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YOUTH AT RISK IN HIGHER LEVELS OF UPPER SECONDARY EDUCATION: A SUPPORTIVE INTERVENTION TO PREVENT SCHOOL FAILURE AND DROP OUT

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ABSTRACT

This study addresses the question of how learners whose parents have a migration background can be supported in upper secondary education to prevent their dropping out of education. To that end, we conducted interventions in an upper secondary education setting in order to improve school grades, subject-specific self-conceptions of ability in mathematics and German, motivation to study, and perceived self-efficacy and we evaluated the effects on learner achievements. We applied a two-phase process: a more virtual approach during restrictions imposed during COVID-19 and a more face-to-face approach in which learners were tutored by teachers. The intervention showed an improvement in grades in German and in the self-conception of ability in mathematics. However, this was only established during the face-to-face intervention phase. During the COVID-19 phase, and thus when there was no possibility of standardized intervention, no specific effects were observed.

KEYWORDS

upper secondary education; intervention; dropout risk; migration; performance; subject-specific ability self-concept

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Introduction

At the upper secondary level, unevenly distributed participation in education is related to more than language barriers. It is co-determined by the socio-structural characteristics of origin (Düggeli et al., 2015; Maaz et al., 2008; Scharf et al., 2020; SKBF, 2018; Verhoeven, 2011). These characteristics can create educational obstacles for learners, as has been particularly well-documented in crossover research (see, for example, Becker et al., 2013). Even if young adults succeed in entering higher qualifying training, the problems have often not been overcome. In most cases, the problems continue to exist in the challenge not to immediately drop out of the training after successfully starting it. The stress of the training situation for these learners is often only relieved if they have a degree certificate that opens access to a working life and thus creates a good starting point for their further professional biographical development (Hupka-Brunner & Meyer, 2021; OECD, 2022a).

1 Problem setting and questions

In order for national education systems to be informed about the extent to which younger generations can integrate into society by acquiring occupational certifications, many countries report figures on participation and graduation rates at this level at regular intervals. For example, according to the OECD (2022b), the average participation rate in Europe in 2019 was 84% (15- to 19-year-olds). The rate is 80% in Germany and around 88% in Switzerland. The number of graduations in the same age group is slightly lower: the OECD average is about 80%, in Germany it is about 73%, and in Switzerland about 84%. These figures may vary depending on the age group studied. For example, in Switzerland, some apprentices have not yet completed their education at 19; when considering all learners who have completed upper secondary education by the age of 25, the rate in Switzerland is about 90% (FSO, 2021). Thus, at least in Switzerland, a large number of young adults seem to be able to achieve a degree in upper secondary education by the age of 25. Including gender and family characteristics in the analyses, a heterogeneous picture emerges, especially with regard to higher-level qualifications (ISCED 35) (UNESCO Institute for Statistics, & Eurostat, 2012). For men, the overall graduation rate for higher-level qualifications is 34%; for women, the rate is around 44% (Gaillard & Babel, 2018). It is also apparent that learners born in Switzerland to Swiss parents achieve a 20% higher graduation rate from higher education courses than learners whose parents are not Swiss, regardless of whether the latter were born in Switzerland (Gaillard & Babel, 2018).

Such inequality distributions are not new, and they have long been discussed in relation to questions of justice theory (Blossfeld, 2013; Dumont & Ready, 2020; Heinrich, 2010). The basic premise of modern education systems with a Western influence has been critically questioned. It has been explicitly stated that no one in Switzerland should be hindered or excluded from participation in education on the basis of their characteristics of origin. Violations of this assured right to participate centrally affect the educational biographical developments of adolescents. However, misadministration also affects the economic system, which relies on young people who are as well-educated as possible. Both the individual and the socio-economic areas concern fundamental issues of common and fair participation in civil society. These hold together, as social pillars, the collective togetherness (Putnam, 2015; Sassen, 2014). If damage can be identified in these areas – that is, if inequalities are found that can be identified as injustices – compensatory measures are necessary for those who have been disadvantaged (Becker & Schoch, 2018; Esser & Seuring, 2020). Moreover, these measures must be maintained until the causes of these injustices are eliminated. This paper is a first step in this regard. The focus is on the conceptualization and implementation of corrective regulatory support for learners whose training risks are increased. This support must be effective during transitions and throughout the entire training period at the relevant levels of education.

