Testing Concurrent Validity and Group-Differences of a Four-dimensional Assessment of Attitudes Toward Mutual Acculturation

Petra Sidler
University of Applied Sciences and Arts Northwestern Switzerland

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Abstract

Acculturation attitudes commonly focus on minority and majority attitudes toward minority acculturation. However, because acculturation is a mutual process, not only are members of minority or migrant groups expected to experience acculturation, but members of the majority also are. In this study, I assessed the attitudes of 375 minority and majority students (M_{age} = 12.67 years, SD = 0.69, range 11–15, 46% female) in Swiss secondary schools toward (a) migration background students' heritage culture maintenance and (b) dominant culture adoption, (c) majority students' acquisition of cultural knowledge, and (d) schools' endorsement of intercultural contact. This study extends the validation of the four-dimensional measurement of attitudes toward mutual acculturation (Sidler et al., 2021) through assessing group-specific differences of each dimension and through exploring the relationship of each dimension with school adjustment. The results indicated group-specific differences only within the heritage culture maintenance dimension, which is more important for second generation students. As no further group differences in relation to the four dimensions were found, these findings indicate their equal importance for minority as well as majority students and thus demonstrate the importance of a mutual acculturation framework for students independently of their migration background and nationalities. Additionally, significant positive relationships with teacher support, self-efficacy, self-esteem, and self-determination were found for each dimension except dominant culture adoption. These results strengthen the concurrent validity of this four-dimensional assessment of mutual acculturation within the school context, as 3 out of 4 dimensions were significantly linked to psychological adjustment and teacher support.

Keywords: mutual acculturation, acculturation attitudes, concurrent validity, adolescents, school adjustment, Switzerland

Testing Concurrent Validity and Group-Differences of a Four-Dimensional Assessment of Attitudes toward Mutual Acculturation

Through global migration movements, societies are becoming increasingly culturally diverse. This is noticeable not only across societies but also within societies and their institutions. From an ecological perspective (Bronfenbrenner, 1979), schools interact with national contexts while being embedded in them. Adolescents thus not only acculturate within nation-states but also within schools, both being important contexts for adolescents' acculturation (Motti-Stefanidi et al., 2012). Through peer interaction, however, not only do migrant students or descendants of migrants experience acculturation at school, but majority students do, too. Acculturation relates to the cultural and psychological changes individuals and groups experience when they have intercultural contact (Berry, 2019). Because acculturation is a mutual process in which changes may take place in all individuals and groups who are in contact with each other (Berry, 2009, 2019), it concerns the whole society and not just migrants (Chirkov, 2009). A quantitative measurement assessing majority and minority students' attitudes toward mutual acculturation has recently been developed and validated in the German-speaking context of Switzerland (Sidler et al., 2021). This study explores group differences in relation to the four mutual acculturation dimensions based on having a migration background, nationalities (Swiss, Europe, world), and generation status (first, second, 2.5, third/majority). Moreover, this study extends the conceptualization and validation study of Sidler et al. (2021) by testing the concurrent validity of the four-dimensional measurement of attitudes toward mutual acculturation through assessing its cross-sectional relation with majority and minority students' psychological adjustment and teacher support ratings. Finding significant associations between attitudes toward mutual acculturation and school adjustment would confirm concurrent validity of the measure, as school adjustment has been found to be embedded in the acculturation process (Makarova & Birman, 2015, 2016). To use this measurement as a valid and reliable tool not only in the Swiss school context but also to adjust, apply and test it in other contexts, testing concurrent validity and understanding group-differences of each dimension are key.

Conceptual Framework

The Swiss Context

In 2019, the year the data for this study were collected, Switzerland counted 8,606,033 residents (Federal Statistical Office [FSO], 2021a). Of Switzerland's residents, 30% were born abroad and 25% did not have Swiss citizenship (FSO, 2021b). However, given the unfavorable access to nationality in Switzerland (Migrant Integration Policy Index [MIPEX], 2020), numbers on nationalities should be interpreted and compared with caution. Specifically, 20% of those who do not have Swiss citizenship were born in Switzerland and another 20% have already lived in Switzerland for 20 or more years (FSO, 2020a). Nevertheless, having a diverse population means that schools, school directors, and teachers face the challenge of accommodating students with diverse cultural backgrounds (Makarova, 2019).

In 2019, Switzerland scored 50 out of 100 points (slightly unfavorable for

antidiscrimination and access to nationality; halfway favorable for family reunion, education, political participation, and permanent residence; slightly favorable for labor market mobility; and favorable for health) on the MIPEX scale (2020), which assesses policies on integrating migrants to create a multidimensional picture of equal rights and migrants' opportunities to participate in society. Via an expert survey, the MIPEX assesses areas such as health, labor market mobility, access to nationality and political participation, family reunion, discrimination, and education. Concerning education, the MIPEX captures how accessible education is for migrant students, how teachers are being trained to deal with cultural diversity in schools, and whether the special needs of migrant students are considered. Thus, a halfway favorable education context means that there still is a lot to do. Moreover, the extent of educational inequalities (e.g., OECD, 2012, 2021) support the insight that there are challenges to solve on both the policy and local school levels.

