



AALBORG UNIVERSITY
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DELIVERY in Erasmus+ project Solution By Inclusion

INTELLECTUAL OUTPUT 1: Comparative baseline report
of dropouts

Delivered by project partner: CaBE, Aalborg University



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Solution By Inclusion



**DEPARTMENT OF
CULTURE AND LEARNING**

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1. BASELINE REPORT OF DROPOUTS

This report constitutes project partner CaBE's (from Aalborg University) delivery on **Intellectual Output 1 (IO1)** in the Erasmus+ project "Solution By Inclusion: Development of Digital, Innovative, Prevention & Intervention Solutions to Strengthen Social Inclusion, Well-Being, and Combat Early School Leaving in Vocational & Training (VET) and Second Chance Learning (SCL) Schools".

This report constitutes the third work package (**W.P.3.3**) of **IO1**. It contains the baseline results on students' dropout from all partnering VET and SCL schools. These partnering schools are GEM16+, Tradium, and IAL FVG, localised in Malta, Denmark, and Italy, respectively.

The data of this baseline report were collected at the partnering schools between 1 September and 31 December 2021. The data were collected with the standardised statistical tool for measuring and monitoring dropout, developed in collaboration between CaBE and the partnering schools in 2021. The dropout data were delivered to CaBE in January 2022 where they were subsequently analysed.

The main aim of this report is to identify general patterns on the causes of dropout (based on data on students who have been formally discharged¹) or, perhaps more precisely, the *reasons* for dropout as the schools were asked to reach out to the students and ask them for their reasons for dropping out from the VETs/SCL.

By collecting empirical data on the reasons for dropout, and by continuously monitoring the development in the dropout data, the VETs/SCL can build evaluation capacity and thereby identify critical developmental and organisational needs, which places them in a strengthened position to understand the underlying causes of dropout and thus formulate new strategies to reduce dropout.

In this baseline report, the first round of measurement is analysed (T1), specifically the data that were gathered in the aforementioned four-month period in 2021. New dropout data will be gathered between 1 September and 31 December in 2022 (T2), which will be analysed and compared to the baseline results in 2023.

Thus, this baseline report presents the foundation for examining whether the total dropout rate is reduced between T1 and T2. It displays identified patterns in the dropout data on each of the schools, including differences and similarities across the schools as well as the dropout rate of each school. The overall project aims at reducing the dropout rate by 20%.

¹ When a student is discharged, he/she is no longer enrolled at the particular educational programme. Thus, students who are currently in the *process of dropping out* (i.e. not formally discharged) are not included in the statistical analysis.

In the following section, the main method is described, including the data collection process, the general statistical approach, the categories used in the statistical tool, and the variables included in the analysis. Furthermore, specific limitations of the available data and the dropout analysis are reflected upon.

2. METHOD

2.1. DATA COLLECTION

In the period between 1 September and 31 December 2021, statistical data on students' dropout were gathered by the three partnering VETs/SCL: GEM16+, Tradium, and IAL FVG. To enable the comparative analysis of dropout patterns across schools, a standardised statistical tool was employed, which was developed in collaboration between CaBE and the partnering schools as part of **IO1** in 2021.

When utilising this statistical tool, the schools could select/register one main reason of discharge among 13 categories. The schools contacted each student who were formally discharged in this period to collect information on why the individual student had dropped out of the educational programme.

The 13 available categories in the applied statistical tool are:

- Business internship
- Exam flunked
- Expelled
- Not ready to be educated
- Personal issues
- Academic level too high
- Unable to thrive socially
- Health concerns
- Regretted educational choice
- Relocation
- Not able to establish contact/reason unknown
- Education to be completed elsewhere
- Application was withdrawn/never stated

As evident from the 13 available categories above, the statistical tool provides the opportunity to formally distinguish between the terms 'dropout' and 'early school leaving' to some extent. For instance, the categories 'Relocation' and 'Education to be completed elsewhere' suggest that the formal discharge has not led to early school leaving as the former student has been enrolled in further education or training.

According to the European Commission (2019) dropout refers to leaving a particular school before graduation while ‘early school leaving’ particularly refers to “[...] people aged 18–24 who obtained no more than a lower secondary diploma and are not enrolled in further education or training” (p. 51).

