

An Administrative Study of Dropout Rates in Vocational Education and Training (2020–2024)

Summary

The purpose of this study is to examine the extent and patterns of dropout from vocational education and training from the 2020–2021 school year through the start of the 2024–2025 school year, relying exclusively on administrative data sources, primarily data from the VET Career Tracking System (SZPR). The analysis not only measures the dropout rate but also identifies risk factors, critical classes, and regional and demographic differences, thereby laying the groundwork for effective policy interventions.

According to the study's findings, dropout rates show strong seasonality: the vast majority of dropouts are concentrated towards the end of the school year, with the average dropout rate at the end of the school year for the period under study standing at 7.4%. The most critical grades are Years 9, 11, and 12. The risk of dropping out is approximately twice as high in vocational schools as it is in technical schools. The dropout rate is consistently higher among those enrolled in adult education than among those in student status. Although the dropout rate for women is higher overall, this is the result of the so-called “composition effect”: the proportion of women is higher in the 15–20 age group, but among those over the age of 20, men are more likely to drop out in every age group. The strongest factor explaining dropout rates is the student's socioeconomic background: the dropout rate is exceptionally high amongst students from disadvantaged (HH) and multiply disadvantaged (HHH) backgrounds. At the regional level, dropout rates follow the country's economic regional structure, with the highest rates observed in Pest County, Northern Hungary, and the Northern Great Plain.

The study sets forth methodological recommendations aimed at more accurately defining data quality and study completion status, as well as linking the KRÉTA ESL module and the SZPR. In addition, at the policy level, it recommends developing a predictive model and allocating resources in a targeted manner to the groups and regions most at risk.

Methodological challenges in measuring dropout rates

The study draws a fundamental conceptual distinction between early school leaving (ESL) and dropout. While ESL is a static, statistical category (the proportion of young people aged 18–24 with no more than a primary education who are not in education or training, based on the Labour Force Survey), **dropout is a process-oriented approach. From a measurement perspective**, dropout rates can be analysed at the institutional, programme, or overall school level. This study examines **dropout from vocational education and training**, defined as follows: a student is considered to have dropped out if they **are not found in the Vocational Training Information System (SZIR) database** at the measurement point following the reference year (in subsequent school years). An exception to this rule applies to those who are transferred from the SZIR to the Public Education Information System (KIR) – they are also counted as dropouts. At the same time, a person **is not considered a dropout** if they switch training programmes or types of status within vocational training (e.g. from student to adult education), or who discontinues only one of their concurrent training programmes but remains active in the system through their other programme.



The **VET Career Tracking System (SZPR)** forms the methodological backbone of the analysis. The SZPR is an aggregated data linking framework created by linking various government data sources (including student data from the Vocational Training Information System), enabling the longitudinal tracking of individuals participating in vocational training over a nine-year period. The study covers the period from September 2020 to September 2024 and uses **thirteen observation points** (status at the beginning of the school year, mid-term, and end of the school year) to dynamically examine students' educational pathways.

The students' status was determined using a two-step logical algorithm:

1. **Initial status:** Checking whether a student appears in the database for the measurement point immediately following the given measurement point. Students who were not identified as being in their final year but were absent at the next measurement point were labelled as “dropouts.”
2. **Corrective action:** The initial “dropout” status was reviewed to determine whether the student reappeared in the system at later measurement points (even several years later). If so, the status has been changed to “active student”.

This methodology allowed us to distinguish between permanent dropouts and temporary interruptions.

Key trends and findings

Seasonal patterns and critical grades

The phenomenon of dropout rates shows strong seasonality. While the dropout rate is negligible at the observation points at the beginning of the school year (September/October) and mid-term (January), a significant spike can be observed at the end-of-school-year (April) points. The dropout rates at the end of the school year during the period under study fluctuated between 4.55% and 8.53%, averaging **7.4%**. The riskiest stages of a student's educational pathway are **Years 9, 11, and 12**. Once a student reaches Year 13, the likelihood of dropping out is very low.