Mutual Acculturation

According to cross-cultural psychology, intercultural contact leads to acculturation, which is a process of ongoing cultural and psychological change (Berry, 2019). Acculturation has been conceptualized as a mutual process (Berry, 2009; Chirkov, 2009). However, when acculturation attitudes have been assessed, the focus commonly was on minority or majority attitudes concerning minority acculturation (e.g., following the model by Bourhis et al., 1997), even though it has been argued that only studying minority and majority group members' attitudes toward minority acculturation is one-sided and therefore both invalid and ethnocentric (Berry, 2006). Because acculturation involves a negotiation of dominance (Zick, 2010), I use the terms "minority" or "nondominant group" and "majority" or "dominant group" in this article. In Switzerland, for example, even though numerically all residents are represented through politicians on the national level, active and passive political rights on the national level are limited to Swiss nationals (The Swiss Parliament, n.d.), leading to Swiss nationals dominating the political discourse. Thus, Swiss nationals, the dominant majority, make decisions through their voting rights on behalf of all residents.

According to Zick (2010), acculturation is a process of change and of intercultural relationships. It is a social phenomenon influenced by micro-, meso-, and macrosocial factors. Most importantly, it is a contextual process (Birman & Simon, 2014); thus, acculturation within the family, at school, or in the workplace may look differently for the same individual. Hermeneutically, acculturation stems from *ad cultura*, Latin for "leading to a culture" (Zick, 2010). This leads inevitably to the question of what culture is. However, it is difficult to define culture as a concept along with all aspects of a specific culture (Kroeber & Kluckhohn, 1952; Olmedo, 1979; Rudmin, 2009). Moreover, culture is a vague and dynamic concept that continuously changes (MacLachlan et al., 2004). Given the variety of definitions of culture as a concept and the sheer impossibility of assessing the entirety of one culture, it is not surprising that conceptualizations and measurements of acculturation are diverse. The four-dimensional assessment of attitudes toward mutual acculturation used in this study relates to culture as it pertains to three major issues: first, visible artifacts such as clothing; second, visible behaviors that are based on code systems and rules such as languages, traditions, customs, and familial culture; and third, fundamental attitudes, values, beliefs such as religion, way of life, and gender roles (Rudmin, 2009). However, these three issues may overlap; for example, one's way of life may relate strongly to fundamental values and beliefs yet also be a visible behavior.

Mutual Acculturation Attitudes, Orientations, and Expectations

Within the acculturation framework, acculturation conditions, acculturation orientations or attitudes, and acculturation outcomes are distinguished (Arends-Tóth & van de Vijver, 2006). In this study, acculturation attitudes of both, minority and majority students haven been assessed toward both minority and majority students' acculturation. Acculturation attitudes commonly refer to attitudes toward someone's acculturation, whether that of someone else or oneself. Acculturation orientations refer to how an individual intends to acculturate, whereas acculturation expectations refer to how someone is expected to acculturate. The latter two thus include taking perspectives into account. Yet, acculturation attitudes, orientations, and expectations are commonly assessed through a bidimensional measurement focusing on minority acculturation.

The bidimensional measurement of Berry et al. (1989) assessing attitudes toward minority acculturation combines two dimensions asking whether it is of value to maintain one's own cultural identity and characteristics while maintaining relationships with other groups. In combining the two dimensions, four acculturation strategies or orientations of minority-group members are defined: *integration* (maintaining one's heritage culture while maintaining relationships with other groups), *separation* (maintaining one's heritage culture and not maintaining relationships with other groups), *assimilation* (not maintaining one's heritage culture and maintaining relationships with other groups), and *marginalization* (neither maintaining one's heritage culture nor maintaining relationships with other groups). Bourhis et al. (1997) enhanced this assessment by exchanging the second dimension, maintaining relationships with other groups, with the question of whether it is considered important to adopt the dominant culture. Additionally, Bourhis et al. differentiated between the perspectives of minority and majority group members. The first relates to the acculturation orientations of minority group members, whereas the second relates to the acculturation expectations of the majority group members toward minority group members. However, the agent of acculturation, the individual who experiences acculturation, is always considered a minority group member, whether they are a migrant or someone belonging to an ethnic minority.

Furthermore, recent acculturation research has turned to majority acculturation (Haugen & Kunst, 2017; Kunst et al., 2021), which assesses not the recognition of minority-group culture by the majority group but rather the incorporation of aspects of minority cultures leading to changes in the dominant culture. In a review by Kunst et al. (2021), the acculturation orientations of majority group members involved integration, separation, assimilation, marginalization, and diffuse strategies. As with attitudes toward minority acculturation, a bidimensional assessment was used to measure the mainstream culture maintenance and minority culture adoption of majority-group members, thus assessing the acculturation orientations of majority-group members.

However, assessing attitudes toward minority or majority acculturation (from the perspective of minority- and/or majority-group members) means assessing one side of the mutual acculturation process. Measuring acculturation attitudes toward minority and majority acculturation simultaneously aims at grasping the mutuality of the acculturation process (Sidler et al., 2021). In the context of schools, there are three acculturating agents: minority students, majority students, and the schools themselves (see Figure 1). Schools are cultural actors with pervasive power structures (Warikoo & Carter, 2009) and are key social contexts for the development of adolescents (Eccles & Roeser, 2012). Thus, a school is not only an

acculturation context but also an acculturation agent. To ensure equal educational opportunities, schools should enable majority and minority students alike to be successful. Moreover, schools supporting intercultural contact may enhance learning about others and about yourself and therefore developing key intercultural skills (Schwarzenthal et al., 2017). Additionally, schools that endorse intercultural contact and exchange may also support the formation of intergroup friendships (Schachner et al., 2015). Most importantly, through providing support for positive intercultural contact and space for discussions about cultural diversity, schools can prepare students to become members of a culturally diverse society through promoting intercultural understanding (Schachner et al., 2021). This means that in the school context, acculturation attitudes can be held toward the majority and minority students and the schools. Concerning perspectives, members of minority and majority groups may have acculturation orientations concerning their own acculturation and acculturation expectations concerning the members of the other group as well as the schools.