In the statistical analysis, it is therefore considered whether certain categories indicate dropout or early school leaving.

2.2. VARIABLES

The dataset contained information on students ($N = 86$) from all partnering schools. It was analysed in relation to the six variables listed below:

- Cause of discharge (nominal, categorical)
- Absence (in %; quantitative/continuous)
- Partnering VETs/SCL (nominal, categorical)
- Gender (binary, categorical)
- Ethnicity (nominal, categorical)
- Age (quantitative/discrete)

Depending on the type of analysis, the above variables were applied either as independent (predictor) or dependent (outcome) variables.

2.3. DESCRIPTIVE STATISTICS

Descriptive analysis was performed to identify patterns in the data and to break it down into simpler and more understandable forms. Mostly, bivariate analyses² were performed using different combinations of the aforementioned six variables.

Only a few hypotheses tests (i.e. significance tests) were conducted to determine whether the identified patterns were random or systematic. Due to the limited size of the dataset, which translates into less statistical power, no correlations or statistically significant associations/differences were possible to identify. Thus, the results of the following analysis are descriptive and not predictive.

The statistical analyses were conducted in IBM SPSS (vers. 27), and data visualisations were made in Excel (Microsoft 365).

² Bivariate analysis involves the analysis of two variables (often denoted as X and Y) with the purpose of determining the empirical relationship between them.

3. ANALYSIS

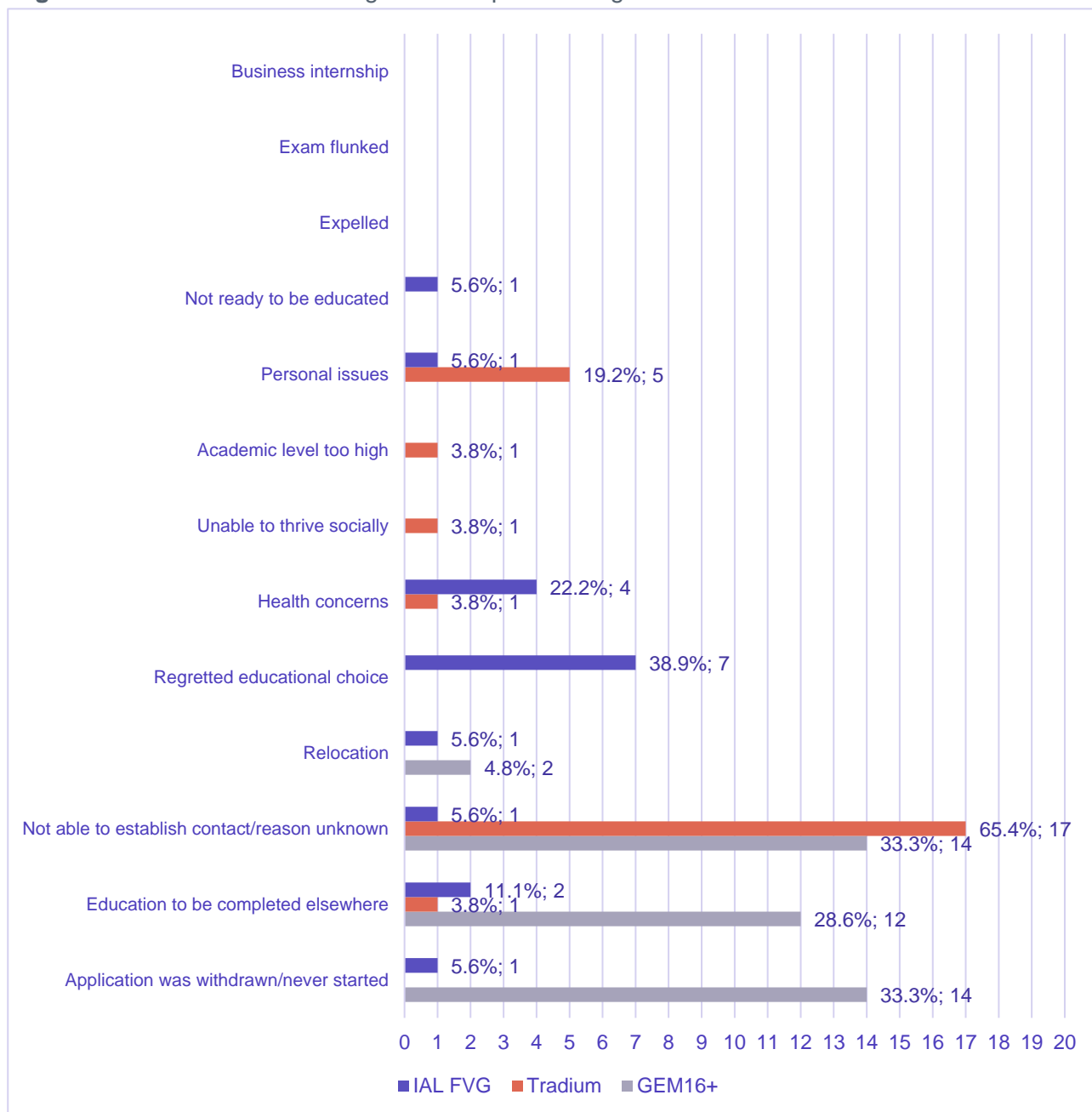
In the following subsections, the main results are presented and interpreted.

