As would be expected with the aforementioned results, in the mediation analysis (RQ7) SLP was only significantly predicted through the mediator intrinsic motivation to know by autonomy ($b = 0.114$, $SE = .046$, $\beta = .114$, $p < .01$), competence ($b = 0.264$, $SE = .084$, $\beta = .341$, $p < .01$) and relatedness ($b = 0.121$, $SE = .055$, $\beta = .104$, $p < .05$). No direct effect between the basic psychological needs and SLP was significant. For the German sample no significant direct or indirect predictive relationship was found.

When looking at model (a - intrinsic) separately for each sample, the model showed better model fit for the Iranian sample χ^2 (390.97, $df = 80$, $p < .01$) RMSEA (.047) CFI (.974) than the German sample χ^2 (450.49, $df = 84$, $p < .01$) RMSEA (.051) CFI (.906).

Extrinsic Model (RQ3, RQ6 & RQ7)

For the multigroup condition the SEM analysis results for Model (b) showed that the hypothesized structure showed no good model fit. The χ^2 (978.66, $df = 139$, $p < .01$) was significant and therefore indicates an insufficient model fit. However, the RMSEA (.063, $p < .01$) and the CFI (.88), even though also not sufficiently low or high enough, are close to appropriate levels (.06 & .90 respectively). According to the modification indices the model was improved by allowing covariance between the errors of item N15COM_R² and N19COM_R³ as well as item N3COM_R⁴ and N5COM⁵ of the competence scale for the Iranian sample. For the German sample covariance between items N19COM_R³ and N3COM_R⁴ of the competence scale was allowed. This resulted in an improved model fit of χ^2 (910.90, $df = 138$, $p < .01$), RMSEA (.058, $p < .01$) and the CFI (.905). Further optimization of the model according to the modification indices led to an under identification of the model or was theoretically not justifiable.

In regards to RQ3 it was found, that for the Iranian sample introjected regulated extrinsic motivation was only significantly negatively predicted by competence ($b = -0.156$, $SE = .048$, $\beta = -.279$, $p < .01$). Identified regulated extrinsic motivation was significantly predicted by all three basic psychological needs: autonomy $b = 0.216$ ($SE = .059$, $\beta = .220$, $p < .01$), relatedness $b = 0.197$ ($SE = .071$, $\beta = .195$, $p < .01$) and competence $b = 0.453$ ($SE = .049$, $\beta = .674$, $p < .01$). Regarding RQ6, SLP was positively predicted by identified regulated extrinsic motivation in a statistically significant way ($b = 1.065$, SE

= .309, $\beta = .921$, $p < .01$). Externally regulated extrinsic motivation was not significantly predicted by any of the basic psychological needs.

For the mediation model (RQ7) identified regulated extrinsic motivation was the sole mediator for the indirect effects of need satisfaction on SLP. The effect of autonomy on SLP was fully mediated through identified regulated extrinsic motivation ($b = 0.231$, $SE = .092$, $\beta = .203$, $p < .05$). The same is true for the other two basic psychological needs relatedness ($b = 0.210$, $SE = .102$, $\beta = .179$, $p < .05$) and competence ($b = 0.482$, $SE = .147$, $\beta = .620$, $p < .01$)

As in model (a) no significant predictive effect was found for the German sample in model (b).

When computing the model (b) separately for the samples, the model showed better model fit in the Iranian sample $\chi^2 (377.89, df = 77, p < .01)$ RMSEA (.051) CFI (.96) than the German sample $\chi^2 (420.91, df = 77, p < .01)$ RMSEA (.052) CFI (.87).

Amotivation Model (RQ4, RQ6 & RQ7)

For the multigroup condition the SEM analysis results for Model (c - amotivation) showed that the hypothesized structure showed no good model fit. The $\chi^2 (666.62, df = 91, p < .01)$ was significant and therefore indicates an insufficient model fit. The model fit indices RMSEA (.075, $p < .01$) and the CFI (.886) also were not sufficiently low or high enough. The model was optimized according to the modification indices. Between the following items, covariance between the errors was allowed: In the German sample the items N19COM_R³ and N3COM_R⁴ of the competence scale were allowed to covariate as well as the items LISTEN⁶ and SPEAK⁷ of the subjective language proficiency assessment scale. For the latent scale of amotivation the item M26_AMO¹² was allowed to covariate with M19_AMO¹³ and M12_AMO¹⁴ was allowed to covariate with M26_AMO¹². For the Iranian sample the errors of N15COM_R² and N19COM_R³ as well as item errors of N3COM_R⁴ and N5COM⁵ of the competence scale were allowed to covariate. This resulted in an improved model fit of $\chi^2 = 571.98 (df = 95, p < .01)$. The RMSEA of .066 ($p < .01$) is close to the value of .06 and below the critical value of .08 which is considered acceptable while the CFI (.913) moves above the threshold of .90

¹² I don't know; I can't understand what I am doing in school.

¹³ I can't see why I go to school and frankly, I couldn't care less.

¹⁴ I once had good reasons for going to school; however, now I wonder whether I should continue

and can therefore be considered as acceptable. Allowing more errors to covariate to account for high modification indices was theoretically not justifiable.

Regarding RQ4, amotivation was significantly negatively predicted solely by competence ($b = -0.313$, $SE = .069$, $\beta = -.397$, $p < .01$) for the Iranian sample. Concerning RQ6, SLP was significantly negatively predicted by amotivation ($b = -0.180$, $SE = .077$, $\beta = -.183$, $p < .05$). The amotivation of German students (RQ4) was significantly predicted by competence as well ($b = -0.837$, $SE = .415$, $\beta = .898$, $p < .05$).

In regards to RQ7 it was found, that for the Iranian students amotivation did not mediate the relationship between autonomy and SLP ($b = 0.027$, $SE = .020$, $\beta = .024$, $p > .01$). However, the direct effect between autonomy and SLP was significant ($b = 0.178$, $SE = .069$, $\beta = .155$, $p = .01$). The relationship between competence and SLP was partially mediated by amotivation (indirect effect: $b = 0.057$, $SE = .028$, $\beta = .073$, $p < .05$; direct effect: $b = 0.378$, $SE = .073$, $\beta = .487$, $p < .01$).

No mediation path was significant for the German sample.

When looking at model (c - amotivation) separately for each sample, the model showed better model fit for the Iranian sample χ^2 (181.884, $df = 136$, $p < .01$) RMSEA (.041) CFI (.983) than for the German sample χ^2 (207.14, $df = 55$, $p < .01$) RMSEA (.047) CFI (.915).

Intercorrelation Model of Motivation (RQ5)

The multigroup condition of the SEM analysis for the intercorrelation model showed that the hypothesized model showed a decent model fit. The χ^2 (971.22, $df = 129$, $p < .01$) was significant and therefore indicates an insufficient model fit. However, the RMSEA (.075, $p < .01$) and the CFI (.901) indicate a barely acceptable model fit (.08 & .90 respectively). The modification indices indicated possible improvements for the model. The errors of item M11INTST and M4INTSTI, M25INTST as well as M26_AMO and M19_AMO and M12_AMO and M26_AMO were allowed to covariate with each other in the German sample. This resulted in an improved model fit of χ^2 (825.93, $df = 134$, $p < .01$), RMSEA (.065, $p < .01$) and the CFI (.926). Further optimization of the model according to the modification indices was theoretically not justifiable.

When looking at the intercorrelation model separately for each sample, the model showed better model fit for the Iranian sample χ^2 (245.80, $df = 203$, $p < .01$) RMSEA (.035) CFI

(.985) than for the German sample χ^2 (393.87, $df = 198$, $p < .01$) RMSEA (.061) CFI (.908).

As shown in Table 4, almost every covariance (correlation respectively) in the Iranian sample was significant barring the relationship between externally regulated extrinsic motivation and intrinsic motivation to know. The strongest relations were found between identified extrinsic motivation and the aspects of intrinsic motivation: Accomplishment ($cov = 1.578$, $SE = .125$, $r = .902$, $p < .01$), knowledge ($cov = 1.697$, $SE = .133$, $r = .846$, $p < .01$) and stimulation ($cov = 2.102$, $SE = .129$, $r = .950$, $p < .01$). The weakest relationships were found between externally regulated motivation and the aspects of intrinsic motivation including the aforementioned non-significant relationship ($r = .154 - r = .208$). The strongest positive relationship was observed between amotivation and the autonomous regulated aspects of motivation: intrinsic motivation for accomplishment ($cov = 1.387$, $SE = .160$, $r = -.682$, $p < .01$), knowledge ($cov = 1.206$, $SE = .172$, $r = -.517$, $p < .01$), stimulation ($cov = 1.544$, $SE = .171$, $r = .600$, $p < .01$) and identified extrinsic motivation ($cov = 1.031$, $SE = .127$, $r = -.640$, $p < .01$).

As with the aforementioned relationships fewer relevant relationships were found in the German sample. The strongest relationship was found between introjected extrinsic motivation and the aspects of intrinsic motivation: Accomplishment ($cov = 2.170$, $SE = .268$, $r = .00$, $p < .01$), knowledge ($cov = 1.370$, $SE = .246$, $r = .00$, $p < .01$) and stimulation ($cov = 1.325$, $SE = .217$, $r = .00$, $p < .01$). Strongest negative relationship was found between amotivation and the aspects of intrinsic motivation (accomplishment $cov = -0.810$, $SE = .202$, $r = -.344$, $p < .01$; knowledge $cov = -1.136$, $SE = .197$, $r = -.514$, $p < .01$ and stimulation $cov = -1.270$, $SE = .193$, $r = -.557$, $p < .01$) as well as identified motivation ($cov = -0.996$, $SE = .233$, $r = -.472$, $p < .01$). The weakest relationships were found between externally regulated extrinsic motivation and the aspects of intrinsic motivation ($r > .05$) indicating no relationship.

Discussion

There has been a considerable controversy about the generalizability of the postulates of the self-determination theory across cultures. In particular the generalizability of the basic psychological needs has been questioned in the scientific literature (Noels, 2001). However, there is also only a small amount of literature regarding the effects of motivational orientation on outcome variables like language assessment (Ma, 2009). The

primary purpose of this study was to investigate the self-determination theory and the relationships of its constructs with each other and the subjective language proficiency assessment in the context of English learning in two different cultures. It was attempted to capture the aspects of the SDT in the most holistic way possible within the confinements of a master thesis.

Before exploring the central research question, the basic assumption that the Iranian sample would be significantly more collectivistically orientated than their German counterparts was tested. This hypothesis was not confirmed and the statistical analysis showed results contrary to the initial expectation and to other cultural research (Hofstede, n. d.). The Iranian participants of this study showed significantly higher individualism orientation than the German sample. This may be an indicator for McSweeneys (2002) criticism of the cultural model of Hofstede. The German sample was recruited in a very rural part of Germany. The infrastructure is characterized by small villages where most people know each other personally for a very long time. It is common that personal actions are attributed to the family. Children are often referred to not by name but their parents' names, indicating a high collectivistic orientation within an individualistic national society. On the other hand, the Iranian participants lived in a major metropolitan area in Iran (population of 3 million people). In this urban environment close personal relationships with neighbors and other people outside of the family, collective responsibility for the reputation of the family and personal identification as part of a family and not as an individual may be less prevalent than in the rural context, regardless of the overarching national culture. The fact that the Iranian sample is significantly more individualistically orientated may therefore be evidence for the claim that the common unique national culture shared by a national population is less relevant for individualistic or collectivistic orientations than the subcultures within the population, surrounding the individual (McSweeney, 2002).

The central research question was divided into 7 research questions. RQ2, RQ3 and RQ4 were answered, dividing the structural equation model into three smaller models. RQ5 and RQ7 were incorporated in all of the three path models. For RQ6 a separate covariance model was created.