Figure 1
Attitudes Toward Mutual Acculturation Within the School Context
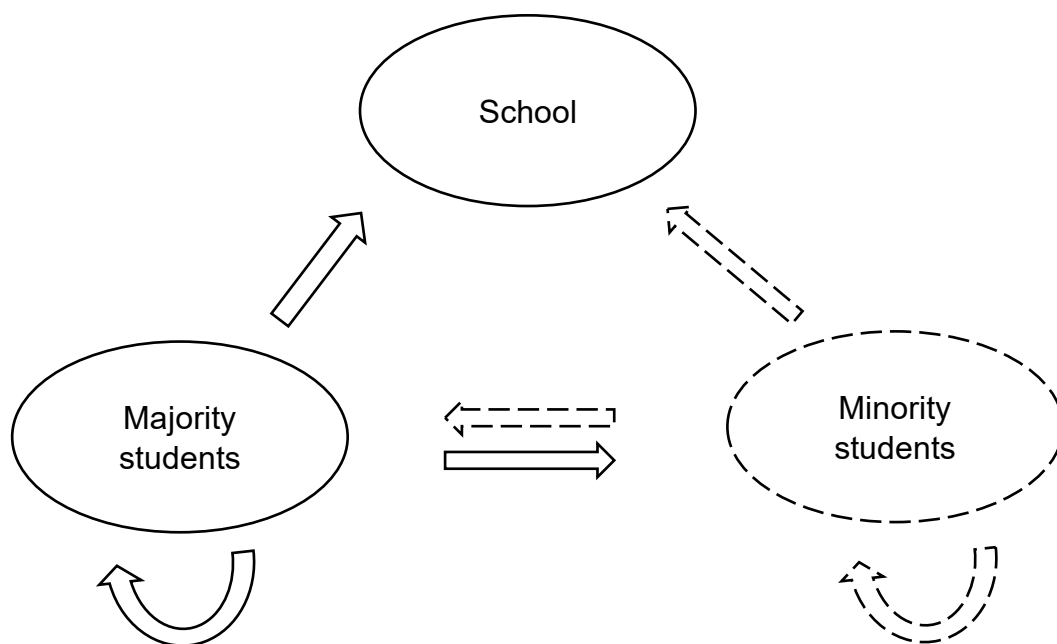
Note. Acculturation agents are presented in the circles, and the arrows represent perspectives toward the various agents of acculturation: majority students may have an attitude toward their own acculturation and toward the acculturation of the minority students. Both minority and majority students may have an attitude toward schools' acculturation.

Mutual Acculturation and School Adjustment

Extensive review studies have found that minority students' school adjustment is embedded in their acculturation process (Makarova & Birman, 2015, 2016). However, even though most studies have found the integration strategy to be the most conducive to school adjustment, the results were diverse and inconsistent (Makarova & Birman, 2015, 2016). Moreover, recent meta-analyses showed a weak correlational link between acculturation and adjustment (Bierwiaczonek & Kunst, 2021). However, it has been emphasized that the context plays an important role: The integration strategy was found to have a positive effect on school

adjustment when little stereotype threat was being experienced and a negative effect when a lot of stereotype threat was being experienced (Baysu & Phalet, 2019). Moreover, if the context expected assimilation, then an assimilationist strategy proved to be best (Makarova & Birman, 2015; Schwartz et al., 2020). Thus, the specific school context shapes the acculturation attitudes that may be associated with positive school adjustment. However, schools' organizational context and climate are also promotive and protective factors for positive development of adolescents in culturally diverse school contexts (Juang & Schachner, 2020). Therefore, schools are not only an acculturation context but also acculturating agents, influencing adolescents' development through adjusting their acculturation expectations and diversity policies (Schachner et al., 2016). Within this context, intercultural contact concerns learning how to understand each other with one's own tools, representations, and internalized theories (Bossuroy, 2016). Thus, majority and minority students show cognitive efforts to adapt not only to new cultures they might experience at school but also to new ways of learning and new learning contexts. The cognitive system is connected to the psychological system, meaning that intercultural relations at school involve sociocultural and psychological adaptations. Thus, because school is a context of mutual acculturation (Sidler et al., 2021), majority students' acculturation is expected to also be connected to school adjustment.

School adjustment involves various aspects concerning students' adaptations to their role as students and to the school context, which involves teachers, rules, performance, and peers (Lakhani et al., 2017). Given that maladjustment at school may lead to performance issues and mental health problems (Lakhani et al., 2017), understanding the factors that influence it is important, particularly because performance issues and school outcomes influence adolescents' future life opportunities (OECD, 2021). In this study, I assessed school adjustment through teacher support (relating to how well students felt supported by their teachers), self-esteem, self-efficacy, and self-determination. Teacher support and positive relationships between teachers and students can promote positive school adjustment (Aldrup et al., 2018; Fernández Lasarte et al., 2020; Kiuru et al., 2015), particularly for migrant students (Guerra et al., 2019). Psychological factors such as self-esteem play important roles in school success (Moyano et al., 2020). Additionally, self-efficacy is commonly held as a predictor of performance and was recently found to be even more important than grit for achievement (Usher et al., 2019). Self-determination relates to three basic needs—autonomy, competence, and relatedness (Deci & Ryan, 2010)—and the satisfaction of these three needs is beneficial for intrinsic motivation, which, in turn, is conducive to school adjustment.

