



Educational performance indicators

Measuring student achievement for
SAC-funded tertiary education organisations

Definitions and rules

Version 4 – June 2011

Document version history

Date	Version
November 2009	Feedback
March 2010	1
June 2010	2
July 2010	3
June 2011	4

Version control

Version	Date	Change
Feedback	Nov 2009	
1	March 2010	
2	June 2010	<ul style="list-style-type: none"> ▪ Clarified and aligned definition of denominator for course completion, qualification completion and participation. ▪ Added footnote for each indicator about open and closed approach to including data in the calculation. ▪ Specified the fields used to match course completions with course enrolments. ▪ Replaced the worked example for successful course completion to show more precisely how we get the EFTS figures. We use the EFTS consumed field from the SDR, which is derived from the EFTS_MTH field. We total the EFTs by month for each course's enrolments, and each course's successful completions. We then sum these to get the total EFTS consumed for the TEO's course enrolments and total successful completions; then divide the totals to get the TEO rate. Also clarified the worked example tables for qualification completion, progression, and the actual to expected qualification completion. ▪ Specified that prioritised matching for qualification completions should only occur within a given year, so that if enrolments for an imprecise match are used in one year, in the next year the same enrolments cannot be used for another precise match. (If they were, the earlier imprecise match would have to be thrown out and the indicator re-calculated). ▪ Added another figure (Figure 5) to show the use of imprecise matches. ▪ Added note to clarify that imprecise matches for qualification completions are permitted in the numerator for retention (previous version referred to section relating to imprecise matching). ▪ Changed where the check occurs when the course end date year is greater than the qualification completion year. We should do this after the matching of qualification completions to enrolments, not during it. ▪ Changed rule for choosing one qualification completion if there are several to choose from. Before we chose the one with the earliest qualification completion year. Now we choose the latest submitted qualification completion record. This is to allow provider updates to qualification completion records to be reflected. ▪ Added rules for analysing indicators by dimensions. ▪ Simplified the retention worked example to show calculation of just one TEO. ▪ Clarified the retention diagram showing multiple re-enrolments with multiple completions (at different levels). ▪ Added rules used when calculating retention and progression by register level. ▪ Added more selections for choosing which subsequent enrolment to choose if the same student progresses to more than one qualification.

Version	Date	Change
		<ul style="list-style-type: none"> ▪ Added NZSCED dimension, and 'NZSCED' to the acronym table in Appendix A. ▪ Added section on how we treat changes to existing data for dimensions (such as age, ethnicity, and register level). Previously we used the latest value available for all dimensions, meaning that latest values overwrote previous values. With the new data warehouse, only date of birth, gender, and NSN are overwritten with new values. Values for other dimensions are determined from the latest record for the year in question.
3	July 2010	<ul style="list-style-type: none"> ▪ Corrected reporting year = n+1 for retention. Clarified reporting year is year n+1 for progression.
4	June 2011	<p>Clarifications to content</p> <ul style="list-style-type: none"> ▪ Reflects external editor changes. ▪ Changed text referring to 2009 changes, and other places where text refers to forthcoming policy which has now been implemented. ▪ Noted that TEOs are now encouraged to submit course completions for Type B students (reflecting 2011 SDR Manual). ▪ Removed content on two indicators: expected qualification completion ratio and transition from school to tertiary indicator. These indicators are not currently being used. Modified Figure 1, removing these two indicators. ▪ Removed text in the overview chapter on key changes from the pre 2009 indicators to the indicators in use from 2010. This text is only relevant to version 1 of this document. ▪ Changed the order of the rules for clarity. For course completion, moved the rule regarding matching completions to enrolments so that it appears earlier, before excluding records. For retention and progression, moved rules regarding the denominator towards the start of the section, to clarify that the numerator is a subset of the denominator. (Did not move the matching rule for qualification completion since the discussion of precise and imprecise matches is clearer in current position.) ▪ Added row to all tables showing timeframe of availability of data necessary to calculate full year indicator, showing approximately when the data is finalised. ▪ Changed reporting year for student retention from n+1 to n, to align with the other indicators. Did the same to progression, so that the reporting year is always year n. ▪ Added Case 3 to Figure 3, where we show courses straddling 2 years and Case 3 starts in retention year but ends in the next year. ▪ Corrected the current Case 7 showing a long enrolment in the retention reporting year. The denominator will include the previous year's enrolment; the numerator will not count the reporting year enrolment. The previous text implied the indicator will not "count" the previous year's enrolment. ▪ Changed imprecise matching figure to clarify we only count one imprecise match, and no imprecise matches at all if there is a precise match. ▪ Removed incorrect Figure counting an imprecisely matched qualification completion when a precisely matched completion exists. ▪ Corrected progression figure for more than one new enrolment