While all models showed an acceptable to excellent (in the Iranian sample) model fit, it has to be acknowledged that in each of the four sub models (intrinsic path, extrinsic path, amotivational path) the Iranian sample showed a better model fit than the German. The

factor loadings were fixed individually for each sample, therefore the variance of the measurement models is not represented in the model fit indices of the path and the intercorrelation model. Due to the lack of degrees of freedom no model fit for the measurement models of the individual countries could be computed. The implications of this limitation is discussed below. The factor loadings, however, indicate that the latent constructs are vastly better represented by the items in the Iranian sample, showing standardized factor loadings that are up to .373 stronger than their German counterparts. Stronger factor loadings indicate higher correlation of the items with the latent constructs (Geißer, 2010), indicating a better representation of the latent constructs by the used measurements. Because the appropriateness of the measurement model for the German sample is not assured, all results and effects obtained have to be interpreted in regards to a possible inappropriateness of the measurement model.

In the Iranian sample, all three types of intrinsic motivation were significantly predicted by all three basic psychological needs and therefore adding supporting evidence to the postulate of the SDT that the satisfaction of the three basic psychological needs predicts intrinsic motivation even in a non-western culture. Ryan and Deci (2000c) argue that the basic psychological needs are universal for all cultures and ages and that only the means through which those needs are satisfied are variable. Regarding the Iranian results of this study, one may be inclined to subscribe to this view. However, no such regressions were found for the German students. None of the needs was a significant predictor for any kind of intrinsic motivation, questioning the appropriateness of the SDT-construct for a relatively collectivistic sample in an individualistic country. This is quite contradictory to the postulates of the SDT and would indicate that the assumptions of the relationship between the basic psychological needs and intrinsic motivation would not apply for students in rural Germany. The moderate amount of shared variance between the basic psychological needs indicate that the latent constructs can be regarded as distinct constructs in the Iranian sample. Perceived competence is moderately correlated with the perceived relatedness and only very weakly with autonomy in the Iranian sample. Autonomy and relatedness on the other hand do not seem to be related to each other at all. This is in line with phenomena such as positive feedback which is known to satisfy the need for relatedness as well as promote experienced competence (Deci et al., 1999; Ryan & Deci, 2000b), and the postulate that competence and autonomy are the energizers of intrinsic motivation. An even stronger relation between all three needs was observed

in the German sample. However, the high correlations between the constructs would indicate a conceptual overlap of the constructs which is in stark contrast to the view of the SDT that the basic psychological needs are very distinct phenomena (Ryan & Deci, 2000c).

However, the measurement models may not be appropriate for the German sample, therefore the postulate of the SDT, that the basic psychological needs predict intrinsic motivation cannot legitimately be rejected on the basis of the results of this study. Rather, because the measurement models of the Iranian sample seem more appropriate, the predictive value of need satisfaction for intrinsic motivation is considered affirmed in this thesis.

In accordance with the postulates of the SDT, the most autonomous regulated extrinsic motivation (identified regulated extrinsic motivation) of the Iranian sample was significantly predicted by all three basic psychological needs and the more controlled extrinsic motivation regulation styles were not significantly influenced by need satisfaction. As the satisfaction of the basic psychological needs is said to foster integration (Deci & Ryan, 1985a), it is plausible, that controlled types of extrinsic motivation are not associated with need satisfaction as need satisfaction would result in a more integrated kind of motivation. Therefore, for the Iranian sample the intercultural generalizability of the relationship between need satisfaction and extrinsic motivation as claimed by the SDT is supported by the results of this study. Again, as with intrinsic motivation, no significant predictive relationship between need satisfaction and extrinsic motivation was found. The same limitations mentioned for the intrinsic motivation model apply.

The motivational construct of amotivation was the only one to bear relevance for both samples. Amotivation was significantly negatively predicted by competence in both samples, making the frustration of the need for competence the prime reason for students being amotivated. This is very much in line with the SDT as Deci and Ryan (1985a) describe amotivated people as feeling incompetent and lacking control, indicating a strong conceptual relationship between the two constructs. In the German sample, the regression of competence on amotivation was even stronger than in the Iranian. However, the aforementioned limitations of results for the German sample still apply even if the results indicate conformity with the theory and therefore have to be interpreted with caution.

The last predictive research questions regard the relationship between motivation and the motivational outcome variable subjective language proficiency assessment and whether motivation functions as a mediator between the basic psychological needs and outcome. For the Iranian sample significant relationships between the two needs competence and autonomy and the subjective language assessment were observed. However, in the intrinsic as well as in the extrinsic model these effects were fully mediated by intrinsic motivation for stimulation and identified regulated extrinsic motivation respectively, indicating the plausibility of Vallerands (1997) proposed sequential model, assuming motivational aspects as necessary mediating steps for need satisfaction to work on the outcome variable – in this case subjective language proficiency assessment. Again, for the German sample no effect was found between all types of motivation and subjective language assessment, therefore eliminating the possibility for a mediation effect. Also no direct relation between need satisfaction and language assessment was observed. The limitations resulting from the measurement models apply as well.

Lastly, the motivational continuum proposed in the organismic integration theory was tested for both samples via intercorrelation model. For the Iranian sample almost all the latent constructs were located along the continuum of autonomy as proposed by the SDT (Ryan, & Connel, 1989; Ryan, & Deci, 2000). With the notable exception of introjected regulated extrinsic motivation, all intercorrelation patterns indicated a stronger relationship between constructs close on the continuum. Introjected regulation, however, seems to be weakly correlated with amotivation while the other kinds of motivation are negatively correlated with amotivation. This would indicate that introjected regulation is the least autonomous kind of motivation even though the SDT assumes externally regulated motivation to be the least autonomous. These results are complemented by the fact that, even though both relations are not significant, introjected motivation is an even weaker predictor for subjective language skill assessment than externally regulated motivation. However, these relationships are relatively weak and further research is needed to test for the stability of this phenomenon.

For the German sample, amotivation, external regulation and intrinsic motivation were correlated in accordance with the SDT. Introjected and identified regulation, however, showed properties reverse to the theoretical expectations. Introjected regulation is highly correlated with intrinsic motivation indicating a close conceptual proximity that would according to the theory rather be assumed for identified regulation and vice versa. As with

the aforementioned results one has to bear in mind that measurement appropriateness is not assured and therefore, if the results for Germany are interpreted at all, this has to be done with caution.

In general, the results of this study make a very strong case for the applicability of the postulates of the SDT for the Iranian context. Most observed relationships were in accordance with expectations derived from theoretical framework proposed by Deci and Ryan. However, it is unclear why the theoretical model proposed in this thesis did not work for the German sample. Several reasons may contribute to the puzzling results. First, the German sample can be regarded as a very special, not representative, sample. The rural, very catholic environment of the students, while simultaneously living in a very secular society may put some unique strains on the children making the SDT or even the kind of measurement (self-report questionnaire) inappropriate for this kind of sample. The mixture of collectivistic demands of the proximate society and individualistic ideals propagated by the surrounding media may lead to a unique interaction between the basic psychological needs and motivation. However, empirical results are not able to support that claim in this particular case. To put weight behind such a claim, another potential reason needs to be explored first. Because most measurement models became saturated models when the samples were considered individually, the quality of the measurement models could not be verified for each sample separately and therefore the appropriateness of the measurement model for each sample could not be assessed. Given the sometimes vastly different factor loadings between the samples, it seems appropriate to question the measurement models. Even though Brislin's (1970) classical iterative back-translation approach was used, this was done by bilingual German native speakers. Therefore, possible translation irregularities cannot be ruled out completely. If the measurement models are indeed inappropriate for the German sample, this would mean that the used instrument does not measure the same latent constructs for Iran and Germany. Therefore, none of the reported relationships are legitimately interpretable, as the constructs in question would not be represented appropriately.

Furthermore, the following limitations have to be acknowledged as they would impact the interpretability of the results, even if the measurement models were appropriate for both samples. First, even though this thesis aimed to incorporate most aspects of the SDT, it was not possible to incorporate all aspects into one structural equation model. This leads to the possibility that some interactions are not represented in the statistical analyses

because they were not part of the same model. Furthermore, to assess the basic need satisfaction the Basic Need Satisfaction Scale General (Gagné, 2003) was used. This scale assesses the need satisfaction in general. However, this study was interested in the motivational work mechanisms in language learning in particular, therefore, a general need satisfaction may produce confounding results as it does not assess the need satisfaction in relation to the topic at hand – language learning. The same problem is apparent in the Academic motivation Scale High school version. Even though more focused than the BNS-G, it may still not be sufficiently context specific. As initially argued, language learning is a very specific case of academic learning. Thus, it may be more appropriate assessed by means of specific scales, created for language learning in particular. Furthermore, the German sample was assessed at the very beginning of the school year. This could lead to a biased assessment of the need satisfaction as the usual regiment, and therefore the intended point of reference was not yet in full effect. This may have led students to use the last school year as reference point, which may be skewed due to the long temporal distance. Lastly, to measure the outcome the students gave a subjective language proficiency assessment. Even though Felder-Puig et al. (2012) argue that self-report questionnaires are a reliable measure of performance, Hadwin, Winne, Stockley, Nesbit and Woszczyzna (2001) argue that self-reported performance assessment leads to a positive bias. All instruments were self-report questionnaires which harbor some general potential biases themselves like social desirability or recall bias and may therefore not capture the participants feelings or perceptions appropriately (Mills, Pajares, & Herron, 2007).

Implications

Even though this study provides strong evidence for the applicability of the SDT in the Iranian context, the data of the German sample have to be regarded as highly questionable. In light of several limitations of this study, future researchers may acknowledge several aspects in order to shed further light on the cultural appropriateness of the SDT in FLL. As mentioned in the discussion, the general SEM had to be split into four smaller models. Therefore potential interactions between latent constructs may have been overlooked. Future researchers should try to incorporate all aspects of the SDT into one model. Furthermore, in this thesis the models were only tested in accordance to the theoretical background. However, the main strength of SEM lies in the comparison of competing model. To truly grasp the appropriateness of the postulates of the SDT, several

competing models should be tested against each other. To account for the limitations of self-report questionnaires experimental manipulation of the phenomena in question in a very specific setting (English lessons) seems an appropriate measure to gain additional insight in the working mechanisms of motivation. Last but not least, one of the main problems of this study should be addressed from the get-go. As discussed above there were some problems with the appropriateness of scales. To ensure better content equivalences an iterative combined technique approach should be employed, alternating between back and forth translation between groups of independent native speakers and a scale assessment by a committee (see also Cha, Kim, & Erlen, 2007). Furthermore, the scales should be tested for measurement invariance by fitting the models of the groups to configural, metric and scalar invariance, therefore ensuring that the latent constructs are measured equally among different groups – in this case cultures (McDonald & Ho, 2002; van de Schoot, Lugtig, & Hox, 2012). To be able to make well founded assumptions on the generalizability of a scale, data using the original scales should be included and tested for measurement invariance.

This thesis aimed to provide further insight into the motivational working mechanisms of the self-determination theory in different cultural environments. By investigating the SDT in its entire complexity, a broad foundation for further cross-cultural research was provided. The initial results provide strong evidence for the generalizability of the postulates of the SDT for the Iranian context.