This study concerns support throughout the training period. The focus is on young people with a parental migration background who have completed higher-qualifying education at the upper secondary level. However, if their grades at this level of education are not sufficient, or if their self-conception of their abilities is unstable and their perceived self-efficacy at school and motivation to work are weak, the probability that they will be able to complete their education decreases. To counter this situation, an intervention was carried out in a higher-qualifying training course in Switzerland. The aim was to support committed and motivated learners so that they could complete the training. The initial question of this study begins at this point. The question is: To what extent does support-oriented intervention succeed in positively influencing the development of learners' grades, self-conception of subject-specific skills, general perceived self-efficacy at school, and motivation to work?

2 The intervention

The intervention proposed to achieve the objectives was open to learners with a parental migration background. The learners had to be committed and willing to attend an additional weekly learning session. The intervention was located at a business school in Switzerland. This is a higher-qualifying full-time upper secondary level vocational school that prepares learners for a qualified vocational qualification. At the same time, this training gives them the option of attaining the Federal Vocational Baccalaureate. The intervention is presented below in conformity with its structural framework. The embedded contents are discussed. Finally, the characteristics to which the intervention was directed are reported. An attempt is made on the basis of these steps to represent the intervention effect.

2.1 Structural Phase I

The first phase of the intervention lasted from January 2020 to December 2020, a period understandably referred to as the COVID-19 setting. The COVID-19 setting was characterized by distance teaching and distance learning. Formally, meetings during this phase can be described as ad-hoc online meetings. We refrained from imposing an obligation to participate. Nevertheless, attempts were made to meet with the young people regularly electronically, largely through individual exchanges (see Figure 1).

2.2 Structural Phase II

During the second phase, which lasted from the beginning of 2021 until the end of June 2021, the structural teaching conditions normalized; this phase can thus be referred to as a "normal setting" in terms of the intervention. It was possible to work with the learners as planned, weekly and face-to-face. Participants were expected to participate regularly in person (see Figure 1).

2.3 Content Phase I (January 2020 to December 2020)

During the first phase, an attempt was made to actively approach the learners in the intervention group and to respond to their difficulties and questions arising from the situation. Looking back, the focus was not only on school learning problems but, in some cases, also on questions about the challenges of shaping life in general. These questions could be explained more and more in terms of the learner's connection to their home. Attempts were also made to advance the adolescents in their learning, differentiated by questions about their learning organization. Particular care was taken to clearly see the progress they had made and to attribute the causes to their own abilities wherever possible. In general, the content of the first phase was not very systematic. However, this phase is discussed here, because it allows at least

the development of a sense of how the features discussed here changed under the condition of highly dynamic school realities (see Figure 1).

2.4 Content Phase II (January 2021 to June 2021)

At the beginning of 2021, the teaching situation changed again to a more structured level. At that time, it became possible to implement the systematically organized intervention units as planned. It was possible to work with the intervention participants, as planned, for three hours a week. Teachers in German, mathematics, English, economics, and law were available to them. Thus, those subjects that are particularly lucrative in the training plan were prioritized. Work was focused on problems that students brought with them. Basically, the intervention was designed as a learning setting in which the learners largely self-directedly advanced their tasks on the basis of unresolved questions and upcoming content-related problems or deficiencies. This usually included the areas of task aids and upcoming tests. Stabilizing the self-assessment of various abilities was also an important part of the intervention. This was attempted by identifying strengths during individual support that were then made visible by the supporting teachers as learning successes. Work organization issues were also addressed, and learners were supported in this regard. The learners were thus given individually supervised learning time as well as the opportunity to design the time available to them together

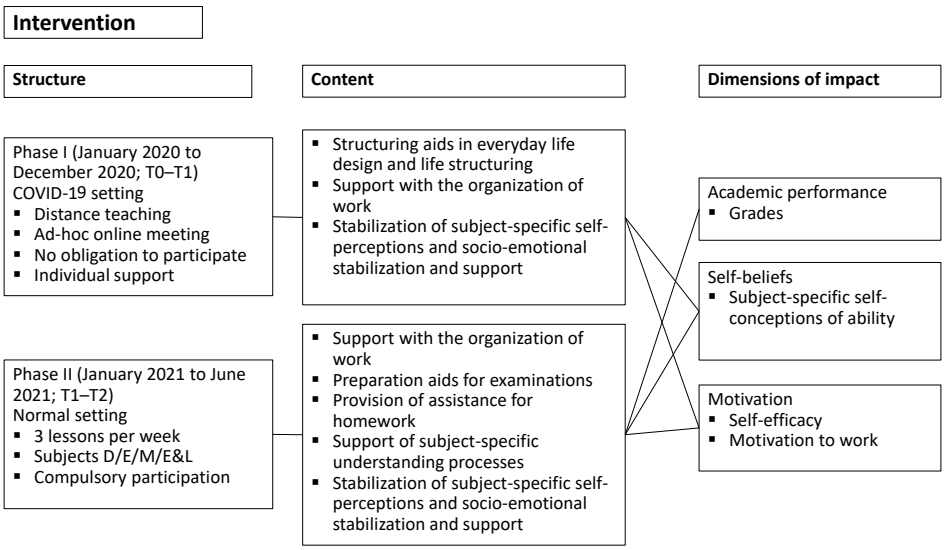

Figure 1
Basic model of the intervention; structural construction, content-related design, and impact areas