The Current Study

Most commonly, acculturation attitudes have been assessed regarding minority group members' acculturation. Recent research has started to study majority acculturation, however, establishing a mutual acculturation framework promises innovative insights into how minority and majority group members acculturate and relate to each other. To do so, I used a novel assessment of attitudes toward mutual acculturation that was comprised of four dimensions: (a) migration background students' heritage culture maintenance and (b) dominant culture adoption, (c) majority students' acquisition of cultural knowledge, and (d) schools' endorsement of intercultural contact. This four-dimensional assessment of attitudes toward mutual acculturation has been validated within the Swiss school context, and the factorial

validity as well as its reliability was excellent for all four dimensions (Sidler et al., 2021). The relationship of each dimension with school adjustment, however, has not been assessed, which would strengthen its concurrent validity. By analyzing the same data further in this study, I aimed to understand better (a) whether there are group differences concerning each of the four dimensions, meaning whether minority group members and majority group members have different attitudes toward mutual acculturation, and (b) how the four dimensions relate to the four measurements of school adjustment (teacher support, self-esteem, self-efficacy, and self-determination). Thus, I tackled the following two research questions:

1. Are there group differences in attitudes toward mutual acculturation within the school context? Based on the interactive acculturation model, certain dimensions were expected to be more important to one group than the other. Thus, minority-group members are expected to consider heritage culture maintenance as more important than majority-group members.

2. How do each of the four dimensions relate to school adjustment? To demonstrate concurrent validity, significant associations between the four dimensions and ratings on teacher support, self-esteem, self-efficacy, and self-determination were expected, because psychological and sociocultural school adjustment is embedded in the acculturation process. Because this was an exploratory study using cross-sectional panel data, no hypotheses concerning the directionality and strength of the associations were made.

Method

Participants

In total, 375 students in 20 schools participated in the study. The exclusion of 11 empty questionnaires left 364 students (46% female, $n = 167$; 54% male, $n = 190$; missing data sex $n = 7$; $M_{age} = 12.67$ years, $SD = 0.69$, range 11–15) for data analysis. In August 2019, a few weeks before the start of data collection, the participants had started lower secondary education (like middle school in the United States). Because 19% of the students were born abroad, the questionnaires were not only prepared in German but also translated into four additional languages (Arabic, English, French, and Turkish). Using a culturally sensitive approach, the content translation was done following the four-eyes principle (Peña, 2007). Still, 96% of the students completed the questionnaire in German.

Procedure

After receiving approval from the ethics committee of the University of Zurich and assessing pilot data, the research team contacted cantonal educational offices. Then we contacted school directors and class teachers from the vocational and technical school tracks through email and phone calls, and the teachers informed the parents and students. Each participant's legal guardian or next of kin provided written informed consent for the student's participation in the study. Additionally, we obtained informed consent from the adolescents themselves. In total, 32 classes from 20 schools were recruited in three German-speaking cantons of Switzerland: Aargau, Basel-Stadt, and Solothurn. Pilot data was collected and analyzed in spring 2019 with a school class that did not participate in the data collection in autumn 2019.

Research assistants collected data using a web-based survey in visits to the classes during school time. The research assistants instructed the students, answered their questions, and wrote a protocol on each data collection. It took the students 35–60 minutes to fill in the questionnaires on tablets, which the research assistants provided.

As this is a convenience sample, its composition (46% female, $n = 167$; 53% Swiss, $n = 193$) was compared with official statistics in the three cantons concerned. Given the lower percentage of females and Swiss nationals (FSO, 2020b, 2020c) at the lowest school level, the sample composition in terms of gender and Swiss nationality was comparable to cantonal statistics.

Measures

Attitudes toward mutual acculturation were assessed with a four-dimensional measurement consisting of seven items per dimension using a 4-point Likert scale ranging from 1 (*disagree*) to 4 (*agree*; for information on its development consider Sidler et al., 2021). Thus, higher scores indicated higher agreement with the relevant item and dimension. Attitudes toward migration background students' heritage culture maintenance (e.g., "I find that it is important for teenagers from another country who live in Switzerland to be allowed to preserve their way of life") and toward migration background students' dominant culture adoption (e.g., "I find that it is important for teenagers from other countries who live in Switzerland to adopt one of the four official languages in Switzerland") were the first two dimensions and assessed attitudes toward minority students' acculturation. Attitudes toward majority students' acquisition of cultural knowledge (e.g., "I find it is important that Swiss teenagers who live in Switzerland have to get to know the religions of teenagers from other countries who live in Switzerland") and attitudes toward schools' endorsement of intercultural contact (e.g., "I find it is important that the Swiss schooling system gives possibilities for teenagers from other countries and Swiss teenagers to exchange information about traditions and customs") were the third and fourth dimensions, assessing attitudes toward majority students and institutional acculturation, respectively. The Cronbach's alpha and McDonald's omega showed high reliability across the four dimensions in the main sample as well as the migration background and the non-migration background subsamples (see Table 1).

Teacher support was assessed using a five-item scale with a 4-point Likert answer scale ranging from 1 (*do not agree at all*) to 4 (*strongly agree*; e.g., "When I need additional support, then I receive it from my teachers"; Hertel et al., 2014). The Cronbach's alpha and McDonald's omega showed good reliability (see Table 1).

Self-esteem was assessed using the Rosenberg Self-Esteem Scale (Rosenberg, 1965). This is a 10-item scale with a 4-point Likert answer scale ranging from 1 (*strongly disagree*) to 4 (*strongly agree*; e.g., "I feel that I have a number of good qualities"). The Cronbach's alpha and McDonald's omega showed good reliability (see Table 1).