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Appendix A

Appendix A1: Abstract

The aim of this study was to investigate the applicability of basic motivational mechanisms postulated by the SDT for the Iranian and German context regarding second language learning in school. Therefore two surveys consisting the same scales (basic psychological needs scale, Academic motivation scale- high school version and The Self Group Distinction Scale) were conducted Iran and Germany. The sample consisted of 468 students with a mean age of 14.9 (SD = .79 years) recruited in a major Iranian city and a rural area in Germany. 57% of the students were female. Unexpectedly the German sample showed a significantly higher degree of collectivistic orientation than their Iranian peers, nevertheless cultural differences were apparent. To investigate the relationship between the basic psychological needs (autonomy, competence, and relatedness), the three kinds of motivation (amotivation, extrinsic motivation and intrinsic motivation), their perceived regulation and the subjective language proficiency assessment, a structural equation model was designed using Mplus. The measurement models were tested and optimized using confirmatory factor analysis. The predictive relationships of the latent constructs were investigated via a path model. For the Iranian sample the basic psychological needs significantly predicted all aspects of intrinsic motivation and identified extrinsic motivation. The relationship between needs and subjective language proficiency assessment was fully mediated by intrinsic motivation to know and identified regulated extrinsic motivation. The motivational regulation styles lie along the proposed motivational continuum. No significant relationships between the constructs of the SDT were found for the German sample. Possible limitations and implications are discussed.

Keywords: motivation, cross-cultural comparison, self-determination theory, second language learning.

Appendix A2: Zusammenfassung

Das Ziel der Studie war es, die Anwendbarkeit der Postulate der SDT für den iranischen und deutschen Kulturraum in Bezug auf Fremdsprachlernen zu überprüfen. Zu diesem Zweck wurden zwei parallele Fragebogenstudien in Deutschland und dem Iran durchgeführt. Die Fragebögen umfassten Instrumente zur Erfassung von psychologischen Grundbedürfnissen (BNS-G), akademischer Motivation (AMS-HS), subjektiver Einschätzung der eigenen Sprachkenntnisse und der Ausdifferenzierung des Selbsts von der Gruppe (SGDS). Die Stichproben umfassten gemeinsam 468 Schülerinnen und Schüler mit einem Durchschnittsalter von 14,9 Jahren ($SD = 0,79$ Jahre), von denen 57 % weiblich waren. Die Teilnehmerinnen und Teilnehmer wurden in einer großen iranischen Metropolenregion und einer ländlichen süddeutschen Region rekrutiert. Entgegen den Erwartungen zeigten die deutschen Schülerinnen und Schüler eine signifikant höhere kollektivistische Orientierung als ihre iranischen Kolleginnen und Kollegen. Trotzdem war ein deutlicher Kulturunterschied zu beobachten, weshalb weitere Untersuchungsschritte gerechtfertigt waren. Um die Beziehung zwischen den psychologischen Grundbedürfnissen (Autonomie, Kompetenz und soziale Eingebundenheit), den drei Arten der Motivation (Amotivation, extrinsische Motivation und intrinsische Motivation), bzw. deren wahrgenommene Regulation, und der subjektiven Einschätzung der Sprachkenntnisse zu überprüfen, wurde ein Strukturgleichungsmodell mittels Mplus erstellt. Die Messmodelle wurden mittels konfirmatorischer Faktorenanalyse überprüft und optimiert. Die Regressions- und Mediationsmodelle wurden durch ein Pfadmodell überprüft. Für die iranische Stichprobe konnte festgestellt werden, dass alle psychologischen Grundbedürfnisse alle Aspekte der intrinsischen Motivation und identifiziert regulierter extrinsischer Motivation signifikant positiv vorhersagten. Der Zusammenhang zwischen den Grundbedürfnissen und der subjektiven Einschätzung der Englischkompetenz wurde vollständig durch intrinsische Motivation für den Wissenserwerb und identifiziert regulierte extrinsische Motivation mediert. Die motivationalen Regulationstypen lagen entlang des durch die SDT postulierten Kontinuums der Motivation. Für die deutsche Stichprobe wurden keine signifikanten Beziehungen zwischen den Konstrukten gefunden. Mögliche Limitationen und Implikationen werden diskutiert.

Schlagwörter: Motivation, interkultureller Vergleich, Self-Determination Theory, Fremdsprachlernen.

Appendix B

Appendix B1: Informed Consent

Liebe Eltern!

Die Universität Wien führt in Kooperation mit Kollegen der iranischen Ferdowsi University of Mashhad ein Projekt durch, das sich mit einem Kulturvergleich der Lernmotivation von Schülerinnen und Schülern befasst. Im Rahmen dieses Projektes wird auch eine Masterarbeit verfasst. Das Ringeisen-Gymnasium hat sich entschlossen, bei diesem Projekt teilzunehmen, worüber wir uns sehr freuen. Mit diesem Schreiben möchten wir Sie nun kurz über dieses Projekt informieren.

Die Schülerinnen und Schüler werden mittels eines Fragebogens zum Thema „Bedürfnisse und Lernmotivation“ befragt. In dem Fragebogen geht es darum, dass die Schülerinnen und Schüler motivationale Aspekte ihres Englischlernens beschreiben sollen. In den kommenden Wochen wird das Ringeisen-Gymnasium die Erhebung in den Klassen durchführen.

Selbstverständlich sind die Angaben der Schülerinnen und Schüler anonym und werden streng vertraulich behandelt. Weder der Lehrkörper noch die Wissenschaftler und Wissenschaftlerinnen können nachvollziehen, von wem ein einzelner Fragebogen ausgefüllt wurde.

Sollten Sie weitere Fragen bezüglich des Projekts haben, können Sie uns natürlich jederzeit kontaktieren (Kontaktadresse: ingo.minnameyer@gmail.com). Die Teilnahme an diesem Projekt ist selbstverständlich freiwillig und kann auch jederzeit ohne Angabe von Gründen abgebrochen werden. Wenn Sie mit einer Teilnahme Ihres Kindes einverstanden sind, würden wir Sie bitten, den unten angefügten Abschnitt auszufüllen und der/dem Klassenlehrer/in zukommen zu lassen.

Vielen Dank für Ihre Unterstützung der Wissenschaft!

Mit freundlichen Grüßen,

Ingo Minnameyer

.....

.....

EINVERSTÄNDNISERKLÄRUNG

Ich, ... bin damit
einverstanden,

(Vor- und Zuname der/des Erziehungsberechtigten in Blockbuchstaben)

dass mein Kind an dieser Studie
teilnimmt und

(Vor- und Zuname des Kindes in Blockbuchstaben)

die erhobenen Daten gemäß dem Datenschutzgesetz in den Masterarbeiten verwendet
werden dürfen.

Datum

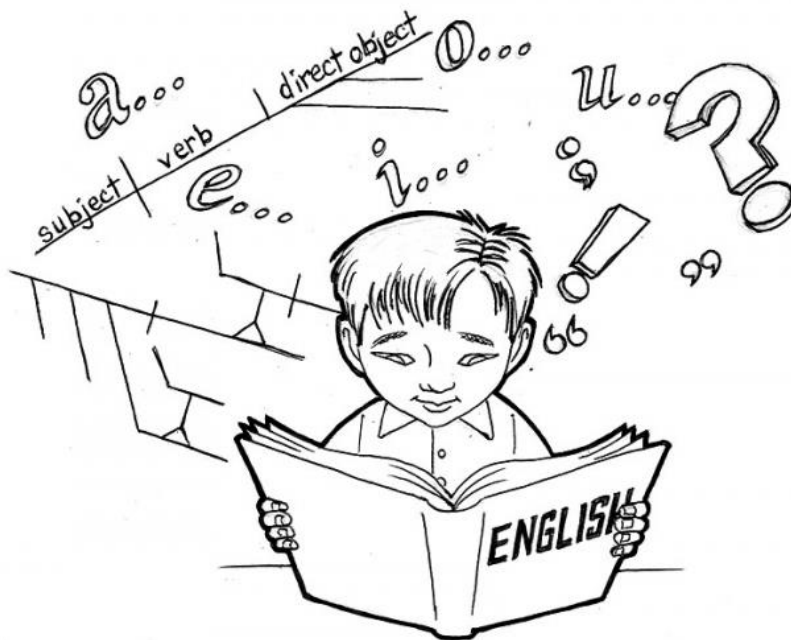
Unterschrift der/des Erziehungsberechtigten

Appendix B2: Questionnaire

Liebe Teilnehmerin, lieber Teilnehmer!

Danke für deine Bereitschaft an dieser Studie über Bedürfnisse und Lernmotivation teilzunehmen. Bitte lies dir die Anleitungen aufmerksam durch und **beantworte bitte alle Fragen**. Es gibt dabei keine richtigen oder falschen

Antworten; das Interesse gilt nur deiner persönlichen Meinung. Selbstverständlich sind deine Angaben anonym und werden streng vertraulich behandelt. Weder deine Lehrkräfte noch die Wissenschaftlerinnen und Wissenschaftler können im Nachhinein nachvollziehen, von wem ein einzelner Fragebogen ausgefüllt wurde.



<http://yoga-kinesiologie.de/wp-content/uploads/2013/04/english-lernen.jpg>

Bitte fülle zunächst folgende Angaben zu deiner Person aus:

Alter in Jahren: _____

Jahrgangsstufe: _____

☐ Geschlecht: ☐ weiblich ☐ männlich

Hast du schon einmal im Ausland ☐ gelebt? ☐ nein ☐ ja

Wie bewertest du deine Sprachfähigkeiten?

(Kreuze bitte an, wie sehr du den folgenden Aussagen zustimmst oder nicht zustimmst.)

	Stimme überhaupt nicht	Stimme großteils nicht	Stimme teilweise nicht	Weder noch	Stimme teilweise zu	Stimme großteils zu	Stimme vollkommen zu
Ich spreche sehr gut Englisch.	☐	☐	☐	☐	☐	☐	☐
Ich kann englische Filme und Nachrichten sehr gut verstehen.	☐	☐	☐	☐	☐	☐	☐
Ich kann englische Bücher und Texte sehr gut lesen.	☐	☐	☐	☐	☐	☐	☐
Ich kann über jedes Thema sehr gut in Englisch schreiben.	☐	☐	☐	☐	☐	☐	☐

Kreuze bitte an, wie sehr du den folgenden Aussagen zustimmst oder nicht zustimmst.

	Stimme überhaupt nicht	Stimme großteils nicht	Stimme teilweise nicht	Weder noch	Stimme teilweise zu	Stimme großteils zu	Stimme vollkommen zu
1. Ich passe im Unterricht auf.	☐	☐	☐	☐	☐	☐	☐
2. Wenn ich im Unterricht sitze, tue ich nur so, als würde ich mitarbeiten.	☐	☐	☐	☐	☐	☐	☐

**Kreuze bitte an, wie sehr du den
folgenden Aussagen zustimmst
oder nicht zustimmst.**

	Stimme überhaupt nicht	Stimme größtenteils nicht	Stimme teilweise nicht	Weder noch	Stimme teilweise zu	Stimme größtenteils zu	Stimme vollkommen zu
3. In der Schule befolge ich die Regeln.	☐	☐	☐	☐	☐	☐	☐
4. Ich bekomme Ärger in der Schule.	☐	☐	☐	☐	☐	☐	☐
5. Ich fühle mich in der Schule glücklich.	☐	☐	☐	☐	☐	☐	☐
6. Ich fühle mich in der Schule gelangweilt.	☐	☐	☐	☐	☐	☐	☐
7. Die Aufgaben in der Schule begeistern mich.	☐	☐	☐	☐	☐	☐	☐
8. Ich bin gerne in der Schule.	☐	☐	☐	☐	☐	☐	☐
9. Ich bin an den Aufgaben in der Schule interessiert.	☐	☐	☐	☐	☐	☐	☐
10. Es macht mir Spaß in meinem Klassenzimmer zu sein.	☐	☐	☐	☐	☐	☐	☐
11. Wenn ich ein Buch lese, stelle ich mir selbst Fragen dazu um sicherzugehen, dass ich verstanden habe, worum es geht.	☐	☐	☐	☐	☐	☐	☐
12. Ich lerne zu Hause, selbst wenn keine Prüfung ansteht.	☐	☐	☐	☐	☐	☐	☐
13. Ich versuche Fernsehsendungen zu Themen zu sehen, die wir in der Schule behandeln.	☐	☐	☐	☐	☐	☐	☐
14. Ich überprüfe meine Arbeiten für die Schule auf Fehler.	☐	☐	☐	☐	☐	☐	☐
15. Ich lese zusätzlich Bücher, um mehr über die Dinge zu erfahren, die wir in der Schule behandeln.	☐	☐	☐	☐	☐	☐	☐

Warum gehst du in die Schule?