with the others. During the intervention units, learning groups formed in which socially oriented self-regulation and co-regulation took place. This also made aspects of social-emotional learning visible (see also Dueggeli et al., 2021) (see Figure 1).

2.5 Dimensions of impact

Based on the structural and content-related frameworks and on the background of the intervention objectives, three impact dimensions were examined: first, the grades in the subjects of German and mathematics; second, the learner's subject-specific self-concept of their own ability in these subjects; and, third, two motivational aspects of learning: general perceived self-efficacy at school and the motivation to work. With respect to the grades, the intervention focused on the area that centrally decided on whether to stay in training. They were therefore the focus of the intervention as a performative criterion. Cognitive and motivational processes are linked to grades (see OECD, 2016) and are promoted in an interventional manner here as target dimensions and recorded as dimensions of impact.

3 Hypotheses, design, instruments, and sample

The initial question is differentiated in relation to the two intervention phases into the following hypotheses:

- Hypothesis: Intervention Phase I: The grades in the subjects of German and mathematics, as well as the associated subject-differentiated self-conception of abilities, the perceived self-efficacy at school, and the motivation to work change to the same extent in the intervention group as in the reference groups[1].
- Hypothesis: Intervention Phase II: The grades in German and mathematics in the intervention group increase more strongly than in the reference groups. The self-conception of ability in mathematics and German increases more in the intervention group than in either reference group. Perceived self-efficacy at school and motivation to work also increase in the intervention group as compared to the two reference groups.

[1] Note: No substantive work was possible (due to COVID) during this phase of intervention. The corresponding variables could not be systematically worked on, so no effects are expected. Specifically, H0 cannot be rejected.

3.1 Design

As the reported basic model shows, the first phase of intervention work started at the end of February 2020. It preceded the T0 measurement in January 2020. The time span between the T0 measurement and the start of the intervention was used to identify those young people for whom the intervention was designed. Young people could be admitted to the program only if their parents had a migration status. By default, the intervention was designed for a weekly work unit of 3 hours (see the section Intervention). In addition to process-accompanying qualitative evaluation formats, which were carried out monthly with the learners and once per term with the teachers, six-month quantitative impact tests took place in a quasi-experimental intervention control group design with four repetitions of the measurements. The first three measuring dates have been fully evaluated and are included in the present study (T0 January 2020; T1 January 2021; T2 June 2021).

3.2 Sample

The intervention was carried out with students from the 2019–2022 cohort at an upper secondary-level business school. This school-based organized vocational training leads either to a certificate of professional competence or to a vocational qualification. It thus enables a higher-qualifying grade at the upper secondary level (ISCED 35). Learners were offered the intervention based on possible parental migration status. Regular participation and personal commitment were required. This condition was met by 14 young people, who formed the intervention group. Two reference groups were also formed. The first (reference group I) comprised 26 young people. They could have joined the intervention group because of their parental migration status, but they decided not to participate. The second reference group (reference group II) consisted of 13 learners. Their parents had no migration status. They were therefore not eligible for intervention (see Table 1). The average age was comparable in all groups: 17.64 years (intervention group), 17.12 years (reference group I) and 17.31 years (reference group II). In the intervention group, 7 participants (50%) were male and 7 (50%) were female. In reference group I, 16 learners (61.5%) were male and 10 (38.5%) were female. In reference group II, 9 learners were male (69.2%) and 4 (30.8%) were female. After selecting the learners, it was recorded whether the learners spoke German at home. In the intervention group, 4 adolescents (28.6%) spoke German and 10 adolescents (71.4%) did not. In reference group I, 12 young people (46.2%) spoke German at home and 14 (53.8%) did not. In reference group II, whose parents had no migration status and who were therefore not eligible for the intervention, 10 learners (76.9%) spoke German at home and 3 learners (23.1%) stated that they did not speak German