First, the students' main reasons for dropping out are highlighted for each partnering school. Second, the dropout rate for each school is calculated. Third, it is examined what characterises students who dropped out in term of ethnicity, gender, and age. Finally, it is examined whether gender is associated with school absenteeism.

3.1. COMMON CAUSES OF DISCHARGE

Using the standardised statistical tool at the three partnering schools, the following results emerged in 13 different categories.

Figure 1. Cause of discharge at the partnering VET/SCL schools



$N = 86$. Tradium, $n = 26$; GEM16+, $n = 42$; IAL FVG, $n = 18$. Both percentages and counts are shown for each VET/SCL school. Empty categories are included to enhance transparency.

As Figure 1 shows, the registered causes across the three VETs/SCL mostly follow unique patterns, although they do share a few similarities.

At IAL FVG the top three causes were 1) ‘Regretted educational choice’ (38.9%), 2) ‘Health concerns’ (22.2%), and ‘Education to be completed elsewhere’ (11.1%). Max one registration (5.6%) was made in each of the remaining categories.

At Tradium the top two causes were 1) 'Not able to establish contact/reason unknown' (65.4%) and 2) 'Personal issues' (19.2%) while there was max one registration (3.8%) in each of the remaining categories.

At GEM16+ the top cause was a tie between 1) 'Not able to establish contact/reason unknown' (33.3%) and 2) 'Application was withdrawn/never started' (33.3%) while the second most frequent cause was 'Education to be completed elsewhere' (28.6%). Moreover, GEM16+ had two relocations (4.8%).

First, it can be noted that three categories were left unused, which could be because all registrations were made in autumn 2021. Thus, no students dropped out because they flunked exams, were expelled, or because they completed a business internship (which could be because these activities in general take place at different periods during the academic year). Secondly, the schools were often unable to establish contact with discharged students, especially at Tradium and GEM16+. Therefore, the causes of discharge remain unknown in these cases.

Notably, a relatively high percentage of students who dropped out from IAL FVG had regretted their educational choice. This suggests that more effort should be directed into counselling potential students on their educational choices to meet their expectations and ambitions. Moreover, it might help if educators were more aware of communicating with the students regarding these issues during the school year to prevent additional dropouts. However, it must be emphasised that the number of registered dropouts (18) from IAL FVG was relatively low, which makes generalisations and identification of common problems challenging.

Moreover, it can be highlighted that one third of the students who dropped out from GEM16+ had decided to withdraw their application before study start. No students withdrew their application at Tradium during the registration period. IAL FVG had a single student (5.6%) who withdrew his/her application.

The identified patterns reflect differences in the reasons for dropout reported by each student. However, it is also likely that varying registration practices among the partnering schools have influenced the results to some extent, which is why comparisons among the schools should be made with care (see 'Limitations').

3.2. DROPOUT RATES

In this section, the total dropout rate is calculated for each partnering school by subtracting the number of dropout cases during the standard registration period from the number of students enrolled by 1 September 2021.