(Kreuze bitte an, wie sehr du den folgenden Aussagen zustimmst oder nicht zustimmst.)

	Stimme überhaupt nicht	Stimme groÙteils nicht	Stimme teilweise nicht zu	Weder noch	Stimme teilweise zu	Stimme groÙteils zu	Stimme vollkommen zu
1. Weil ich mindestens einen Gymnasialabschluss brauche, um später einen gut bezahlten Job zu finden.	☐	☐	☐	☐	☐	☐	☐
2. Weil ich beim Lernen neuer Dinge Freude und Zufriedenheit empfinde.	☐	☐	☐	☐	☐	☐	☐
3. Weil ich glaube, dass mir meine Schulbildung dabei hilft, mich auf meinen gewählten Berufsweg vorzubereiten.	☐	☐	☐	☐	☐	☐	☐
4. Weil ich wirklich gerne in die Schule gehe.	☐	☐	☐	☐	☐	☐	☐
5. Ehrlich gesagt weiß ich nicht warum; Ich habe das Gefühl, ich verschwende in der Schule meine Zeit.	☐	☐	☐	☐	☐	☐	☐
6. Für die Freude, die ich empfinde, wenn ich mich beim Lernen selbst übertreffe.	☐	☐	☐	☐	☐	☐	☐
7. Um mir selbst zu beweisen, dass ich das Gymnasium abschließen kann.	☐	☐	☐	☐	☐	☐	☐
8. Um später einen angeseheneren Beruf ergreifen zu können.	☐	☐	☐	☐	☐	☐	☐
9. Für die Freude, wenn ich neue Dinge entdecke, die ich noch nie vorher gesehen habe.	☐	☐	☐	☐	☐	☐	☐
10. Damit ich letztendlich in ein Berufsfeld einsteigen kann, das ich mag.	☐	☐	☐	☐	☐	☐	☐
11. Weil mir Schule Spaß macht.	☐	☐	☐	☐	☐	☐	☐
12. Ich hatte mal einen guten Grund, ich frage mich jedoch, ob ich wirklich weitermachen soll.	☐	☐	☐	☐	☐	☐	☐

Warum gehst du in die Schule?

(Kreuze bitte an, wie sehr du den folgenden Aussagen zustimmst oder nicht zustimmst.)

	Stimme überhaupt nicht	Stimme groÙteils nicht	Stimme teilweise nicht zu	Weder noch	Stimme teilweise zu	Stimme groÙteils zu	Stimme vollkommen zu
13. Für die Freude, die ich empfinde, wenn ich eine meiner persönlichen Leistungen übertreffen kann.	☐	☐	☐	☐	☐	☐	☐
14. Weil ich mich wichtig fühle, wenn ich in der Schule erfolgreich bin.	☐	☐	☐	☐	☐	☐	☐
15. Weil ich später mal ein „gutes Leben“ führen möchte.	☐	☐	☐	☐	☐	☐	☐
16. Für die Freude, die ich empfinde, wenn ich mein Wissen in interessanten Fächern erweitern kann.	☐	☐	☐	☐	☐	☐	☐
17. Weil mir die Schule dabei helfen wird, eine bessere Karriereentscheidung zu treffen.	☐	☐	☐	☐	☐	☐	☐
18. Für die Freude, die ich empfinde, wenn mich eine Diskussion mit einer interessanten Lehrkraft begeistert.	☐	☐	☐	☐	☐	☐	☐
19. Offen gesagt weiß ich nicht, warum ich in die Schule gehe. Sie ist mir vollkommen egal.	☐	☐	☐	☐	☐	☐	☐
20. Für die Freude, die ich empfinde, während ich schwierige schulische Aufgaben erledige.	☐	☐	☐	☐	☐	☐	☐
21. Um mir selbst zu zeigen, dass ich eine intelligente Person bin.	☐	☐	☐	☐	☐	☐	☐
22. Um später ein besseres Gehalt zu bekommen.	☐	☐	☐	☐	☐	☐	☐
23. Weil mir das Lernen erlaubt, mehr über Dinge zu erfahren, die mich interessieren.	☐	☐	☐	☐	☐	☐	☐
24. Weil ich glaube, dass meine Gymnasialausbildung meine	☐	☐	☐	☐	☐	☐	☐

Warum gehst du in die Schule? (Kreuze bitte an, wie sehr du den folgenden Aussagen zustimmst oder nicht zustimmst.)	Stimme überhaupt nicht	Stimme größtenteils nicht	Stimme teilweise nicht zu	Weder noch	Stimme teilweise zu	Stimme größtenteils zu	Stimme vollkommen zu
Fähigkeiten als Arbeitskraft verbessert.							
25. Für das „Hoch“, dass ich empfinde, wenn ich über interessante Themen lese.	☐	☐	☐	☐	☐	☐	☐
26. Ich weiß es nicht; Ich verstehe nicht, was ich in der Schule mache.	☐	☐	☐	☐	☐	☐	☐
27. Weil mir das Gymnasium erlaubt, persönliche Genugtuung in meinem Streben nach schulischen Spitzenleistungen zu erleben.	☐	☐	☐	☐	☐	☐	☐
28. Weil ich mir selbst beweisen möchte, dass ich beim Lernen erfolgreich sein kann.	☐	☐	☐	☐	☐	☐	☐

Bitte lies dir jede der folgenden Fragen aufmerksam durch beantworte sie in Bezug auf dein Leben.	Stimme überhaupt nicht	Stimme größtenteils nicht	Stimme teilweise nicht	Weder noch	Stimme teilweise zu	Stimme größtenteils zu	Stimme vollkommen zu
1. Ich habe das Gefühl ich kann frei für mich entscheiden, wie ich mein Leben lebe.	☐	☐	☐	☐	☐	☐	☐
2. Ich mag die Menschen, mit denen ich zu tun habe.	☐	☐	☐	☐	☐	☐	☐
3. Ich fühle mich oft nicht sehr kompetent.	☐	☐	☐	☐	☐	☐	☐
4. Ich fühle mich in meinem Leben unter Druck gesetzt.	☐	☐	☐	☐	☐	☐	☐

5. Menschen, die mich kennen, sagen mir ich sei gut in dem was ich mache.	☐	☐	☐	☐	☐	☐	☐
6. Ich komme mit Menschen, zu denen ich Kontakt habe, gut aus.	☐	☐	☐	☐	☐	☐	☐
7. Ich bleibe eher für mich selbst und habe nicht viele soziale Kontakte.	☐	☐	☐	☐	☐	☐	☐
8. Im Allgemeinen habe ich das Gefühl, meine Ideen und Meinungen frei äußern zu können.	☐	☐	☐	☐	☐	☐	☐
9. Ich betrachte die Menschen, mit denen ich regelmäßig zu tun habe als meine Freunde.	☐	☐	☐	☐	☐	☐	☐
10. Ich konnte mir kürzlich interessante neue Fähigkeiten aneignen.	☐	☐	☐	☐	☐	☐	☐
11. In meinem täglichen Leben muss ich oft das tun, was mir gesagt wird.	☐	☐	☐	☐	☐	☐	☐
12. Die Menschen in meinem Leben haben mich gern.	☐	☐	☐	☐	☐	☐	☐
13. An den meisten Tagen habe ich das Gefühl, bei dem was ich mache etwas zu erreichen.	☐	☐	☐	☐	☐	☐	☐
14. Menschen mit denen ich täglich zu tun habe berücksichtigen meine Gefühle.	☐	☐	☐	☐	☐	☐	☐
15. In meinem Leben bekomme ich nicht viele Möglichkeiten meine Fähigkeiten zu beweisen.	☐	☐	☐	☐	☐	☐	☐
16. Ich habe nicht viele enge Vertraute.	☐	☐	☐	☐	☐	☐	☐
17. Ich fühle mich, als könnte ich im Alltag im Großen und Ganzen ich selbst sein.	☐	☐	☐	☐	☐	☐	☐
18. Menschen, mit denen ich täglich zu tun habe, scheinen mich nicht sehr zu mögen.	☐	☐	☐	☐	☐	☐	☐
19. Ich fühle mich oft nicht sehr fähig.	☐	☐	☐	☐	☐	☐	☐

20. Es gibt nicht viele Möglichkeiten, in denen ich für mich selbst entscheiden kann, wie ich mit Dingen im Alltag umgehe.	☐	☐	☐	☐	☐	☐	☐
21. Menschen sind im Allgemeinen ziemlich freundlich zu mir.	☐	☐	☐	☐	☐	☐	☐

In diesem Teil wollen wir wissen, wie deine

Klasse über verschiedene Themen denkt.

Bitte denk nach, wie die Meinung deiner

Klasse zu den jeweiligen Fragen ist. Bitte

beantworte alle Fragen genau und sei ehrlich!

	Sehr gut	Ziemlich gut	Weder gut noch schlecht	Ziemlich schlecht	Sehr schlecht
Wie denkt deine Klasse über Mitschüler, die andere um Rat fragen, wenn sie ein Problem haben? Meine Klasse findet das...	☐	☐	☐	☐	☐
Wie denkt deine Klasse über Aufgaben, die man in der Gruppe lösen soll? Meine Klasse findet das...	☐	☐	☐	☐	☐
Wie denkt deine Klasse über Mitschüler, die eine andere Meinung haben als die Lehrer? Meine Klasse findet das...	☐	☐	☐	☐	☐
Wie denkt deine Klasse über Mitschüler, die sich nicht an Gruppenaufgaben beteiligen wollen? Meine Klasse findet das...	☐	☐	☐	☐	☐
Wie denkt deine Klasse über Mitschüler, die ihre eigene Meinung durchsetzen wollen? Meine Klasse findet das...	☐	☐	☐	☐	☐
Wie denkt deine Klasse über Mitschüler, die eine schwierige Aufgabe ganz allein lösen? Meine Klasse findet das...	☐	☐	☐	☐	☐
Wie denkt deine Klasse über Mitschüler, die ihre Meinung nicht ändern wollen, auch wenn alle anderen anders denken? Meine Klasse findet das...	☐	☐	☐	☐	☐

In diesem Teil wollen wir wissen, wie du über verschiedene Themen denkst. Bitte denk nach, wie deine Meinung zu den jeweiligen Fragen ist. Bitte beantworte alle Fragen ganz genau und sei ehrlich!