Table 1
Sample description

Group	N (53)	Age (years)		Gender				Migration status of parents (Selection criterion)				Language spoken at home			
				Male		Female		Yes		No		German (CH/D/A)		Non-German	
		M	SD	N	%	N	%	N	%	N	%	N	%	N	%
Intervention Group (With migration status of parents and regular participation)	14	17.64	1.08	7	50.0	7	50.0	14	100	0	0	4	28.6	10	71.4
Reference Group I (With migration status of parents, without intervention)	26	17.12	1.03	16	61.5	10	38.5	26	100	0	0	12	46.2	14	53.8
Reference Group II (Without migration status of parents, without intervention)	13	17.31	1.11	9	69.2	4	30.8	0	0	13	100	10	76.9	3	23.1

at home. The proportion of learners who speak German at home therefore sees an increasing trend from the intervention group to reference group I up to reference group II (see Table 1).

3.3 Instruments

The grades of the students in the subjects of German and mathematics were recorded. The subject-specific self-conceptions of ability in mathematics and German as well as motivation to work and general perceived self-efficacy at school were also gathered (see Table 2).

3.4 Evaluation methodology

To test the hypotheses, a Kruskal-Wallis test for independent samples and corresponding post-hoc comparisons with the change values (T0–T1 and T1–T2) were calculated. A non-parametric approach was chosen because the change values of some variables could not be assumed from normally distributed data (grades in mathematics/German; self-conceptions in mathematics/German). There were inhomogeneous group variants (grades in mathematics and self-efficacy), and no interval scaling of the values could be assumed (see grades in mathematics and German). In addition, due to the risk of distortions due to outliers in the change values and the rather small group sizes, the less pre-supposed procedure was chosen.

Table 2
Identified characteristics and operationalization

Instrument	**Example item**	**Source**
Self-conception of ability in mathematics	*I'm good at mathematics.*	Schwanzer et al. (2005)
Self-conception of ability in German	*I'm good at German.*	
General perceived self-efficacy at school	*I can solve difficult problems in class if I make an effort.*	Jerusalem and Satow (1999)
Motivation to work	*Most of the time, I have a lot to do.*	Kirschkamp (2008)
School grades in German		
School grades in mathematics		

4 Results

4.1 Intervention Phase 1 (T0–T1)

During the first intervention phase, the so-called COVID-19 phase, no significant differences between the groups were found in the values of the analyzed characteristics. However, the German and mathematics grades tended to show a slight decline in all three groups. The change in the characteristics of perceived self-efficacy or motivation to work was similar. Here, too, a descriptive decrease can be observed in all three groups. With regard to the subject-specific self-conceptions of ability in mathematics and German, it can be stated, again descriptively, that in the area of German, there was a slight increase in all three groups. In the area of mathematics, it was reduced in the intervention group, while the values in the two reference groups increased. However, these mean value differences cannot be statistically assured as group differences.

Looking at the intervention group specifically in comparison with the two reference groups, the following trends are shown, again descriptively: For grades, the values in the intervention group were reduced to a greater extent than in the two reference groups. In the self-conception of ability in German, the increase for the intervention group was greater than in the reference groups; in the self-conception of ability in mathematics, there was a slight decrease in the intervention group and a slight increase in the reference groups. In terms of motivation to work, the decrease in the value for the intervention group was somewhat less than in the two reference groups (see Table 3).

Table 3
Results T0–T1

	Mean rankings of change T0–T1			df	H	p
	IG N=14	RG I N=26	RG II N=13			
Grade in German	32.64	25.69	23.54	2	3.05	.218
Grade in mathematics	31.39	25.46	25.35	2	1.66	.435
Self-conception of ability in German	25.43	25.54	31.62	2	1.58	.45
Self-conception of ability in mathematics	32.61	24.52	25.92	2	2.68	.262
Perceived self-efficacy	20.57	27.29	33.35	2	4.65	.098
Motivation to work	22.36	29.67	26.65	2	2.06	.358

4.2 Intervention Phase 2 (T1–T2)

During the second intervention phase, there was a statistically significant change in the German grades and in the subject-specific self-conception of ability in mathematics (see Table 4). Downstream individual group comparisons show that both effects were due to the differences between the intervention group and reference group II (the group without intervention and without parental migration). This means, first, that a positive change in the German grades of young people from families with a migration background was offset by a decrease in the German grades in the group without intervention and without parental migration (see Table 4). Second, with regard to the subject-specific self-conception of ability in mathematics, the decreasing value for reference group II was faced with an increasing value among young people with a parental migration background (intervention group) (see Table 4). All other characteristics showed statistically insecure trends in change. The mathematics grades tended to decrease in the reference groups and increase in the intervention group. The self-conception of ability in German increased somewhat in the intervention group and in reference group II, while it decreased slightly in reference group I. Perceived self-efficacy tended to increase in all three groups. In terms of motivation to work, a decreasing trend can be seen in the intervention group and in reference group I. In reference group II, it rose somewhat during this phase (see Table 4).