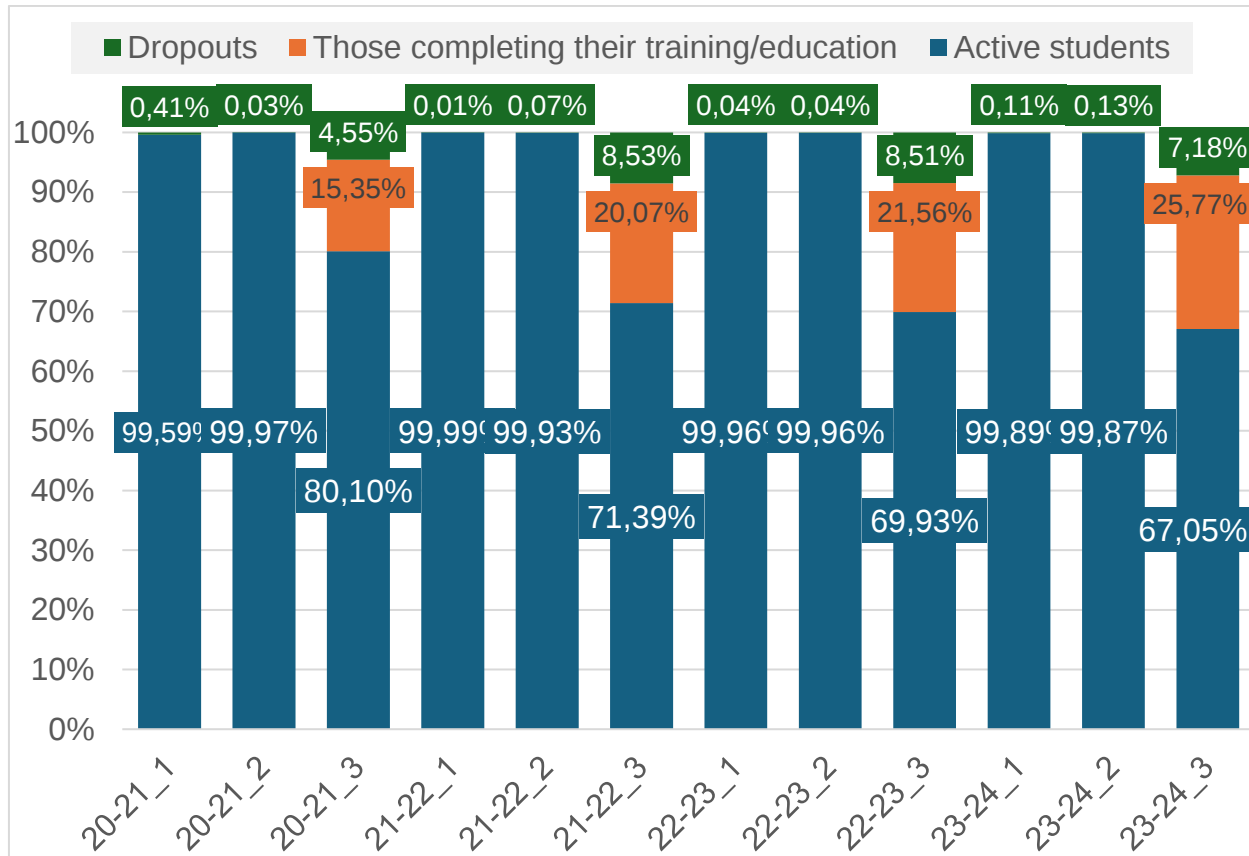


Diagram 1: Distribution of student statuses by observation points

Differences by type of institution and status

There are significant differences in the retention rates of different types of institutions. The dropout rate at the end of the school year **in vocational schools** (6.09% – 13.45%) is **approximately twice** that measured **at technical schools** (3.86% – 6.41%). The dropout rate is consistently higher among students **in adult education** (6.61% – 10.55% at the end of the school year) than among students **in student status** (4.26% – 8.71%). The latter is also linked to age, as the dropout rate for those over 25 rises steadily with age, particularly among those over 56 (over 30%), which may be a consequence of short-cycle training programmes and the pull effect of the labour market.