	Sehr gut	Ziemlich gut	Weder gut noch schlecht	Ziemlich schlecht	Sehr schlecht
Wie denkst du über Mitschüler, die andere um Rat fragen wenn sie ein Problem haben? Ich finde das...	☐	☐	☐	☐	☐
Wie denkst du über Aufgaben, die man in der Gruppe lösen soll? Ich finde das...	☐	☐	☐	☐	☐
Wie denkst du über Mitschüler, die eine andere Meinung haben als die Lehrer? Ich finde das...	☐	☐	☐	☐	☐
Wie denkst du über Mitschüler, die sich nicht an Gruppenaufgaben beteiligen wollen? Ich finde das...	☐	☐	☐	☐	☐
Wie denkst du über Mitschüler, die ihre eigene Meinung durchsetzen wollen? Ich finde das...	☐	☐	☐	☐	☐
Wie denkst du über Mitschüler, die eine schwierige Aufgabe ganz allein lösen? Ich finde das...	☐	☐	☐	☐	☐
Wie denkst du über Mitschüler, die ihre Meinung nicht ändern wollen auch wenn alle anderen anders denken? Ich finde das...	☐	☐	☐	☐	☐

Appendix C: Codebook

Appendix C1:

Bindung an die Schule / *School Engagement Scale – Behavioral, Emotional and Cognitive Engagement*

beEng1	Ich passe im Unterricht auf. <i>I pay attention in class</i>	7 point Likert scale from 1. strongly disagree to 7. strongly agree
beEng2_R	Wenn ich im Unterricht sitze tu ich nur so, als würde ich arbeiten. <i>When I am in class I just act as if I am working</i>	7 point Likert scale from 1. strongly disagree to 7. strongly agree
beEng3	In der Schule befolge ich die Regeln. <i>I follow the rules at school</i>	7 point Likert scale from 1. strongly disagree to 7. strongly agree
beEng4_R	Ich bekomme Ärger in der Schule <i>I get in trouble at school</i>	7 point Likert scale from 1. strongly disagree to 7. strongly agree
emEng5	Ich fühle mich in der Schule glücklich. <i>I feel happy in school</i>	7 point Likert scale from 1. strongly disagree to 7. strongly agree
emEng6_R	Ich fühle mich in der Schule gelangweilt. <i>I feel bored in school</i>	7 point Likert scale from 1. strongly disagree to 7. strongly agree
emEng7	Die Arbeiten in der Schule begeistern mich. <i>I feel excited by the work in school</i>	7 point Likert scale from 1. strongly disagree to 7. strongly agree
emEng8	Ich bin gerne in der Schule. <i>I like being at school</i>	7 point Likert scale from 1. strongly disagree to 7. strongly agree
emEng9	Ich bin an den Aufgaben in der Schule interessiert.	7 point Likert scale from 1. strongly

	<i>I am interested in the work at school</i>	disagree to 7. strongly agree
<i>emEng10</i>	Es macht mir Spaß in meinem Klassenzimmer zu sein. <i>My classroom is a fun place to be</i>	7 point Likert scale from 1. strongly disagree to 7. strongly agree
<i>cogEng11</i>	Wenn ich ein Buch lese, stelle ich mir selbst Fragen dazu um sicherzugehen, dass ich verstanden habe, worum es geht. <i>When I read a book, I ask myself questions to make sure I understand what it is about</i>	7 point Likert scale from 1. strongly disagree to 7. strongly agree
<i>cogEng12</i>	Ich lerne zu Hause, selbst wenn keine Prüfung ansteht. <i>I study at home even when I don't have a test</i>	7 point Likert scale from 1. strongly disagree to 7. strongly agree
<i>cogEng13</i>	Ich versuche Fernsehsendungen zu Themen zu sehen, die wir in der Schule behandeln. <i>I try to watch TV shows about things we are doing in school</i>	7 point Likert scale from 1. strongly disagree to 7. strongly agree
<i>cogEng14</i>	Ich überprüfe meine Arbeiten für die Schule auf Fehler <i>I check my schoolwork for mistakes</i>	7 point Likert scale from 1. strongly disagree to 7. strongly agree
<i>cogEng15</i>	Ich lese zusätzlich Bücher, um mehr über die Dinge zu erfahren, die wir in der Schule behandeln <i>I read extra books to learn more about things we do in school</i>	7 point Likert scale from 1. strongly disagree to 7. strongly agree

Note: beEng = behavioral engagement, emEng = emotional engagement and cogEng = cognitive engagement; _R indicates reverse coded items

Appendix C2

Akademische Motivationsskala / Academic motivation Scale (AMS-HS 28) High school version

Using the scale below, indicate to what extent each of the following items presently corresponds to one of the reasons why you go to school.

	Warum gehst du in die Schule?	
--	-------------------------------	--

	Why do you go to school?	
m1ExEx	Weil ich mindestens einen Gymnasialabschluss brauche, um später einen gut bezahlten Job zu finden. <i>Because I need at least a high-school degree in order to find a high-paying job later on.</i>	7 point Likert scale from 1. strongly disagree to 7. strongly agree
m2IntKn	Weil ich beim Lernen neuer Dinge Freude und Zufriedenheit empfinde. <i>Because I experience pleasure and satisfaction while learning new things.</i>	7 point Likert scale from 1. strongly disagree to 7. strongly agree
m3Ex_id	Weil ich glaube, dass mir meine Schulbildung dabei hilft, mich auf meinen gewählten Berufsweg vorzubereiten. <i>Because I think that a high-school education will help me better prepare for the career I have chosen</i>	7 point Likert scale from 1. strongly disagree to 7. strongly agree
m4IntSti	Weil ich wirklich gerne in die Schule gehe. <i>Because I really like going to school.</i>	7 point Likert scale from 1. strongly disagree to 7. strongly agree
m5_amo	Ehrlich gesagt weiß ich nicht warum; Ich habe das Gefühl, ich verschwende meine Zeit. <i>Honestly, I don't know; I really feel that I am wasting my time in school</i>	7 point Likert scale from 1. strongly disagree to 7. strongly agree
m6IntAC	6. Für die Freude, die ich empfinde, wenn ich mich beim Lernen selbst übertreffe. <i>For the pleasure I experience while surpassing myself in my studies.</i>	7 point Likert scale from 1. strongly disagree to 7. strongly agree
m7ExInt	Um mir selbst zu beweisen, dass ich das Gymnasium abschließen kann. <i>To prove to myself that I am capable of completing my high-school degree.</i>	7 point Likert scale from 1. strongly disagree to 7. strongly agree
m8ExEx	Um später einen angeseheneren Beruf ergreifen zu können. <i>In order to obtain a more prestigious job later on.</i>	7 point Likert scale from 1. strongly disagree to 7. strongly agree

m9IntKn	Für die Freude, wenn ich neue Dinge entdecke, die ich noch nie vorher gesehen habe. <i>For the pleasure I experience when I discover new things never seen before.</i>	7 point Likert scale from 1. strongly disagree to 7. strongly agree
m10Ex_id	Damit ich letztendlich in ein Berufsfeld einsteigen kann, das ich mag. <i>Because eventually it will enable me to enter the job market in a field that I like.</i>	7 point Likert scale from 1. strongly disagree to 7. strongly agree
m11IntSti	Weil mir Schule Spaß macht. <i>Because for me, school is fun</i>	7 point Likert scale from 1. strongly disagree to 7. strongly agree
m12_amo	Ich hatte mal einen guten Grund, ich frage mich jedoch ob ich wirklich weitermachen soll. <i>I once had good reasons for going to school; however, now I wonder whether I should continue.</i>	7 point Likert scale from 1. strongly disagree to 7. strongly agree
m13IntAC	Für die Freude, die ich empfinde, wenn ich meine früheren Leistungen übertreffen kann. <i>For the pleasure that I experience while I am surpassing myself in one of my personal accomplishments</i>	7 point Likert scale from 1. strongly disagree to 7. strongly agree
m14ExInt	Weil ich mich wichtig fühle, wenn ich in der Schule erfolgreich bin. <i>Because of the fact that when I succeed in school I feel important.</i>	7 point Likert scale from 1. strongly disagree to 7. strongly agree
m15ExEx	Weil ich später mal ein „gutes Leben“ führen möchte. <i>Because I want to have "the good life" later on.</i>	7 point Likert scale from 1. strongly disagree to 7. strongly agree
m16IntKn	Für die Freude, die ich empfinde, wenn ich mein Wissen in interessanten Fächern erweitern kann. <i>For the pleasure that I experience in broadening my knowledge about subjects which appeal to me.</i>	7 point Likert scale from 1. strongly disagree to 7. strongly agree

m17Ex_id	Weil mir die Schule dabei helfen wird, eine bessere Karriereentscheidung zu treffen. <i>Because this will help me make a better choice regarding my career orientation.</i>	7 point Likert scale from 1. strongly disagree to 7. strongly agree
m18IntSti	Für die Freude, die ich empfinde, wenn mich eine Diskussion mit einer interessanten Lehrkraft begeistert. <i>For the pleasure that I experience when I am taken by discussions with interesting teachers.</i>	7 point Likert scale from 1. strongly disagree to 7. strongly agree
m19_amo	Offen gesagt weiß ich nicht warum ich in die Schule gehe. Sie ist mir vollkommen egal. <i>I can't see why I go to school and frankly, I couldn't care less.</i>	7 point Likert scale from 1. strongly disagree to 7. strongly agree
m20IntAC	Für die Freude, die ich empfinde, während ich eine schwierige schulische Aufgabe erledige. <i>For the satisfaction I feel when I am in the process of accomplishing difficult academic activities</i>	7 point Likert scale from 1. strongly disagree to 7. strongly agree
m21ExInt	Um mir selbst zu zeigen, dass ich eine intelligente Person bin. <i>To show myself that I am an intelligent person.</i>	7 point Likert scale from 1. strongly disagree to 7. strongly agree
m22ExEx	Um später ein besseres Gehalt zu bekommen. <i>In order to have a better salary later on.</i>	7 point Likert scale from 1. strongly disagree to 7. strongly agree
m23IntKn	Weil mir das Lernen erlaubt, mehr über Dinge zu erfahren, die mich interessieren. <i>Because my studies allow me to continue to learn about many things that interest me.</i>	7 point Likert scale from 1. strongly disagree to 7. strongly agree
m24Ex_id	Weil ich glaube, dass meine Gymnasialausbildung meine Fähigkeiten als Arbeitskraft verbessert. <i>Because I believe that my high school education will improve my competence as a worker.</i>	7 point Likert scale from 1. strongly disagree to 7. strongly agree
m25IntSti	Für das „Hoch“, dass ich empfinde, wenn ich über interessante Themen lese.	7 point Likert scale from 1. strongly

	<i>For the "high" feeling that I experience while reading about various interesting subjects.</i>	disagree to 7. strongly agree
m26_amo	Ich weiß es nicht; Ich verstehe nicht was ich in der Schule mache. <i>I don't know; I can't understand what I am doing in school.</i>	7 point Likert scale from 1. strongly disagree to 7. strongly agree
m27IntAC	Weil mir das Gymnasium erlaubt, persönliche Genugtuung in meinem Sterben nach schulischen Spitzenleistungen zu erleben. <i>Because high school allows me to experience a personal satisfaction in my quest for excellence in my studies.</i>	7 point Likert scale from 1. strongly disagree to 7. strongly agree
m28ExInt	Weil ich mir selbst beweisen möchte, dass ich beim Lernen erfolgreich sein kann. <i>Because I want to show myself that I can succeed in my studies.</i>	7 point Likert scale from 1. strongly disagree to 7. strongly agree

Note: ExEx = externally regulated extrinsic motivation, IntKn = intrinsic motivation to know, Ex_id = identified extrinsic motivation, IntSti = intrinsic motivation for stimulation, amo = amotivation, IntAC = intrinsic motivation for accomplishment, ExInt = introjected extrinsic motivation.