Self-efficacy was assessed using the General Self-Efficacy Scale (Schwarzer & Jerusalem, 1995). This is a 10-item scale, which was answered via a 4-point Likert answer scale ranging from 1 (*disagree*) to 4 (*agree*; e.g., "I can usually handle whatever comes my way"). The Cronbach's alpha and McDonald's omega showed good reliability (see Table 1).

Self-determination was assessed via Deci and Ryan's (2010) self-determination theory. An 18-item scale with a 4-point Likert answer scale ranging from 1 (*disagree*) to 4 (*agree*) was used to assess the three basic needs dimensions: autonomy (e.g., "I did what

truly interested me"), competence (e.g., "I took on big challenges, and I succeeded"), and relatedness (e.g., "Some classmates did not like me, or they excluded me"). The Cronbach's alpha and McDonald's omega showed acceptable reliability (see Table 1).

Table 1

Cronbach's Alphas and McDonald's Omegas

Measure	Sample	n	Cronbach's α	McDonald's ω
Minority students' heritage culture maintenance	Full	325	.84	.84
	Migration background	240	.85	.85
	Non-migration background	85	.81	.81
Minority students' dominant culture adoption	Full	306	.91	.91
	Migration background	226	.92	.92
	Non-migration background	80	.89	.89
Majority students' acquisition of cultural knowledge	Full	320	.92	.92
	Migration background	239	.92	.92
	Non-migration background	81	.92	.92
Schools' endorsement of intercultural contact	Full	335	.92	.92
	Migration background	247	.85	.85
	Non-migration background	88	.93	.93
Teacher Support	Full	341	.87	.87
	Migration background	255	.87	.87
	Non-migration background	86	.87	.87
Self-esteem	Full	308	.82	.80
	Migration background	225	.82	.80
	Non-migration background	83	.82	.83
Self-efficacy	Full	299	.88	.88
	Migration background	223	.88	.88
	Non-migration background	76	.87	.87
Self-determination	Full	303	.78	.73
	Migration background	228	.76	.71
	Non-migration background	75	.82	.79

Gender was assessed with students reporting their gender as either girl (n = 167), boy (n = 190), or other (n = 0). For the data analysis, the dummy variables male = 1 and female/other = 0 were used, according to theories on dominant masculinities (Connell, 1998).

Nationality was assessed with students reporting whether they possess the Swiss nationality, and whether they possess further nationalities while asking them to declare which ones they possess. Following students' answers, they were categorized as possessing the

Swiss nationality no matter whether they possess any other nationality (n = 201), as possessing a nationality or nationalities of a geographically European country no matter whether they possess any other nationality from outside geographical Europe (n = 120), or as possessing a nationality from a country outside geographical Europe (n = 41).

Generation was assessed with students reporting their and their parents' places of birth. The students who were born outside of Switzerland (n = 65) were considered first generation. "Second generation" referred to students whose parents were both born abroad (n = 103), "Generation 2.5" referred to students with one parent who was born abroad (n = 64), and the third generation are defined as the majority and relates to students who including both their parents have been born in Switzerland (n = 132).

Migration background was assessed with students reporting their nationalities and their and their parents' places of birth. If a student had one or various non-Swiss nationalities and/or they and/or one or both of their parents were born abroad, then they were considered to have a migration background (n = 272); otherwise, if a student had only the Swiss nationality and they as well as both of their parents were born in Switzerland, they were considered to not have a migration background (n = 92).

Analytical Strategy

The first research question, namely whether there are group differences in attitudes toward mutual acculturation, was assessed through univariate ANOVAs, which test whether the mean value of a specific variable differs between various independent groups. Based on the interactive acculturation model (Bourhis et al., 1997), the four acculturation dimensions were assessed from the majority and minority perspectives as they might vary in their importance across groups. To differentiate between the majority and minority groups while controlling for gender, three concepts were employed: nationality, generational status, and migration background.

The second research question, namely how each of the four acculturation dimensions relates to school adjustment, was assessed with hierarchical multiple regressions. Regressions assess the association of the values of the dependent variable and the predictor variable with a linear function. Multiple regressions allow the introduction of various predictors in the same model. Thus, through multiple regressions, the associations of the four acculturation dimensions and each school adjustment variable (teacher support, self-esteem, self-efficacy, and self-determination) were assessed. In addition to the four acculturation dimensions, sociodemographic variables such as gender, age, and first-generation status were introduced as controls. The stepwise (hierarchical) introduction of these predictors tested two models. In the first model, control variables such as gender, age, and first-generation status were introduced, and their predictive strengths toward each of the four school adjustment variables were assessed. In the second model, the control variables and the four acculturation dimensions were introduced, and their associations toward each of the four school adjustment variables was assessed. In comparing the models, missing data were excluded pairwise.

Results

Descriptive Statistics

Table 2 reports descriptive statistics (means and standard deviations) for the full sample as well as for subsamples based on three grouping variables: migration background, nationality, and generation.