Table 1. Dropouts at the partnering VET/SCL schools

	GEM16+	Tradium	IAL FVG
Registered dropouts	42	17(26) ^a	18
Enrolled by 1 September 2021	138	845	1631
Dropout rate	30.4%	2.1%	1.1%

Note. The registration period was open from 1 September to 31 December 2021. ^a Out of 26 dropouts at Tradium, 9 were registered in August 2021, which is why these registrations were not included in the calculation of the total dropout rate of the registration period.

As Table 1 shows, 86 dropouts were registered in total. Of these, 75 were included in the calculation of the dropout rates (9 cases from Tradium were dropped). The dropout rate was calculated by dividing the registered number of dropouts with the total number of students (multiplied with 100) enrolled by 1 September 2021. Thus, the dropout rate was calculated for the same period across all partnering schools.

Of the three schools, it is evident that most dropouts were registered at GEM16+, even though they had fewer students (138) enrolled by 1 September 2021. In total, 30% of the students at GEM16+ dropped out during the four-month standardised registration period. As emphasised, about one third of these students withdrew their application and thus never started. GEM16+ gathered data between 1 September and 31 December 2021 while the academic year commenced later on 4 October 2021 (UnivMeta, 2022). Based on previous dropout statistics from the partnering schools, the dropout rate at GEM16+ approximately halved from 31.5% in 2015 to 15.6% in 2019 (Krogstrup et al., 2021; see Figure 2, p. 15).

At Tradium, a total of 26 dropouts were registered of 845 students. Of these, 17 were deemed valid in calculating the dropout rate at 2.1%. Based on these numbers, a 20% reduction in the dropout rate, as targeted, should be attainable by T2 in 2022. Based on the previous dropout statistics, an average of 18.7% students dropped out annually from Tradium between 2015 and 2019 (Krogstrup et al., 2021). Therefore, the number of cases registered in autumn 2021 is surprisingly low. It is possible that more dropouts generally occur in spring or just before summer, which could explain this lower dropout rate. Therefore, it must be kept in mind that the analysed data were not gathered for a full academic year.

At IAL FVG, 18 dropouts were registered out of a total of 1631 students. This equates to a low dropout rate of just 1.1%. At IAL FVG, the average rate of dropouts has increased from 16.7% in 2015 to 20.5% in 2019 (Krogstrup et al., 2021). Therefore, the dropout rate seems low at IAL FVG compared to existing statistics provided by the school. Thus, reaching the goal of reducing the dropout rate of 20% should be achievable during the same time span in 2022.

Curiously, a low dropout rate occurred at both Tradium and IAL FVG. It is likely that more dropouts generally occur in the spring and early summer: Among other things because this period is longer (from 1 January to 31 June). Moreover, most exams are often conducted before summer, which may place additional pressure and lead to extra dropouts closer to exams. As evident from the registration tool, no students dropped out because of flunked exams in the autumn and early winter of 2021.

3.3. BACKGROUND VARIABLES AND DROPOUT

In statistical analyses it is common to include demographic variables to provide knowledge on the structure and characteristics of various populations (Frey, 2018).

In the following sections, it is therefore examined what characteristics students who drop out possess in relation to these chosen background/demographic variables: ethnicity, gender, and age.

ETHNICITY AND DROPOUT

In the publication “Education and Training Monitor 2019” by the European Commission, 2019, p. 53), statistical analyses of early school leaving are divided by gender and ethnicity (native born versus foreign born), and their analyses showed statistically significant relationships between these groups, which is why ethnicity was included as an independent variable in the registration tool.

Thus, the available data provide descriptive statistics on the number of dropouts in the following three categories: ‘Native born’, ‘Foreign born in the EU’ and ‘Foreign born outside of EU’.

Table 2. Dropouts by ethnicity

	GEM16+	Tradium	IAL FVG
Native born	57.1% (24)	100% (26)	77.8% (14)
Foreign born in EU	11.9% (5)	0% (0)	11.1% (2)
Foreign born outside of EU	31.0% (13)	0% (0)	11.1% (2)
Total	100% (42)	100% (26)	100% (16)

Note. $N = 86$. Both percentages and counts (in brackets) are shown for each VET/SCL school.

Table 2 shows that most discharged students from each school were ‘Native born’. ‘Foreign born outside of EU’ had the second highest count in total.