Appendix C3:

Psychologische Grundbedürfnisse allgemein / *Basic Need Satisfaction in General*

Bitte lies dir jede der folgenden Fragen aufmerksam durch und setze sie in Zusammenhang zu deinem Leben

Please read each of the following items carefully, thinking about how it relates to your life, and then indicate how true it is for you. Use the following scale to respond:

n1_aut	Ich habe das Gefühl ich kann frei für mich entscheiden, wie ich mein Leben lebe. <i>I feel like I am free to decide for myself how to live my life.</i>	7 point Likert scale from 1. strongly disagree to 7. strongly agree
n2_rel	Ich mag die Menschen mit denen ich zu tun habe. <i>I really like the people I interact with.</i>	7 point Likert scale from 1. strongly disagree to 7. strongly agree
n3Com_R	Ich fühle mich oft nicht sehr kompetent <i>Often, I do not feel very competent.</i>	7 point Likert scale from 1. strongly disagree to 7. strongly agree

n4_aut_R	Ich fühle mich in meinem Leben unter Druck gesetzt. <i>I feel pressured in my life.</i>	7 point Likert scale from 1. strongly disagree to 7. strongly agree
n5Com	Menschen die mich kennen, sagen mir ich sei gut in dem, was ich mache. <i>People I know tell me I am good at what I do.</i>	7 point Likert scale from 1. strongly disagree to 7. strongly agree
n6_rel	Ich komme mit Menschen, zu denen ich Kontakt habe, gut aus. <i>I get along with people I come into contact with.</i>	7 point Likert scale from 1. strongly disagree to 7. strongly agree
n7_rel_R	Ich bleibe eher für mich selbst und habe nicht viele soziale Kontakte. <i>I pretty much keep to myself and don't have a lot of social contacts.</i>	7 point Likert scale from 1. strongly disagree to 7. strongly agree
n8_aut	Im Allgemeinen habe ich das Gefühl, meine Ideen und Meinungen frei äußern zu können. <i>I generally feel free to express my ideas and opinions.</i>	7 point Likert scale from 1. strongly disagree to 7. strongly agree
n9_rel	Ich betrachte Die Menschen, mit denen ich regelmäßig zu tun habe als meine Freunde. <i>I consider the people I regularly interact with to be my friends.</i>	7 point Likert scale from 1. strongly disagree to 7. strongly agree
n10Com	Ich hatte kürzlich die Möglichkeit, mir interessante neue Fähigkeiten anzueignen. <i>I have been able to learn interesting new skills recently.</i>	7 point Likert scale from 1. strongly disagree to 7. strongly agree
n11_aut_R	In meinem täglichen Leben muss ich oft das tun, was mir gesagt wird. <i>In my daily life, I frequently have to do what I am told.</i>	7 point Likert scale from 1. strongly disagree to 7. strongly agree
n12_rel	Die Menschen in meinem Leben haben mich gern. <i>People in my life care about me.</i>	7 point Likert scale from 1. strongly disagree to 7. strongly agree
n13Com	An den meisten Tagen habe ich das Gefühl, bei dem was ich mache etwas zu erreichen. <i>Most days I feel a sense of accomplishment from what I do.</i>	7 point Likert scale from 1. strongly disagree to 7. strongly agree
n14_aut	Menschen mit denen ich täglich zu tun habe berücksichtigen meine Gefühle. <i>People I interact with on a daily basis tend to take my feelings into consideration.</i>	7 point Likert scale from 1. strongly disagree to 7. strongly agree
n15Com_R	In meinem Leben bekomme ich nicht viele Möglichkeiten meine Fähigkeiten zu beweisen.	7 point Likert scale from 1. strongly disagree to 7. strongly agree

	<i>In my life I do not get much of a chance to show how capable I am.</i>	
n16_rel_R	Ich habe nicht viele eng vertraute Personen. <i>There are not many people that I am close to.</i>	7 point Likert scale from 1. strongly disagree to 7. strongly agree
n17_aut	Ich fühle mich, als könnte ich im Alltag im Großen und Ganzen ich selbst sein. <i>I feel like I can pretty much be myself in my daily situations.</i>	7 point Likert scale from 1. strongly disagree to 7. strongly agree
n18_rel_R	Menschen mit denen ich täglich zu tun habe scheinen mich nicht zu mögen. <i>The people I interact with regularly do not seem to like me much.</i>	7 point Likert scale from 1. strongly disagree to 7. strongly agree
n19Com_R	Ich fühle mich oft nicht sehr fähig. <i>I often do not feel very capable.</i>	7 point Likert scale from 1. strongly disagree to 7. strongly agree
n20_aut_R	Es gibt nicht viele Möglichkeiten, in denen ich für mich selbst entscheiden kann, wie ich mit Dingen im Alltag umgehe. <i>There is not much opportunity for me to decide for myself how to do things in my daily life.</i>	7 point Likert scale from 1. strongly disagree to 7. strongly agree
n21_rel	Menschen sind im Allgemeinen ziemlich freundlich zu mir. <i>People are generally pretty friendly towards me.</i>	7 point Likert scale from 1. strongly disagree to 7. strongly agree

Note: aut = need for autonomy, rel = need for relatedness, com(p) = need for competence; _R indicates reverse coded items

Appendix C4:

Individualismus Kollektivismus/ Self-Group Distinction Scale

Die Meinung in deiner Klasse / *The opinion of your class*

In diesem Teil wollen wir wissen, wie deine Klasse über verschiedene Themen denkt. Bitte denk nach, wie die Meinung deiner Klasse zu den jeweiligen Fragen ist. Bitte beantworte alle Fragen genau und sei ehrlich!

In this section, we want to know what your class thinks about various topics. Please think about the general opinion in your class.

c1	Wie denkt deine Klasse über Mitschüler, die andere um Rat fragen, wenn sie ein Problem haben? Meine Klasse findet das...	They think this is 5 point Likert scale from 1. Very good to 5. Very bad
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	<i>What does your class think of classmates asking for advice when they have a problem?</i>	
c2	Wie denkt deine Klasse über Aufgaben, die man in der Gruppe lösen soll? Meine Klasse findet das... <i>What does your class think of solving tasks in groups?</i>	They think this is 5 point Likert scale from 1. Very good to 5. Very bad
c3	Wie denkt deine Klasse über Mitschüler, die eine andere Meinung haben als die Lehrer? Meine Klasse findet das... What does your class think	They think this is 5 point Likert scale from 1. Very good to 7. Very bad
c4	Wie denkt deine Klasse über Mitschüler, die sich nicht an Gruppenaufgaben beteiligen wollen? Meine Klasse findet das... <i>What does your class think of classmates holding a different opinion than the teacher does?</i>	They think this is 5 point Likert scale from 1. Very good to 5. Very bad
c5	Wie denkt deine Klasse über Mitschüler, die ihre eigene Meinung durchsetzen wollen? Meine Klasse findet das... <i>What does your class think of classmates, who do not want to participate in group activity?</i>	They think this is 5 point Likert scale from 1. Very good to 5. Very bad
c6	Wie denkt deine Klasse über Mitschüler, die eine schwierige Aufgabe ganz allein lösen? Meine Klasse findet das... <i>What does your class think of other classmates, who want to push through their own opinion?</i>	They think this is 5 point Likert scale from 1. Very good to 5. Very bad
c7	Wie denkt deine Klasse über Mitschüler, die ihre Meinung nicht ändern wollen, auch wenn alle anderen anders denken? Meine Klasse findet das... <i>What does your class think of classmates solving a difficult task completely on their own?</i>	They think this is 5 point Likert scale from 1. Very good to 5. Very bad

Note: c1 = advice seeking, c2 & c4 = group activity, c3, c5, c6 & c7 = independence

Deine eigene Meinung / *Your opinion*

In diesem Teil wollen wir wissen, wie du über verschiedene Themen denkst. Bitte denk nach, wie deine Meinung zu den jeweiligen Fragen ist. Bitte beantworte alle Fragen ganz genau und sei ehrlich!

In this section, we want to know what you think about various topics. Please think about your own opinion.

i1	Wie denkst du über Mitschüler, die andere um Rat fragen, wenn sie ein Problem haben? Ich finde das... <i>What do you think of classmates asking for advice when they have a problem?</i>	I think this is 5 point Likert scale from 1. Very good to 5. Very bad
i2	Wie denkst du über Aufgaben, die man in der Gruppe lösen soll? Ich finde das... <i>What do you think of classmates asking for advice when they have a problem?</i>	I think this is 5 point Likert scale from 1. Very good to 5. Very bad
i3	Wie denkst du über Mitschüler, die eine andere Meinung haben als die Lehrer? Ich finde das... <i>What do you think of classmates holding a different opinion than the teacher does?</i>	I think this is 5 point Likert scale from 1. Very good to 5. Very bad
i4	Wie denkst du über Mitschüler, die sich nicht an Gruppenaufgaben beteiligen wollen? Ich finde das... <i>What do you think of classmates, who do not want to participate in group activity?</i>	I think this is 5 point Likert scale from 1. Very good to 5. Very bad
i5	Wie denkst du über Mitschüler, die ihre eigene Meinung durchsetzen wollen? Ich finde das... <i>What do you think of other classmates, who want to push through their own opinion?</i>	I think this is 5 point Likert scale from 1. Very good to 5. Very bad
i6	Wie denkst du über Mitschüler, die eine schwierige Aufgabe ganz allein lösen? Ich finde das...	I think this is 5 point Likert scale from 1. Very good to 5. Very bad

	<i>What do you think of classmates solving a difficult task completely on their own?</i>	
i7	Wie denkst du über Mitschüler, die ihre Meinung nicht ändern wollen, auch wenn alle anderen anders denken? Ich finde das... <i>What do you think of classmates solving a difficult task completely on their own?</i>	I think this is 5 point Likert scale from 1. Very good to 5. Very bad

Note: i1 = advice seeking, i2 & i4 = group activity, i3, i5, i6 & i7 = independence

Appendix C5:

Subjektive Einschätzung der eigenen Englischkenntnisse / *Subjective language proficiency*

	Wie bewertest du deine Sprachfähigkeiten? <i>How do you asses your language proficiency?</i>	
speak	Ich spreche sehr gut Englisch. <i>I can speak English very well.</i>	7 point Likert scale from 1. strongly disagree to 7. strongly agree
listen	Ich kann englische Filme und Nachrichten sehr gut verstehen. <i>I can understand English movies and news very well.</i>	7 point Likert scale from 1. strongly disagree to 7. strongly agree
read	Ich kann englische Bücher und Texte sehr gut lesen <i>I can read English books and resources very well.</i>	7 point Likert scale from 1. strongly disagree to 7. strongly agree
write	Ich kann über jedes englische Thema sehr gut schreiben <i>I can write about every topic in English very well</i>	7 point Likert scale from 1. strongly disagree to 7. strongly agree