Table 2

Descriptive Statistics (Means and Standard Deviations)

Variable	Sample	n	M	SD
Minority students' heritage culture maintenance	Full	356	3.42	.60
	Migration background	264	3.45	.60
	Non-migration background	92	3.33	.58
	Swiss nationality	189	3.38	.58
	Europe nationality	119	3.46	.60
	World nationality	41	3.52	.61
	1st generation	63	3.33	.68
	2nd generation	103	3.59	.50
	2.5 generation	63	3.44	.60
	3rd generation/majority	127	3.32	.60
Minority students' dominant culture adoption	Full	343	2.48	.86
	Migration background	256	2.47	.90
	Non-migration background	87	2.49	.74
	Swiss nationality	189	2.44	.84
	Europe nationality	113	2.46	.87
	World nationality	40	2.68	.95
	1st generation	62	2.59	.75
	2nd generation	96	2.41	.96
	2.5 generation	63	2.43	.98
	3rd generation/majority	122	2.49	.77
Majority students' acquisition of cultural knowledge	Full	346	2.96	.78
	Migration background	258	2.98	.79
	Non-migration background	88	2.92	.75
	Swiss nationality	192	2.93	.83
	Europe nationality	114	2.96	.71
	World nationality	38	3.19	.70
	1st generation	61	3.00	.71
	2nd generation	96	3.05	.73
	2.5 generation	63	2.87	.85
	3rd generation/majority	126	2.92	.81

Table 2 continued

Schools' endorsement of intercultural contact	Full	345	3.14	.75
	Migration background	257	3.13	.74
	Non-migration background	88	3.17	.78
	Swiss nationality	190	3.18	.78
	Europe nationality	112	3.06	.72
	World nationality	41	3.17	.71
	1st generation	61	3.12	.68
	2nd generation	97	3.14	.72
	2.5 generation	62	3.13	.81
	3rd generation/majority	125	3.15	.78
Teacher support	Full	353	3.30	.60
Self-esteem	Full	345	2.95	.54
Self-efficacy	Full	340	2.88	.53
Self-determination	Full	357	2.90	.45

Note. Each scale ranged from 1 (*disagree*) to 4 (*agree*), meaning that the higher the mean was, the more students agreed with the acculturation dimensions or the higher or better the students rated their school adjustment.

Table 3 presents correlations of the four acculturation dimensions, the four school adjustment measurements, and the sociodemographic variables for the full sample. No strong relationship ($r \geq .70$) was detected, thus avoiding any problems with multicollinearity. The four acculturation dimensions had various significant moderate and weak positive relationships: Migration background students' heritage culture maintenance, majority students' acquisition of cultural knowledge, and schools' endorsement of intercultural contact correlated positively and moderately with each other. Migration background students' dominant culture adoption, however, only correlated positively and weakly with cultural knowledge acquisition. Concerning the control variables, age correlated positively and weakly with dominant culture adoption and cultural knowledge acquisition. The four measurements of school adjustment correlated significantly and positively with each other: The strongest correlation was between self-esteem and self-determination ($r = .634$), whereas the weakest correlation was between teacher support and self-efficacy ($r = .203$).

Aim 1: Exploring Group Differences Within the Four Acculturation Dimensions

Group differences concerning the four acculturation dimensions were assessed through univariate analyzes of variance (ANOVAs) in SPSS (Version 27; see Table 4). ANOVAs assess the mean differences of various independent subsamples and were used to analyze migration background (migration background vs. non-migration background), nationality (Swiss, Europe, world), and generation (first, second, Generation 2.5, and third/majority) while controlling for gender. Significant mean differences were found in one ANOVA concerning the generation grouping variable and the first dimension, migration background students' heritage culture maintenance, $F(3, 351) = 4.48$, $p = .004$, $\eta^2 = .037$. Through a Bonferroni post hoc test, second generation students were found to agree stronger ($M = 3.59$) with migration background students maintaining their heritage culture than first generation ($M = 3.33$, $p = .040$) and third generation / majority students ($M = 3.32$, $p = .004$).

Table 3

Correlations

Variable	A	B	C	D	E	F	G	H	I	K	L	M
A) Minority students' heritage culture maintenance	1 (356)											
B) Minority students' dominant culture adoption	.004 (343)	1 (343)										
C) Majority students' acquisition of cultural knowledge	.453*** (343)	.202*** (339)	1 (346)									
D) Schools' endorsement of intercultural contact	.518*** (343)	.052 (338)	.583*** (340)	1 (345)								
E) Teacher support	.198*** (349)	.051 (338)	.191*** (340)	.230*** (341)	1 (353)							
F) Self-esteem	.219*** (342)	−.035 (332)	.079 (336)	.172** (337)	.363*** (345)	1 (345)						
G) Self-efficacy	.238*** (338)	.062 (329)	.245*** (332)	.194*** (333)	.203*** (340)	.501*** (337)	1 (340)					
H) Self-determination	.269*** (352)	−.093 (342)	.119* (344)	.210*** (343)	.371*** (350)	.634*** (342)	.416*** (337)	1 (357)				
I) Male	−.013 (356)	.068 (343)	−.045 (346)	.003 (345)	−.020 (353)	.142** (345)	.115* (340)	−.022 (357)	1 (364)			
K) Age	.077 (352)	.131* (340)	.127* (342)	.007 (341)	.083 (348)	.030 (340)	.152** (336)	.020 (353)	.021 (358)	1 (358)		
L) Migration background	.086 (356)	−.013 (343)	.032 (346)	−.023 (345)	−.029 (353)	−.014 (345)	.101 (340)	−.050 (357)	−.030 (364)	.171*** (358)	1 (364)	
M) First generation	−.070 (356)	.064 (343)	.022 (346)	−.011 (345)	−.101 (353)	−.199*** (345)	−.112* (340)	−.203*** (357)	.071 (364)	.233*** (358)	.261*** (364)	1 (364)

*p ≤ .05. **p ≤ .01. ***p ≤ .001.

Note. Male, migration background, and first generation are dummy coded with e.g., 1 = male and 0 = non-male.