Version	Date	Change
		<p>per qualification completed level.</p> <ul style="list-style-type: none"> ▪ Changed progression figures, replacing references to “re-enrolment” to “new enrolment”. ▪ Corrected worked example total progression rate. ▪ Copied rules from other help documents on TEC’s published data disaggregated by age and ethnicity. ▪ Removed “how [dimension] has changed” section from each dimension. ▪ Changed ‘National Qualifications Framework’ to ‘New Zealand Qualifications Framework.’ ▪ Added paragraph on the part-time rate in the relative workload dimension. ▪ Moved the content of the slowly changing dimensions section from the Dimensions chapter to Appendix B. Placed in context with other fields we are working on to align data warehouse with the rules of the indicators. ▪ Expanded number of items in the list of abbreviations in Appendix A, but removed the definitions column. ▪ In Appendix C describing how to calculate the indicators for a specific or for all funding sources, removed the incorrect condition for student retention where only Youth Guarantee-funded re-enrolments are included in the numerator. Retention for Youth Guarantee-funded students should include re-enrolments from any funding source as well as qualification completions that may not have any Youth Guarantee-funded enrolments. Only the baseline cohort from year n-1 should exclude non-Youth Guarantee-funded enrolments. ▪ Also in Appendix C, corrected the rules by adding a condition to the denominator where the baseline qualification completion has to have at least one Youth Guarantee-funded enrolment. Previously, the rules only concentrated on the numerator. ▪ Deleted superfluous list items from calculating the student progression indicator for a specific funding source in Appendix C. Only the selection priorities that should be modified for calculating progression for Youth Guarantee-funded students are shown. ▪ In Appendix B (describing how we process changes TEOs make to their data), clarified fields now called ‘point in time’ that take their values as at 31 December of the reporting year. Also, Appendix B documents specific fields that take their values from the latest SDR submission. <p>Changes to rules that affect the educational performance indicators</p> <ul style="list-style-type: none"> ▪ (Appendix B) If TEOs make changes to course funding source we now use the value from the latest enrolment record, rather than the first.

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Introduction

Purpose of this document

- 1 This document updates the business rules for the educational performance indicators used by the Tertiary Education Commission Te Amorangi Mātauranga Matua (TEC).

Role of educational performance indicators

- 2 Educational performance, for the purposes of this document, means activities tertiary education organisations (TEOs) undertake that contribute to the Government's vision for the tertiary education system: a system that 'equips all New Zealanders with the knowledge, skills and values to be successful citizens in the 21st century'.¹ This document defines the indicators the Government is using to measure educational performance from 2010.
- 3 The Government signalled through the Tertiary Education Strategy 2010–15 that it wants the performance of the tertiary education system to improve. The strategy links improvements in performance to course and qualification completion, and progression rates for all students.²
- 4 Consequently, the TEC's funding will be more linked to educational performance, and has published information on the educational performance of all Student Achievement Component (SAC)-funded TEOs. Making information such as completion and retention rates public will strengthen the accountability of TEOs and better inform students and employers when they are making choices about tertiary education.