At GEM16+, the majority of the discharged students were native born (57.1%) while the remaining were either foreign born in EU (11.9%) or outside of EU (31.0%). At Tradium, all discharged students were native born (100%). At IAL FVG most

students who dropped out were native born (77.8%) while an equal percentage of dropouts were either foreign born in EU (11.1%) or outside of EU (11.1%).

According to the analysed data, most dropouts were native born. However, this most likely reflects that the majority of students are native born. Therefore, to accurately determine whether ethnicity is significantly associated with dropout, the dropout rate in each ethnic group must be compared to the number of students in each ethnic group on the partnering schools.

GENDER AND DROPOUT

According to existing research, males are generally considered more at risk of dropout and early school leaving (Borgna & Struffolino, 2017; Eurostat, 2021).

Based on the available data, it was not possible to confirm or reject this hypothesis in relation to the three partnering VETs/SCL. On the contrary, slightly more females (59.3%) than males (40.7%) were discharged from the three schools in total.

Table 3. Dropout by gender

	GEM16+	Tradium	IAL FVG
Male	45.2% (19)	42.3% (11)	27.8% (5)
Female	54.8% (23)	57.7% (15)	72.2% (13)
Total	100% (42)	100% (26)	100% (18)

Note. $N = 86$. Both percentages and counts (in brackets) are shown for each VET/SCL school.

Table 3 shows that slightly more females than males were discharged during the registration period from all schools.

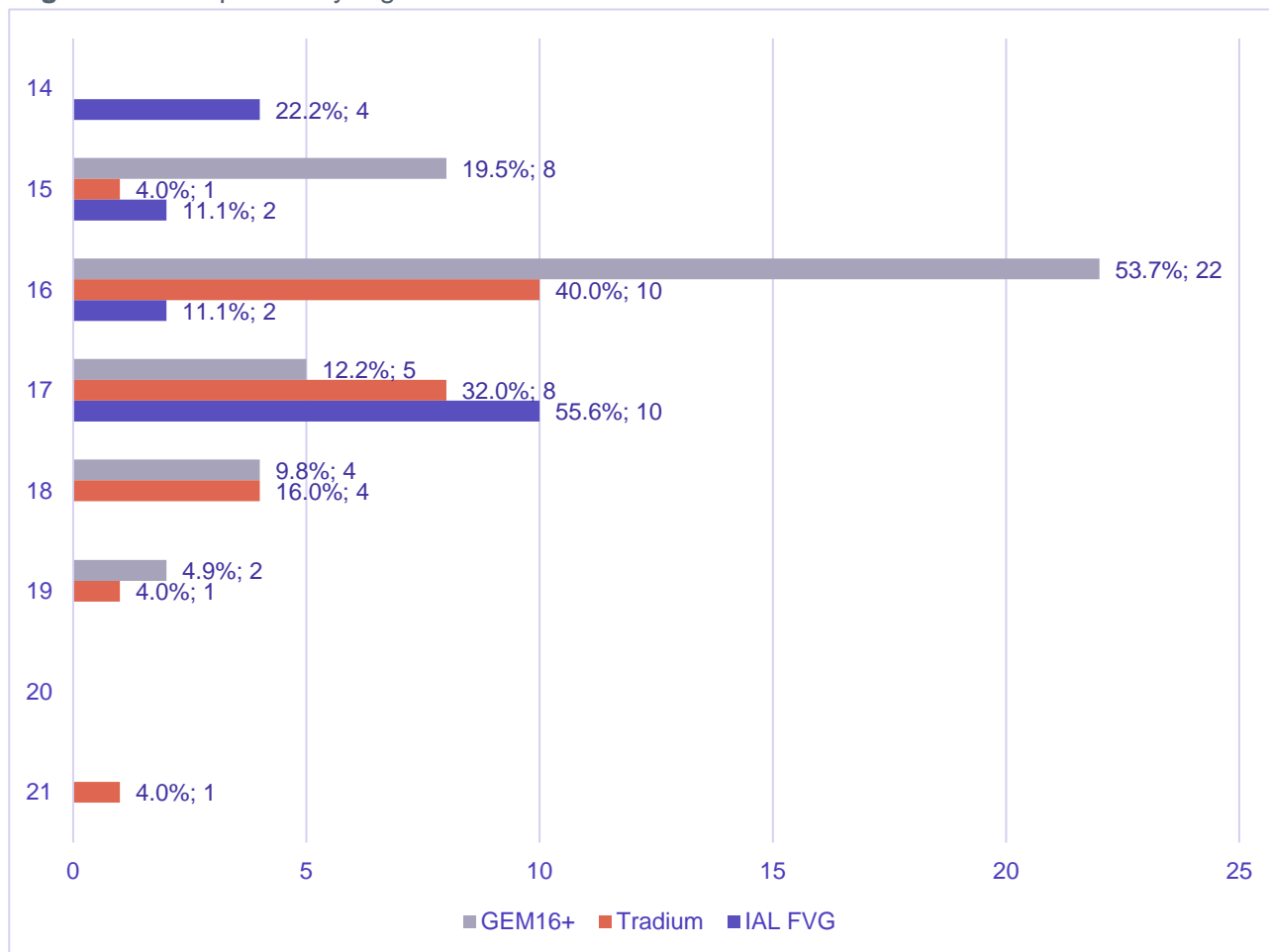
At GEM16+, more than half (54.8%) of the students who dropped out were female while slightly less (45.2%) were male. At Tradium, more than half were female (57.7%) while about 4 out of 10 (42.3%) were male. This difference was even more pronounced at IAL FVG where almost three quarters (72.2%) were female while slightly more than one quarter (27.8%) were male. Evidently, most students who dropped out across the three partnering schools were female.