Appendix D: Tables

Table D1 Skewness and Kurtosis Item Level Iran

Scales	N	Mean	Range	SD	Skewness			Kurtosis		
					Skewness	SE Skewness	Z- Skewness	Kurtosis	SE Kurtosis	Z- Kurtosis
speak	204	4,06	1-7	1,44	.01	.17	.05	- .66	.34	-1,96
listen	204	3,76	1-7	1,35	.00	.17	- .01	- .93	.34	-2,75
read	204	5,16	1-7	1,24	- .44	.17	-2,61	- .18	.34	- .54
write	204	4,35	1-7	1,23	.02	.17	.13	- .42	.34	-1,24
beEng1	204	4,40	1-7	1,82	- .13	.17	- .78	-1,17	.34	-3,45
beEng2_R	204	3,47	1-7	1,80	.12	.17	.71	-1,18	.34	-3,48
beEng3	204	4,25	1-7	1,72	- .26	.17	-1,55	-1,03	.34	-3,05
beEng4_R	204	3,78	1-7	1,86	.31	.17	1,84	-1,17	.34	-3,46
emEng5	204	4,56	1-7	1,94	- .25	.17	-1,47	-1,17	.34	-3,46
emEng6_R	204	3,92	1-7	1,82	.17	.17	1,02	-1,26	.34	-3,73
emEng7	204	4,72	1-7	1,92	- .27	.17	-1,57	-1,31	.34	-3,86
emEng8	204	4,65	1-7	1,94	- .18	.17	-1,04	-1,40	.34	-4,13
emEng9	204	4,58	1-7	2,04	- .15	.17	- .89	-1,48	.34	-4,35
emEng10	204	4,55	1-7	1,97	- .19	.17	-1,10	-1,40	.34	-4,12
cogEng11	204	4,23	1-7	1,69	- .23	.17	-1,36	-1,19	.34	-3,51
cogEng12	204	4,25	1-7	1,73	- .42	.17	-2,44	-1,08	.34	-3,19
cogEng13	204	4,35	1-7	1,63	- .51	.17	-2,97	- .87	.34	-2,56
cogEng14	204	4,25	1-7	1,64	- .40	.17	-2,33	-1,08	.34	-3,17
cogEng15	204	4,39	1-7	1,60	- .38	.17	-2,26	-1,03	.34	-3,04
m1ExEx	204	6,07	1-7	.94	- .90	.17	-5,28	.93	.34	2,75
m2IntKn	204	4,33	1-7	1,65	- .35	.17	-2,03	- .90	.34	-2,66
m3Ex_id	204	5,96	1-7	1,02	- .59	.17	-3,49	- .59	.34	-1,74
m4IntSti	204	4,25	1-7	1,75	- .24	.17	-1,41	-1,24	.34	-3,67
m5_amo	204	3,73	1-7	1,37	.09	.17	.53	- .37	.34	-1,09
m6IntAC	204	5,47	1-7	1,48	- .55	.17	-3,26	- .79	.34	-2,32
m7ExInt	204	5,68	1-7	.95	- .84	.17	-4,94	1,39	.34	4,10
m8ExEx	204	6,03	1-7	.99	-1,04	.17	-6,09	1,39	.34	4,10
m9IntKn	204	4,34	1-7	1,69	- .34	.17	-1,99	-1,15	.34	-3,40
m10Ex_id	204	5,77	1-7	1,07	- .47	.17	-2,76	- .54	.34	-1,59
m11IntSti	204	4,31	1-7	1,87	- .29	.17	-1,72	-1,31	.34	-3,86
m12_amo	204	3,73	1-7	1,33	.14	.17	.82	- .36	.34	-1,05
m13IntAC	204	5,47	1-7	1,48	- .55	.17	-3,25	- .84	.34	-2,47
m14ExInt	204	5,65	1-7	.91	-1,07	.17	-6,30	3,05	.34	8,99
m15ExEx	204	6,09	1-7	.97	- .92	.17	-5,42	.71	.34	2,10
m16IntKn	204	4,34	1-7	1,75	- .32	.17	-1,87	-1,13	.34	-3,34
m17Ex_id	204	5,75	1-7	1,18	- .60	.17	-3,50	- .29	.34	- .87
m18IntSti	204	4,21	1-7	2,04	- .27	.17	-1,57	-1,38	.34	-4,07
m19_amo	204	3,76	1-7	1,35	.08	.17	.49	- .43	.34	-1,27
m20IntAC	204	5,67	1-7	1,28	- .58	.17	-3,42	- .58	.34	-1,71
m21ExInt	204	5,60	1-7	.95	- .67	.17	-3,91	.70	.34	2,07
m22ExEx	204	5,96	1-7	1,07	- .97	.17	-5,72	1,30	.34	3,85
m23IntKn	204	4,35	1-7	1,67	- .28	.17	-1,66	-1,26	.34	-3,70
m24Ex_id	204	5,59	1-7	1,23	- .47	.17	-2,76	- .54	.34	-1,60
m25IntSti	204	4,22	1-7	1,85	- .18	.17	-1,07	-1,28	.34	-3,77
m26_amo	204	3,71	1-7	1,36	.10	.17	.57	- .47	.34	-1,39
m27IntAC	204	5,40	1-7	1,50	- .54	.17	-3,19	- .64	.34	-1,88
m28ExInt	204	5,60	1-7	1,00	- .40	.17	-2,32	- .42	.34	-1,23
n1_aut	204	4,27	1-7	1,19	- .39	.17	-2,27	- .26	.34	- .77

n2_rel	204	5,82	1-7	1,15	-.84	.17	-4,93	.29	.34	.85
n3Com_R	204	4,78	1-7	1,70	-.49	.17	-2,90	-.78	.34	-2,31
n4_aut_R	204	3,69	1-7	1,41	-.04	.17	-.24	-.63	.34	-1,85
n5Com	204	5,06	1-7	1,74	-.59	.17	-3,46	-.78	.34	-2,29
n6_rel	204	5,88	1-7	1,16	-.88	.17	-5,19	.38	.34	1,11
n7_rel_R	204	5,37	1-7	1,32	-.78	.17	-4,56	.15	.34	.43
n8_aut	204	4,26	1-7	1,22	-.36	.17	-2,12	.01	.34	.02
n9_rel	204	6,02	1-7	1,17	-1,21	.17	-7,11	1,48	.34	4,36
n10Com	204	5,07	1-7	1,66	-.62	.17	-3,62	-.63	.34	-1,85
n11_aut_R	204	3,66	1-7	1,47	-.14	.17	-.82	-.71	.34	-2,08
n12_rel	204	5,98	1-7	1,14	-.88	.17	-5,19	.07	.34	.20
n13Com	204	5,13	1-7	1,64	-.61	.17	-3,59	-.72	.34	-2,14
n14_aut	204	4,31	1-7	1,17	-.26	.17	-1,51	.10	.34	.30
n15Com_R	204	4,60	1-7	1,90	-.29	.17	-1,73	-1,21	.34	-3,56
n16_rel_R	204	5,31	1-7	1,32	-.65	.17	-3,83	.04	.34	.11
n17_aut	204	4,38	1-7	1,19	-.61	.17	-3,56	.54	.34	1,60
n18_rel_R	204	5,32	1-7	1,31	-.67	.17	-3,95	-.10	.34	-.31
n19Com_R	204	4,57	1-7	1,92	-.23	.17	-1,36	-1,26	.34	-3,71
n20_aut_R	204	3,58	1-7	1,49	-.03	.17	-.16	-.79	.34	-2,34
n21_rel	204	6,02	1-7	1,16	-1,12	.17	-6,60	.84	.34	2,47
c1	204	3,94	1-7	1,00	-.38	.17	-2,24	-.96	.34	-2,85
c2	204	3,60	1-7	.98	-.28	.17	-1,64	-.63	.34	-1,87
c3	204	2,85	1-7	1,07	.36	.17	2,09	-.65	.34	-1,92
c4	204	2,92	1-7	1,15	.41	.17	2,39	-.78	.34	-2,31
c5	204	2,83	1-7	1,15	.56	.17	3,27	-.70	.34	-2,06
c6	204	2,86	1-7	1,12	.48	.17	2,80	-.53	.34	-1,55
c7	204	2,83	1-7	1,17	.47	.17	2,75	-.75	.34	-2,20
i1	204	3,86	1-7	.81	-.30	.17	-1,75	-.43	.34	-1,27
i2	204	3,56	1-7	1,12	-.33	.17	-1,95	-.91	.34	-2,68
i3	204	2,77	1-7	1,12	.57	.17	3,36	-.38	.34	-1,12
i4	204	2,47	1-7	1,22	.59	.17	3,46	-.59	.34	-1,73
i5	204	2,55	1-7	1,28	.47	.17	2,76	-.82	.34	-2,43
i6	204	2,59	1-7	1,30	.46	.17	2,71	-.84	.34	-2,47
i7	204	2,35	1-7	1,26	.59	.17	3,46	-.71	.34	-2,10

Table D2 Skewness and Kurtosis Item Level Germany

Scales	N	Mean	Range	SD	Skewness			Kurtosis		
					Skewness	SE Skewness	Z- Skewness	Kurtosis	SE Kurtosis	Z- Kurtosis
speak	264	5,36	1-7	1,02	-1,46	.15	-9,72	3,29	.30	11,01
listen	264	5,43	1-7	1,17	-1,12	.15	-7,49	1,57	.30	5,25
read	264	5,47	1-7	1,07	-1,26	.15	-8,39	2,56	.30	8,58
write	264	4,61	1-7	1,21	-.58	.15	-3,88	.05	.30	.18
beEng1	264	5,44	1-7	1,19	-1,10	.15	-7,31	1,03	.30	3,43
beEng2_R	264	5,32	1-7	1,56	-.92	.15	-6,12	-.17	.30	-.57
beEng3	262	5,78	1-7	1,21	-1,37	.15	-9,07	1,52	.30	5,06
beEng4_R	262	6,18	1-7	1,26	-1,85	.15	-12,30	2,86	.30	9,54
emEng5	264	4,75	1-7	1,61	-.77	.15	-5,17	-.05	.30	-.18
emEng6_R	262	3,94	1-7	1,58	.37	.15	2,47	-.80	.30	-2,67
emEng7	264	3,55	1-7	1,48	-.21	.15	-1,38	-1,06	.30	-3,56
emEng8	264	4,68	1-7	1,49	-.68	.15	-4,55	-.34	.30	-1,15
emEng9	264	4,39	1-7	1,38	-.56	.15	-3,75	-.42	.30	-1,41
emEng10	263	4,71	1-7	1,48	-.53	.15	-3,51	-.22	.30	-.73