Educational performance indicators applied from 2010

- 5 In 2009, we revised the definitions of four educational performance indicators to make them more useful in 2010 and beyond. Since 2010, the indicators to measure TEO educational performance are:
 - successful course completion
 - student retention
 - qualification completion, and
 - student progression.

¹ Minister for Tertiary Education. 2010. *Tertiary Education Strategy 2010–15*. Wellington: Ministry of Education, p 6.

² Minister for Tertiary Education. 2010. *Tertiary Education Strategy 2010–15*. Wellington: Ministry of Education, p 13.

Content of this document

- 6 This document details the definitions and rules for calculating the educational performance indicators. The basic definitions for the indicators were finalised in March 2010. However, the detailed business rules for calculating the indicators are subject to change. This document sets out the current business rules for calculating the indicators.
- 7 The overarching purpose of this document is to describe how the educational performance indicators are calculated. To aid this understanding, we have provided to TEOs educational performance data and indicator calculations from our integrated data warehouse ever since May 2010.
- 8 Version 1 of this document was released in March 2010. Versions 2 and 3, released later that year, clarified rules and corrected errors in response to feedback.
- 9 This version of the rules document, version 4, includes minor changes:
 - that reflect editorial clarifications or corrections;
 - based on feedback about previous versions and the performance information supplied to TEOs, and
 - to the business rules to reflect the availability of new information in the TEC's data warehouse, and how we manage changes TEOs make to their data.

The changes between versions are summarised in the version control panel at the front of this document.
- 10 Abbreviations used in this paper are listed in Appendix A.
- 11 Appendix B describes data processing modifications we have made when TEOs make changes to their historic (i.e., prior years') Single Data Return data.
- 12 Appendix C shows TEOs how to calculate educational performance indicator rates for a different funding source other than the Student Achievement Component.

Overview of educational performance indicators

Suite of educational performance indicators

- 13 The Government intends to link funding more closely to performance to drive improved performance in the tertiary education system. Over time, the measurement of performance, for funding and other purposes, will be based on a broad range of indicators of system performance (for example, employment outcomes as well as learning outcomes). For now, the Government requires the measurement and reporting of TEOs' educational performance, as measured by the achievement of their students.

Current educational performance indicators

- 14 The standard internationally recognised measures of student achievement are those relating to student retention, progression, and completion of courses and qualifications. In line with these standard measures, we have developed definitions (specifically 'formulae') for a core set of performance indicators that measure TEOs' educational performance through the progression, retention, and completion achievements of their students. The four indicators are as follows.
- Successful course completion is measured by the *EFTS-weighted successful course completion rate* (where EFTS means 'equivalent full-time student'³). This is the successfully completed enrolments in courses at a TEO each year, as a proportion of the total enrolments in courses, weighted by the EFTS value of the enrolments.
 - Student retention is measured by the *student completion (or continuation) rate*. This is the number of re-enrolments or qualification completions at a TEO each year compared with the number of students present at the TEO in the previous year.
 - Qualification completion is measured by the *EFTS-weighted qualification completion rate*. This is the number of qualifications completed at a TEO each year (weighted by the EFTS value of each qualification), as a proportion of the total enrolments in qualifications (weighted by the EFTS value of the enrolments).
 - Student progression is measured by the *completion progression rate*. This is a rate of re-enrolment in a higher-level qualification in the following year for students who have completed a qualification.

³ An EFTS is a unit for counting tertiary student numbers. The basis of the EFTS system is that a student taking a normal year's full-time study counts as 1.0 EFTS units or the equivalent of 120 credits on the New Zealand Qualifications Framework.