However, these percentages should not be regarded as nationally representative, nor should they be regarded as representative or predictive for each school. More data are needed to determine whether these patterns are generalisable as the amount of random variance is larger in small samples (Field, 2018).

AGE AND DROPOUT

In relation to age and dropout, the patterns were slightly different when comparing the partnering schools. This, among other things, reflects differences in the educational programmes, including the average age of students, which is why both total counts and percentages are displayed for the three partnering schools.

Figure 2. Dropouts by age



Note. $N = 84$. GEM16+, $n = 41$; Tradium, $n = 25$; IAL FVG, $n = 18$. Both percentages and counts are shown for each VET/SCL school. Two cases \geq age 30 were excluded.

As shown in Figure 2, most dropouts occurred at age 16 on both Tradium (40%) and GEM16+ (53.7%), respectively, 10 and 22 dropouts. At IAL FVG, most students (55.6%) dropped out at age 17 (10 dropouts in total). In total, the second highest number of total dropouts was registered for students aged 17. Among the 15-year-old students, 8 (19.5%) dropouts occurred at GEM16+. Only 1 (4%) dropout in this age group was registered at Tradium while 2 (11.1%) were registered at IAL FVG.

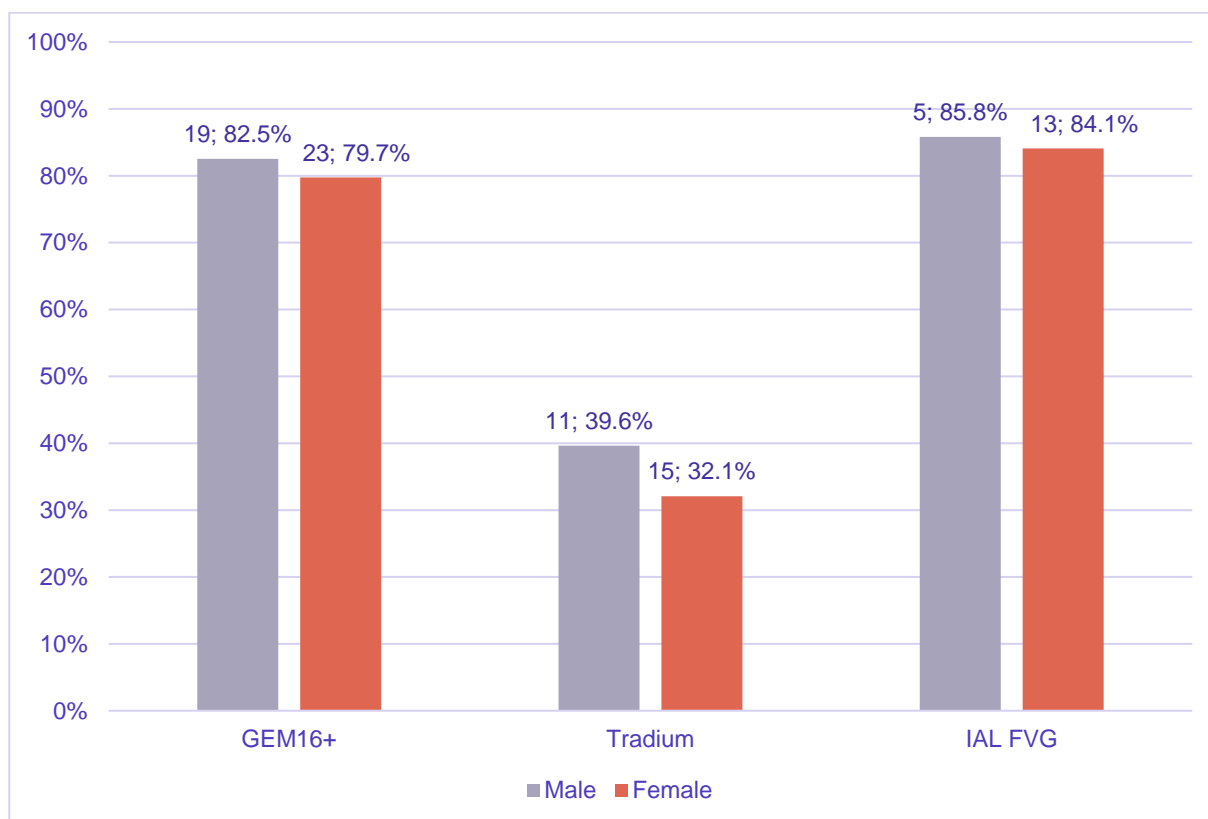
Although it is difficult to discern any clear pattern, the distribution of dropouts is apparently skewed toward the youngest age groups. The median age for dropout occurred at age 16 for GEM16+ and 17 for both Tradium and IAL FVG, indicating that most dropouts occur in the beginning of the educational programme.

If minors are defined as “all children below the age of 18”, which is commonly the case in civil codes according to the European Union Agency for Fundamental Rights (EUAFR, 2022), it is apparent from these data that most students who dropped out from the partnering schools can be considered minors, which indicates that more should be done to reduce the retention rate among minors specifically.

3.4. GENDER AND ABSENCE