No further mean differences were detected, either within the first dimension (migration background students' heritage culture maintenance) or concerning the other three dimensions (i.e., migration background students' dominant culture adoption, majority students' acquisition of cultural knowledge, and schools' endorsement of intercultural contact). Sensitivity analyses were run in G*Power (3.1.9.7) and found that ANOVAs with $n = 343 - 356$ participants across two groups with one covariate would be sensitive to effects with an effect size of $.19 - .20$ with 80% power (alpha = .05). Then, ANOVAs with $n = 342 - 349$ participants across three groups with one covariate would be sensitive to effects with an effect size of .21 with 80% power (alpha = .05). Finally, ANOVAs with $n = 343 - 356$ participants across four groups with one covariate would be sensitive to effects with an effect size of $.22 - .23$ with 80% power (alpha = .05). This means that the study could not reliably detect possible effects with an effect size smaller than $.19 - .23$.

Table 4

ANOVA Summary Table for Four Assessed Acculturation Dimensions and Various Migration-Related Sociodemographic Groups, Controlling for Gender

IV	Minority students' heritage culture maintenance F (df, e)	Effect Size	Minority students' dominant culture adoption F (df, e)	Effect Size	Majority students' acquisition of cultural knowledge F (df, e)	Effect Size	Schools' endorsement of intercultural contact F (df, e)	Effect Size
Nationality	1.27 (2, 351)	.007	1.25 (2, 338)	.007	1.83 (2, 340)	.011	.86 (2, 339)	.005
R^2		.007		.012		.012		.005
Generation	4.48** (3, 351)	.037	.53 (3, 338)	.005	.75 (3, 341)	.007	.02 (3, 340)	.000
R^2		.037		.009		.008		.000
Migration background	2.64 (1, 353)	.007	.05 (1, 340)	.000	.34 (1, 343)	.001	.19 (1, 342)	.001
R^2		.008		.005		.003		.001

Aim 2: Exploring Relationships of Each Acculturation Dimension and School Adjustment

By running hierarchical multiple regressions in SPSS Statistics (Version 27), I analyzed the relationships of the four acculturation dimensions and four measurements of school adjustment (see Table 5). Because school adjustment is embedded in the acculturation process, students' ratings of teacher support, self-efficacy, self-esteem, and self-determination were entered as dependent variables. In multiple regressions, the regression coefficient of an independent variable relates to the average change in the dependent variable, and all the other independent variables are controlled. In the first step, gender, age, and first-generation status were introduced to explore their association and the explained variance concerning teacher support, self-efficacy, self-esteem, and self-determination. In the second step, the four acculturation dimensions, namely attitudes toward migration background students' heritage culture maintenance and dominant culture adoption, majority students'

Table 5

Multiple Regressions Assessing the Relation Between Acculturation Dimensions and Adjustment: Two-Step Regressions Controlling for Gender, Age, and First-Generation Status

Dependent variable	Teacher support		Self-efficacy		Self-esteem		Self-determination	
	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2
Block of predictor	β	β	β	β	β	β	β	β
First block: sociodemographic variables								
Male	−.02	−.01	.12*	.13*	.15**	.16**	−.01	−.01
Age	.11*	.09	.19***	.15**	.08	.07	.07	.07
First-generation status	−.13*	−.12*	−.16**	−.15**	−.23***	−.21***	−.22***	−.20***
Second block: acculturation								
Minority students' heritage culture maintenance		.08		.13*		.17**		.20***
Minority students' dominant culture adoption		.03		.01		−.04		−.09
Majority students' acquisition of cultural knowledge		.05		.15*		−.06		−.03
Schools' endorsement of intercultural contact		.16*	.	.03		.12		.13
R^2	.02	.08	.06	.13	.07	.12	.05	.13
ΔR^2		.06		.07		.05		.08

*$p \le .05$. **$p \le .01$. ***$p \le .001$.

acquisition of cultural knowledge, and schools' endorsement of intercultural contact, were introduced to the model. Missing data were excluded pairwise. The first model was not significant, $F(3, 334) = 2.56$, $p = .055$ for teacher support, however it was significant for the other three variables: self-efficacy, $F(3, 325) = 6.98$, $p < .001$, self-esteem, $F(3, 328) = 8.13$, $p < .001$, and self-determination, $F(3, 334) = 5.40$, $p = .001$, explaining 5–7% of the variance. Age was found to have a significant positive relationship with self-efficacy, meaning the older students were, the better they rated their self-efficacy. Gender was found to have a significant positive relationship with self-efficacy and self-esteem, meaning that boys rated their self-efficacy and self-esteem higher than girls. First-generation status was found to have a significant negative relationship with self-efficacy, self-esteem, and self-determination, meaning that first-generation students rated their self-efficacy, self-esteem, and self-determination lower than non-first-generation students. Given the similar associations found for the sociodemographic variables in the first and the second step, the introduction of the four acculturation dimensions into the model did not interfere much with their association with the adjustment variables.

The second model introduced the four acculturation dimensions and was significant for teacher support, $F(7, 330) = 4.25$, $p < .001$, self-efficacy, $F(7, 321) = 6.88$, $p < .001$, self-esteem, $F(7, 324) = 6.26$, $p < .001$, self-determination, $F(7, 330) = 6.82$, $p < .001$, and explained an additional 5–8% of the variance. Concerning the four acculturation dimensions, migration background students' heritage culture maintenance was found to have a significant positive relationship with self-efficacy, self-esteem, and self-determination. This means that the more students agreed with migration background students' heritage culture maintenance, the higher they rated their self-efficacy, self-esteem, and self-determination. Then, majority students' acquisition of cultural knowledge was found to have a significant positive relationship with self-efficacy. This means that the higher the students agreed with majority students' acquisition of cultural knowledge, the higher they rated their self-efficacy. Finally, the dimension of schools' endorsement of intercultural contact was found to have a significant positive relationship with teacher support. This means that the more students agreed that schools should enable intercultural contact, the better they rated their teachers' support.