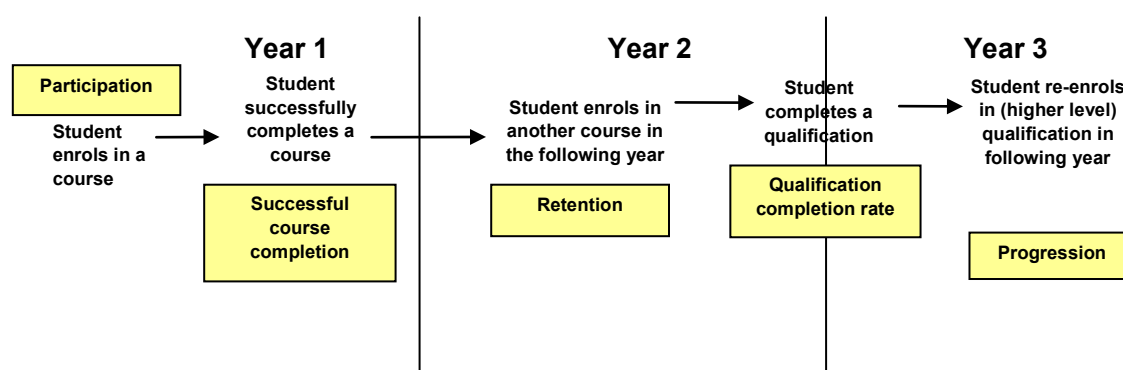
- 15 The definitions and rules for calculating *participation rates* are also included in this document, although they are not a measure of educational output performance. Participation indicators measure the proportion of students from different priority groups engaged in tertiary education.
- 16 The educational performance indicators will be analysed and reported in terms of 'dimensions' relevant to the Tertiary Education Strategy. Reporting by dimensions will help TEOs to develop their plan commitments and will feed into the TEC's accountability reporting processes. The dimensions include student demographics such as age and ethnicity (specifically, students aged under 25 and Māori and Pacific students) and programme dimensions such as the level of study and embedded literacy and numeracy. See paragraphs 78-101 for an overview of the dimensions.
- 17 We have removed two indicators from this version of the document:
- *actual to expected qualification completion ratio*, and
 - *transition from school to tertiary indicator*, which measures the uptake of school leavers into tertiary education.

The TEC is not currently using these indicators.

Tracking students' educational performance

- 18 The indicators track SAC-funded students' progress through the tertiary education system. Viewed together as a suite, the indicators provide an overall picture of a TEO's educational performance. Figure 1 shows a representation of how the indicators track students' achievement at a TEO.
- 19 Figure 1 has been simplified, so it does not show students who transfer from one qualification to another or students studying more than one qualification concurrently. However, these scenarios are included in the explanatory notes in this paper.

Figure 1: Representation of how educational performance indicators track students' achievement at a tertiary education organisation



Indicator development principles

- 20 The indicator definitions and rules detailed in this paper build on the TEC's work with the sector during the development of common indicator definitions in 2006/07. We have further simplified and improved the usefulness of the indicators in reflecting tertiary sector educational performance.
- 21 The suite of educational performance indicators can be used to measure performance for a variety of different purposes. In finalising the definitions and revising the business rules we have developed indicators that:
- provide information relevant to the allocation of funding
 - enable the demonstration of value for money
 - measure and demonstrate the range of performance across the tertiary education sector
 - use existing information and minimise compliance and administration costs
 - are meaningful to the public
 - can be, wherever possible, replicated within TEOs' information systems, and
 - are useful for TEOs' academic and management decision-making.

Data notes

- 22 The data used to calculate the educational performance indicators comes primarily from the SDR. Data is also extracted from the Qualification Register and, in determining student progression, will be extracted from the Industry Liaison Unit database (ILU) (for industry training data).
- 23 Data for enrolment events is taken from December SDRs or from the last SDR submitted for the year if the December SDR is missing.
- 24 Data for course and qualification completion events is taken from all SDRs available at the time of production, but only the latest submitted record will be used.
- 25 We use the April SDR for the final set of completion data for the previous year's enrolments.
- 26 Only records associated with formal qualifications are used. These are qualifications for which we expect to see a completion and are identified using the Qualification Award Category (QAC) code from the Qualification Register.
- 27 The definitions and rules for calculating each educational performance indicator and the data quality and data submission issues that TEOs need to consider are detailed in the following paragraphs.
- For the successful course completion indicator, see paragraphs 28–36.
 - For the student retention indicator, see paragraphs 37–46.
 - For the qualification completion indicator, see paragraphs 47–62.
 - For the student progression indicator, see paragraphs 63–71.
 - For the participation indicator, see paragraphs 72–77.