Gender differences and the composition effect

The aggregate data show that the dropout rate for women is consistently higher than that for men (by an average of 0.4 percentage points). However, a detailed breakdown by age adds nuance to this picture. The higher dropout rate among women is true only **for the most populous age group**, those aged **15–20**. In every age group over 20, **men** are more likely to drop out. This is what is known as the **composition effect**: the higher proportion of women in the dominant age group overrides the opposite trend observed in the other age groups.

The decisive role of socio-economic background

The data clearly identify the groups most at risk. While the dropout rate for the reference group (not disadvantaged (HH), not multiply disadvantaged (HHH), not having integration, learning and behavioural difficulties (BTMN), not having special educational needs (SNI)) hovered around 7–8%:

- Among **disadvantaged (HH)** students, this rate was **10.98% – 14.18%**.
- For students **with multiple disadvantages (HHH)**, the rate ranged **from 13.63% to 15.88%**. Among these students, dropout rates peak early in their education, as early as **Years 9–10**, in contrast to the reference group, where dropout rates typically peak in Year 11. The dropout rate for students with special educational needs (SNI) and those having integration, learning and behavioural difficulties (BTMN) did not differ significantly from that of the reference group.

Regional disparities

The regional pattern of dropout rates closely mirrors the differences in the country's level of economic development. The lowest dropout rates are found in the more developed regions of western and central Hungary (Győr-Moson-Sopron, Vas, Csongrád-Csanád, and Zala Counties). The highest rates are consistently found in economically less developed regions, such as **Pest County, Northern Hungary** (particularly Nógrád and Borsod-Abaúj-Zemplén Counties), **and the Northern Great Plain** (Jász-Nagykun-Szolnok County), where the rates often exceed 10%.

Recommendations in light of the findings

Based on the trends identified, the study also formulates recommendations at the methodological, institutional, and policy levels.

Methodological recommendations

- **Clarification of final-year student status:** Currently, determining results based on grade level may distort the results (especially in Year 12). It is recommended that an individual-level assessment of final-year status, based on multiple indicators (e.g. examination data), be introduced.
- Introduction of **standardised training identifiers (IDs)** to accurately track changes in training programmes.
- **Synergy between the KRÉTA ESL module and SZPR:** It is recommended that a technical link be established between the two systems, which would enable the daily preventive alert system (“red flags”) to be retrospectively validated against actual school leaving outcomes.
- **Building a predictive model:** It is recommended to develop a machine learning-based (e.g. Random Forest) binary classification model. The model would predict the likelihood of dropping out based on demographic (household, household type, gender, age), educational (grade, type of institution), and operational (absence data, decline in GPA as reported by KRÉTA) data, thereby enabling proactive, targeted interventions.



Recommendations at institutional level

- **In vocational schools**, special attention must be paid to increasing retention rates, as the risk of dropping out is twice as high there as in technical schools.
- Launching **targeted mentoring programmes** in the most critical grades (Years 9 and 11), specifically for students from disadvantaged and multiply disadvantaged backgrounds, starting in the early stages of their education.

Recommendations at policy level

- **Expanding data linking**: In addition to the SZPR, it is essential to strengthen the link with data from the Public Education Information System (KIR) so that transitions from vocational education to public education can also be tracked.
- **Targeted resource allocation**: Funding for prevention programmes (mentoring, scholarship top-ups) should be concentrated on the regions (Northern Hungary, Northern Great Plain, Pest County) and types of institutions (vocational schools) at highest risk.
- **Addressing the specific characteristics of adult education**: Due to the high dropout rate, it is necessary to review the methodology of adult education programmes, with particular attention to the needs of the older age group (those over 50) and to reducing the pull effect of the labour market by making training more flexible.