Discussion

The aim of this study was to expand the validation of a four-dimensional assessment of attitudes toward mutual acculturation in the Swiss school context (Sidler et al., 2021) in two ways: first, to assess group differences concerning each dimension, and second, to explore the relationship of each dimension with four factors of school adjustment, namely teacher support, self-esteem, self-efficacy, and self-determination.

Are There Group Differences Within the Four Acculturation Dimensions?

Migration related group differences in relation to the four acculturation dimensions were explored through univariate ANOVAs. This followed the interactive acculturation model (Bourhis et al., 1997) and the structure of the four-dimensional assessment of attitudes

toward minority and majority acculturation. As migrant students or students with migration backgrounds are diverse concerning their generational status, residence status, and countries of origin (Nauck & Genoni, 2019), three grouping variables were considered: migration background (a combination of the students' nationality and place of birth as well as their parents' place of birth), nationality, and migrant generation.

The only significant mean difference was found for the first dimension, migration background students' heritage culture maintenance: Second generation students rated this dimension as more important than first generation students and third generation/majority students. This is surprising, as minority group members were expected to rate the first dimension as more important than majority group members. However, this could relate to first-generation students legitimizing and reproducing exclusionary and/or assimilationist practices imposed on them through integration policies (Duemmler, 2015), resulting in their feeling that heritage culture maintenance is not welcome or important. Second-generation students, however, may escape such integration policies yet still experience diverse cultural backgrounds at home and at school (Göbel & Buchwald, 2017; Makarova, 2008). The actual mean difference between second generation, first generation, and third generation/majority students, however, was small: all groups agreed that heritage culture maintenance was important, just to a slightly different degree. The more interesting finding is that no further group differences were found. Neither based on their migration background nor based on their nationalities did students differ in relation to the four dimensions. Moreover, there were no differences found concerning students' generation status in relation to their attitudes toward majority acculturation (majority students' acquisition of cultural knowledge and schools' endorsement of intercultural contact) as well as toward migration background students dominant culture adoption. This means that overall, different attitudes toward mutual acculturation are not explained by minority and majority group membership.

What Are the Relationships of Each Acculturation Dimension and School Adjustment?

The associations between each acculturation dimension and each measurement of school adjustment were explored through multiple regressions. Significant positive associations were found for 3 of the 4 dimensions: First, positive attitudes toward the heritage culture maintenance of migration background students had positive associations with self-efficacy, self-esteem, and self-determination. Second, positive attitudes toward majority students' acquisition of cultural knowledge had a positive association with self-efficacy. Third, positive attitudes toward schools' endorsement of intercultural contact had a positive association with teacher support. No significant association was found between attitudes toward migration background students' dominant culture adoption and school adjustment. This was surprising, because in previous research, only attitudes toward minority acculturation have been related to school adjustment (Makarova & Birman, 2015, 2016; Schachner et al., 2017), meaning that associations were expected for at least the two minority dimensions. One reason for this could be that the association of each dimension and school adjustment was assessed instead of combining the dimensions as Berry et al. (1989) and Bourhis et al.

(1997) proposed. Additionally, the dominant culture adoption dimension only correlated weakly with majority students' acquisition of cultural knowledge, whereas the other three dimensions showed medium correlations with each other. Thus, whereas adolescents found migration background students' heritage culture maintenance, majority students' acquisition of cultural knowledge, and schools' endorsement of intercultural contact to be rather important, the migration background students' dominant culture adoption dimension fell off. This was surprising and it is not clear, whether this comes from not considering dominant culture adoption important, not wanting to adopt (concerning minority students), or not wanting minority students to adopt (concerning majority students). The latter would relate to findings on Swiss youth reproducing exclusion following the "Swiss–foreigner divide" in Swiss schools (Duemmler, 2015). Nevertheless, the positive correlations of three out of four mutual acculturation dimensions to the four concepts of school adjustment strengthens concurrent validity of the measurement.

Limitations and Future Directions

It is important to stress that with cross-sectional data, no insights into the directionality of the relationship result. Whereas significant positive correlations between attitudes toward mutual acculturation and school adjustment strengthen construct validity, longitudinal research is needed to understand its interaction better. Thus, further research should study (a) the development of attitudes toward mutual acculturation and their (b) association with school adjustment longitudinally to better understand what supports students' school adjustment no matter their migration background.

Conclusion

In this study, the validation of a four-dimensional assessment of attitudes toward mutual acculturation in the Swiss school context (Sidler et al., 2021) was extended in two ways. First, group differences concerning each acculturation dimension were assessed and were found only for the migration background students' heritage culture maintenance dimension: Although on average, minority and majority students consider heritage culture maintenance important, it is of higher importance to second generation students. Second, significant relationships of each acculturation dimension except for the migration background students' dominant culture adoption dimension and school adjustment were found, which strengthens the concurrent validity of the assessment. The more important students rated migration background students' heritage culture maintenance, majority students' acquisition of cultural knowledge, and schools' endorsement of intercultural contact, the better was their school adjustment. To conclude, this study confirmed concurrent validity of the four dimensions and showed their equal importance for minority as well as majority students and therefore demonstrates the importance of a mutual acculturation framework for students no matter their migration background.

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