cogEng11	264	2,93	1-7	1,88	.63	.15	4,21	- .90	.30	-3,00
cogEng12	263	4,36	1-7	1,87	- .38	.15	-2,55	-1,03	.30	-3,43
cogEng13	263	2,39	1-7	1,54	.86	.15	5,74	- .54	.30	-1,79
cogEng14	262	3,68	1-7	1,79	.03	.15	.20	-1,23	.30	-4,11
cogEng15	264	2,19	1-7	1,43	1,24	.15	8,28	.85	.30	2,83
m1ExEx	264	5,77	1-7	1,45	-1,69	.15	-11,30	2,84	.30	9,52
m2IntKn	263	4,05	1-7	1,54	- .33	.15	-2,20	- .53	.30	-1,78
m3Ex_id	264	5,93	1-7	1,27	-1,70	.15	-11,33	3,26	.30	1 .91
m4IntSti	264	3,81	1-7	1,67	- .26	.15	-1,74	- .99	.30	-3,31
m5_amo	263	2,56	1-7	1,68	.90	.15	6,02	- .26	.30	- .87
m6IntAC	264	3,28	1-7	1,65	.15	.15	1,00	- .93	.30	-3,10
m7ExInt	263	4,76	1-7	1,91	- .70	.15	-4,68	- .67	.30	-2,24
m8ExEx	264	5,99	1-7	1,28	-1,89	.15	-12,58	4,02	.30	13,47
m9IntKn	262	4,08	1-7	1,54	- .42	.15	-2,76	- .64	.30	-2,14
m10Ex_id	262	6,55	1-7	.71	-1,96	.15	-13,04	6,12	.30	2 .41
m11IntSti	261	3,77	1-7	1,60	- .33	.15	-2,17	-1,00	.30	-3,34
m12_amo	261	2,29	1-7	1,63	1,22	.15	8,10	.53	.30	1,75
m13IntAC	262	3,94	1-7	1,71	- .18	.15	-1,17	- .91	.30	-3,02
m14ExInt	264	3,26	1-7	1,81	.15	.15	.98	-1,18	.30	-3,94
m15ExEx	264	6,39	1-7	.82	-1,60	.15	-1 .70	3,60	.30	12,04
m16IntKn	263	4,60	1-7	1,55	- .67	.15	-4,43	- .22	.30	- .74
m17Ex_id	263	5,52	1-7	1,50	-1,13	.15	-7,52	.83	.30	2,77
m18IntSti	264	3,46	1-7	1,84	.18	.15	1,17	-1,13	.30	-3,77
m19_amo	264	1,93	1-7	1,35	1,56	.15	1 .39	1,83	.30	6,13
m20IntAC	263	2,80	1-7	1,60	.61	.15	4,04	- .54	.30	-1,82
m21ExInt	263	4,20	1-7	1,70	- .44	.15	-2,93	- .70	.30	-2,35
m22ExEx	262	5,91	1-7	1,23	-1,59	.15	-1 .55	3,02	.30	1 .08
m23IntKn	264	4,67	1-7	1,57	- .71	.15	-4,75	- .02	.30	- .06
m24Ex_id	263	5,21	1-7	1,67	- .96	.15	-6,41	.16	.30	.53
m25IntSti	261	3,43	1-7	1,65	.09	.15	.61	- .86	.30	-2,85
m26_amo	262	1,89	1-7	1,41	1,72	.15	11,43	2,36	.30	7,87
m27IntAC	264	3,59	1-7	1,61	- .01	.15	- .10	- .75	.30	-2,51
m28ExInt	264	4,54	1-7	1,68	- .67	.15	-4,44	- .32	.30	-1,06
n1_aut	264	5,37	1-7	1,52	-1,13	.15	-7,56	.72	.30	2,40
n2_rel	264	6,05	1-7	.98	-1,62	.15	-1 .78	4,13	.30	13,82
n3Com_R	263	4,51	1-7	1,49	.02	.15	.13	- .83	.30	-2,78
n4_aut_R	264	4,16	1-7	1,80	.21	.15	1,38	-1,22	.30	-4,10
n5Com	262	5,27	1-7	1,26	- .98	.15	-6,51	1,07	.30	3,57
n6_rel	263	6,26	1-7	.93	-2,20	.15	-14,67	8,16	.30	27,25
n7_rel_R	264	5,50	1-7	1,70	- .98	.15	-6,51	- .09	.30	- .31
n8_aut	264	5,53	1-7	1,35	-1,25	.15	-8,35	1,29	.30	4,32
n9_rel	264	5,60	1-7	1,39	-1,35	.15	-9,00	1,64	.30	5,50
n10Com	264	4,39	1-7	1,74	- .45	.15	-2,97	- .56	.30	-1,89
n11_aut_R	262	3,57	1-7	1,55	.42	.15	2,76	- .62	.30	-2,06
n12_rel	264	5,94	1-7	.88	-1,29	.15	-8,59	3,93	.30	13,17
n13Com	264	4,62	1-7	1,49	- .63	.15	-4,19	- .36	.30	-1,19
n14_aut	264	5,08	1-7	1,35	- .79	.15	-5,30	.15	.30	.49
n15Com_R	263	4,96	1-7	1,59	- .51	.15	-3,42	- .80	.30	-2,66
n16_rel_R	263	4,68	1-7	2,14	- .43	.15	-2,85	-1,33	.30	-4,45
n17_aut	264	5,37	1-7	1,46	-1,14	.15	-7,60	.76	.30	2,53
n18_rel_R	263	5,92	1-7	1,28	-1,72	.15	-11,47	2,99	.30	1 .00
n19Com_R	260	4,92	1-7	1,62	- .38	.15	-2,50	- .97	.30	-3,21
n20_aut_R	264	5,05	1-7	1,65	- .73	.15	-4,84	- .50	.30	-1,67
n21_rel	264	5,97	1-7	.96	-1,82	.15	-12,12	6,35	.30	21,25

c1	264	2,38	1-7	.71	- .04	.15	- .24	.08	.30	.27
c2	264	1,91	1-7	.80	.70	.15	4,66	.38	.30	1,27
c3	264	2,26	1-7	.90	.04	.15	.24	- .77	.30	-2,59
c4	264	3,90	1-7	.75	- .66	.15	-4,43	1,22	.30	4,09
c5	262	3,10	1-7	.93	- .05	.15	- .36	- .18	.30	- .60
c6	264	2,61	1-7	.87	.09	.15	.60	- .13	.30	- .42
c7	264	3,58	1-7	.87	- .26	.15	-1,76	.07	.30	.25
i1	264	1,66	1-7	.67	.60	.15	3,98	- .34	.30	-1,13
i2	264	1,89	1-7	.94	1,04	.15	6,96	.79	.30	2,63
i3	262	2,13	1-7	.91	.33	.15	2,17	- .36	.30	-1,21
i4	264	4,14	1-7	.91	- .76	.15	-5,09	- .07	.30	- .23
i5	262	2,76	1-7	1,14	.05	.15	.34	- .71	.30	-2,38
i6	264	2,29	1-7	1,02	.35	.15	2,33	- .45	.30	-1,50
i7	264	3,06	1-7	1,19	- .24	.15	-1,57	- .62	.30	-2,07

Note: Z-Skewness= *Skewness/SE Skewness*; Z-Kurtosis=*Kurtosis/SE Kurtosis*; SD = Standard difference

Table D3 Descriptive statistics SGDS Iran

	N	Mean	Range	SD	Skewness			Kurtosis		
					Skewness	SE	Z-Skewness	Kurtosis	SE	Z-Kurtosis
Abs_SGD1	204	0,84	1-5	0,72	0,65	0,17	3,82	0,44	0,34	1,30
Abs_SGD2	204	0,81	1-5	0,76	0,81	0,17	4,76	0,92	0,34	2,71
Abs_SGD3	204	0,75	1-5	0,64	0,39	0,17	2,32	-0,11	0,34	-0,34
Abs_SGD4	204	0,79	1-5	0,82	1,12	0,17	6,55	1,66	0,34	4,90
Abs_SGD5	204	0,72	1-5	0,75	0,80	0,17	4,72	0,17	0,34	0,52
Abs_SGD6	204	0,88	1-5	0,78	0,72	0,17	4,22	0,62	0,34	1,84
Abs_SGD7	204	1,09	1-5	0,91	0,89	0,17	5,24	0,92	0,34	2,71
SGD_groupac	204	0,80	1-5	0,54	0,64	0,17	3,77	0,47	0,34	1,39
SGD_advseek	204	0,84	1-5	0,72	0,65	0,17	3,82	0,44	0,34	1,30
SGD_inde	204	0,86	1-5	0,44	1,00	0,17	5,86	2,39	0,34	7,04
SGD	204	0,84	1-5	0,33	0,96	0,17	5,63	2,23	0,34	6,59

Note: Z-Skewness= *Skewness/SE Skewness*; Z-Kurtosis=*Kurtosis/SE Kurtosis*; SD = Standard difference

Table D4 Descriptive statistics SGDS Germany

	N	Mean	Range	SD	Skewness			Kurtosis		
					Skewness	SE	Z-Skewness	Kurtosis	SE	Z-Kurtosis
Abs_SGD1	264	0,78	1-5	0,70	0,74	0,15	4,94	1,11	0,30	3,70
Abs_SGD2	264	0,56	1-5	0,69	1,24	0,15	8,28	2,21	0,30	7,40
Abs_SGD3	262	0,58	1-5	0,67	1,10	0,15	7,33	2,10	0,30	7,01
Abs_SGD4	264	0,74	1-5	0,71	0,87	0,15	5,83	1,36	0,30	4,56
Abs_SGD5	260	0,78	1-5	0,83	1,04	0,15	6,89	1,33	0,30	4,43
Abs_SGD6	264	0,68	1-5	0,78	1,20	0,15	8,01	1,84	0,30	6,15
Abs_SGD7	264	0,80	1-5	0,97	1,27	0,15	8,47	1,25	0,30	4,19
SGD_groupac	264	0,65	1-5	0,54	1,37	0,15	9,15	5,22	0,30	17,47
SGD_advseek	264	0,78	1-5	0,70	0,74	0,15	4,94	1,11	0,30	3,70
SGD_inde	259	0,71	1-5	0,51	1,88	0,15	12,45	7,61	0,30	25,22
SGD	259	0,71	1-5	0,39	1,70	0,15	11,22	5,96	0,30	19,78

Note: Z-Skewness= *Skewness/SE Skewness*; Z-Kurtosis=*Kurtosis/SE Kurtosis*; SD = Standard difference

Table D5 Factor loadings

Latent constructs	Items	Iran		Germany		Complete sample	
		Unstan- dardized	Standar- dized	Unstan- dardized	Standar- dized	Unstan- dardized	Standar- dized
Autonomy	N17_AUT	1	0,865	1	0,556	1.030	0,746
	N14_AUT	0.918	0,851	0.918	0,52	1.019	0,662
	N8_AUT	1.119	0,928	1.119	0,662	1.118	0,836
	N1_AUT	0.998	0,864	0.998	0,516	1.019	0,692
Competence	N5COM	1	0,636	1	0,452	1	0,542
	N15COM_R	1.710	0,975	1.710	0,604	1.646	0,762
	N19COM_R	1.716	0,958	1.716	0,632	1.889	0,862
	N3COM_R	1.408	0,886	1.408	0,557	1.542	0,78
Relatedness	N2_REL	1	0,743	1	0,554	1	0,656
	N6_REL	1.156	0,834	1.156	0,676	1.158	0,766
	N12_REL	0.983	0,76	0.983	0,593	0.984	0,686
	N21_REL	1.068	0,779	1.068	0,619	1.090	0,723
Extrinsic external	M1EXEX	1	0,719	1	0,632	1	0,657
	M8EXEX	1.192	0,817	1.192	0,857	1.216	0,869
	M22EXEX	1.007	0,695	1.007	0,712	0.950	0,681
Extrinsic introjected	M7EXINT	1	0,71	1	0,646	1	0,741
	M21EXINT	1.186	0,844	1.186	0,8	1.056	0,806
	M28EXINT	1.060	0,745	1.060	0,75	1.009	0,804
Extrinsic identified	M3EX_ID	1	0,534	1	0,545	1	0,548
	M17EX_ID	1.557	0,714	1.557	0,717	1.565	0,728
	M24EX_ID	1.791	0,785	1.791	0,735	1.753	0,743
Amotivation	M12_AMO	1	0,876	1	0,569	1	0,724
	M19_AMO	1.144	0,93	1.144	0,842	1.249	0,926
	M26_AMO	1.121	0,893	1.121	0,796	1.216	0,888
Intrinsic accomplishment	M6INTAC	1	0,881	1	0,769	1	0,842
	M13INTAC	0.867	0,821	0.867	0,687	0.950	0,859
	M27INTAC	0.814	0,728	0.814	0,624	0.823	0,736
Intrinsic knowledge	M2INTKN	1	0,869	1	0,723	1	0,79
	M9INTKN		0,933		0,806	1.113	0,868
	M16INTKN		0,91		0,813	1.128	0,863
	M23INTKN		0,885		0,772	1.073	0,834
Intrinsic stimulation	M4INTSTI	1	0,908	1	0,589	1	0,751
	M18INTSTI	1.221	0,935	1.221	0,668	1.280	0,84
	M25INTSTI	1.082	0,914	1.082	0,641	1.081	0,781
Language proficiency	SPEAK	1	0,734	1	0,772	1	0,856
	LISTEN	1.193	0,883	1.193	0,736		0,788
	READ	0.571	0,463	0.571	0,436		0,575

Curriculum vitae

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Eidesstattliche Erklärung

Hiermit erkläre ich, dass ich die vorliegende Masterarbeit selbstständig und ohne Verwendung unerlaubter Hilfsmittel verfasst habe. Alle Inhalte, die direkt oder indirekt aus fremden Quellen entnommen wurden, sind durch entsprechende Quellenangaben gekennzeichnet.

Wien, am 7. Mai 2016

Ingo Minnameyer