In relation to gender and absence, it was examined whether any measurable difference in school absenteeism was present between males and females who dropped out from the partnering schools.

Figure 3. Absence by gender



Note. $N = 86$. Both percentages and counts are shown for each VET/SCL school.

Figure 3 shows that male students registered with the statistical tool had a higher level of absence on all partnering schools. At GEM16+, the average rate of absence

was slightly higher for males (82.5%) compared to females (79.7%). At Tradium, the difference was more pronounced with an average rate of absence of 39.6% for males and 32.1% for females. At IAL FVG, a similar tendency was present, but the difference was noticeably smaller between the groups as the average rate of absence was 85.8% for males and 84.1% for females.

Conducting significance tests (both ANOVA and an independent samples *t*-test) did not reveal any statistically significant relationship between gender and the average rate of absence. Hence, no statistical evidence was found that gender plays a significant role in absenteeism at the partnering schools. However, the average rate of absence was highest for males across all partnering schools in the sample.

Conducting significance tests on a small sample will usually not reveal small or even medium differences because of the lack of statistical power (Field, 2018). Thus, the risk of overlooking a statistically significant difference or correlation (i.e. a type II error) between groups or variables is considerably larger when analysing small datasets, which must be considered in relation to these results.

4. LIMITATIONS

4.1. CHALLENGES IN COMPARING RESULTS

The statistical tool was standardised to enable valid baseline comparisons between the partnering schools and across measurement points.

However, besides measuring actual variations in dropout causes and rates, the results may also partly reflect varying registration practices. As a consequence, comparisons between the partnering schools in relation to dropout causes, and especially in relation to dropout rates, should be made with caution.