Table 4
Results T1–T2

	Mean rankings of change T1–T2			df	H	p	Post-hoc (Bonferroni)		
	IG N=14	RG I N=26	RG II N=13				IG – RG I	IG – RG II	RG I – RG II
Grade in German	18.71	28.83	32.27	2	6.58	0.037		p=.049; r=.46 *d* =1.04	
Grade in mathematics	23.75	29.08	26.35	2	1.19	0.552			
Self-conception of ability in German	21.46	30.60	25.77	2	3.43	0.18			
Self-conception of ability in mathematics	18.64	26.79	36.42	2	9:17	0.01		p=.007; r=.58 *d*=1.42	
Perceived self-efficacy	31.07	27.48	21.65	2	2.57	0.277			
Motivation to work	28.71	27.37	24.42	2	0.56	0.576			

5 Discussion

The positive development of the German grade during the second intervention phase was a central result of this study. Learners whose parents had a migration background and whose language at home was less frequently German made greater progress than learners without a migration background who more often spoke German at home. This finding indicates an optimistic direction. With the effect in German, the positive change affected an area that is highly significant for general school development. If German grades improve for learners who, due to migration, are at increased risk of not completing their training, the basis for other subjects taught in the local language of instruction will also be stabilized. The second central finding is the positive change in the subject-specific self-conception of ability in mathematics. This change concerned the same two groups: it was again the learners of the intervention group who changed positively compared to the change in reference group II. The attempts to positively influence the development of grades and, in parallel to this, to stabilize young people in their self-assessment with regard to their ability in subjects, seem to have had a desirable effect here, at least to some extent. However, the analyses of the qualitative data of this study will show exactly how internal inter-relationships are to be understood. This will stabilize the basis somewhat in order to be able to further develop the structure and implementation of the intervention in a differentiating manner.

These two effects cannot hide the fact that the analyses leave central questions unanswered. For example, further thought should be given to how the effectiveness of the intervention could be broadened and thus extended to other characteristics. In addition, further analysis is needed to address the question of why the developments between the intervention group and reference group I are not more different. In concrete terms, this means trying to discuss the extent to which the proportion of young people who speak German at home may play a role here. This proportion was higher in reference group I than in the intervention group. In general, this could mean that the intervention had an effect primarily on the young people with a parental migration background who did not speak German at home.

The fact that the intervention also produced stronger effects during the second phase could indicate that supportive funding at the upper secondary level should be coupled with an obligation to participate regularly in face-to-face formats. If participatory and self-regulated forms of learning are to be sought, which must also be the responsibility of the learners themselves, a formal obligation to participate regularly seems to be a prerequisite for learning and training success. Without structuring framework requirements, learners have to create formal learning structures themselves. This is undoubtedly important. However, it takes away the time and attention they need for learning specific subject matter. We saw this clearly during the first phase of intervention, which was not very systematically structured. It was necessary to clarify questions about the structuring of the day in general with the young people before addressing the subject matter. Moreover, in light of the developments during the first phase of the project, this topic may need to be considered in general at the upper secondary level. In educational terms, the findings indicate that young people are empowered in their responsibility to regulate and shape their own learning in more open learning formats, which can include distance formats. In this context, the development of the self-conception of ability seems to be of particular importance.

However, all the findings reported here must not give the impression that this offer creates educational justice. As the study was implemented, its main concern was to ensure that the negative effects of educational inequality not become even more pronounced. However, the basic lever for mitigating this inequality cannot be exclusively compensatory individual support. It must start at the level of educational structure at the same time. The course must be set here so that structural risk factors for educational inequality can also be eliminated at the upper secondary level and beyond. That is not easy. And if it means taking specific counter-measures, especially with programs such as this one, then that is what must be done. It is necessary to structurally anchor new approaches to knowledge, as may emerge from the study presented here, in compulsory compensation channels. Perhaps this is not particularly

fair, as some have to give more time and commitment to their education at the upper secondary level because of their characteristics of origin than others without these risk factors. However, protecting individuals from a situation in which they are released into the labor market without a degree seems to be a primary objective, and one that does not prevent them from undertaking their professional development with as much freedom as possible. This is a professional biographical life-design justice that should be further developed situationally and prospectively, as well as structurally.

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