As mentioned in the introduction, the data collection took place between 1 September and 31 December 2021. However, the registration periods of the partnering schools were not entirely identical in practice. At GEM16+ the school secretary kept record of attendance and gathered information on the reasons for discharge. However, their academic year commenced on 4 October 2021 (UnivMeta, 2022), more than one month after the initiation of the registration period. This may partly explain why GEM16+ registered more dropouts on students who withdrew their applications before starting. At IAL FVG, the data were gathered by five counsellors in the collection period. Their classes started ultimo September and terminated in mid-December before the Christmas holidays. At Tradium, the dropouts were registered between mid-August and 31 December 2021.

In addition, it is possible that interpretational variations may arise as some dropout cases are ambiguous and difficult to place in a single category, which introduces subjective elements of interpretation into the registration process. This may lead to higher unsystematic variance, which tends to diminish as more data are collected. Thus, a larger dataset is generally needed when working with self-report variables (with more measurement error) before generalisable patterns will emerge and before statistically significant variable relationships can be identified (Field, 2018).

Moreover, with 13 available categories to identify causes of discharge and a relatively low number of registered cases, it is challenging to discern meaningful patterns and interpret the percentages alone. However, continuous use of the statistical tool should provide meaningful patterns for each school and thus more knowledge on the reasons (and indirectly on the causes) of dropout, which may help the schools in building capacity to identify crucial organisational needs.

Despite these limitations, the data gathered with the standardised statistical tool point to specific issues that the schools could address to reduce the dropout rate in the future.

5. CONCLUSION

In this baseline report of student dropout, the following main conclusions were derived. First, no common causes of discharge across the partnering schools were identified although some minor similarities were noticed.

At GEM16+, the main causes of discharge were 'Application was withdrawn/never started' (33.3%), 'Not able to establish contact/reason unknown' (33.3%), and 'Education to be completed elsewhere' (28.6%). In addition, 4.8% of the dropouts from GEM16+ were relocated. This means that about two thirds (66.7%) of these students are most likely not early school leavers. The total dropout rate at GEM16+ was calculated to be 30.4%.

At Tradium, the most common causes of discharge were 'Not able to establish contact/reason unknown' (65.4%) and 'Personal issues' (19.2%). This indicates that Tradium could probably improve their registration practice to enable more precise identification of the causes of discharge. Moreover, it should be examined further, if possible, what personal issues entails. It is not possible to fully determine whether most of these former students have become early school leavers. The total dropout rate at Tradium was calculated to be 2.1%.

At IAL FVG, the most common causes of discharge were 'Regretted educational choice' (38.9%) and 'Health concerns' (22.2%). It is likely that most students in the first category have subsequently started on a new educational programme. More students who become early school leavers report suffering from general health

problems than those who decide to further their studies (Farrugia, 2019). The total dropout rate at IAL FVG was 1.1% based on the available data.

In relation to ethnicity and dropout, most students who dropped out were native born. However, this likely reflects that most students enrolled at the partnering schools are in fact native born. Thus, the results of this baseline report cannot provide evidence that being foreign born is associated with heightened risk of dropping out or becoming an early school leaver.

In relation to gender and absenteeism, it was found that the degree of absence was largest at IAL FVG and at GEM16+ at around 80–85%. At Tradium, the average degree of absence for dropout was closer to 30–40%. As explained in IO1 that was delivered on 1 September 2021 by CaBE (Krogstrup et al., 2021), this reflects variations in school policies in handling absenteeism.

At all partnering schools, males who dropped out had higher levels of absence than females who dropped out. In total, more females (59%) than males (41%) dropped out. This was somewhat surprising given that males generally are considered more at risk of early school leaving and also have a higher propensity to dropout compared to females in EU countries (Borgna & Struffolino, 2017; Eurostat, 2021).

Finally, most dropouts occurred at age 16 or 17, at an age where they can be considered minors (EUAFR, 2022), which is problematic if it leads to early school leaving. However, more data is needed to draw more accurate conclusions.

The results from the three partnering schools cannot be considered nationally representative nor predictive. It is anticipated that the next round of registrations between 1 September and 31 December 2022 will provide more clarity on the patterns of dropout. Due to the relatively low number of registered dropouts, generalisations based on the identified patterns should be made with caution.

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