Successful course completion

What the successful course completion indicator reports

- 28 Successful course completions are measured by the EFTS-weighted successful course completion rate. This rate takes into account the workload of the course. We measure the workload factor using the unit 'EFTS delivered', which reflects the total student time necessary to complete the course.
- 29 The indicator is the sum of the EFTS delivered for successfully completed enrolments as a proportion of the EFTS delivered for the total course enrolments ending in a given year ('year n') (see Formula 1).

Formula 1: EFTS-weighted successful course completion rate

$$\frac{\text{EFTS delivered for the total number of successfully completed course enrolments ending in year n}}{\text{EFTS delivered for the total number of course enrolments ending in year n}}$$

- 30 See paragraph 34 for a worked example using Formula 1.

Rules for calculating the successful course completion indicator

- 31 The rules for calculating the successful course completion indicator are as follows.
- (1) Use the 'master' National Student Number (NSN), if the same student has multiple NSNs.
 - (2) Using the Course Completion file, match each course completion record with an enrolment by TEO code, NSN, course code, and course start date. Select the most recent completion record for the enrolment.⁴ If two or more completion records are in the latest SDR, prioritise those identified as being completed successfully (where the SDR COMPLETE field value is 2).
 - (3) **Exclude** the following matched records.
 - Duplicate records with an identical NSN, start date, course code, and TEO number. Keep only the last submitted enrolment in the course for the student.

⁴ Matching is done to ensure accuracy, because completion records are stored in their own data sets, separate from enrolment records, in the SDR. The matching process has to be done carefully, because the SDR is continuously updated and a single completion could have multiple enrolment records.

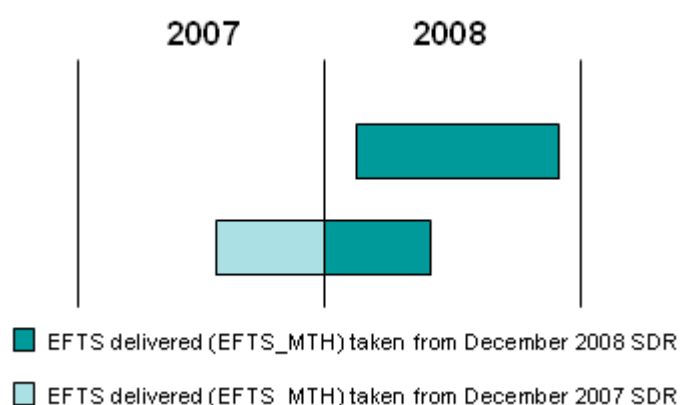
- Enrolments that have not received SAC funding.⁵
 - Records for courses in year n for which the TEC does not expect a course completion. These are denoted by QAC code values:
 - missing or blank
 - 90: Certificates of personal interest
 - 96: STAR
 - 97: Programmes of study taught under contract, and
 - 99: Adult and community education programmes of study at public TEIs.
 - Courses eligible for Performance-Based Research Fund (PBRF) funding (where the PBRF-Eligible field in the Course Register File is M, D, L, or C). Such courses are wholly research-based. Since the research may last longer than the course, such courses are likely to have high numbers of still-to-complete enrolments.
- (4) **Include** all course enrolments with a course end date in year n.⁶ For example, if the course end date is 27 August 2008, the enrolment is included in the year 2008 group even if the course start date is in 2007.
- (5) **To sum the EFTS delivered used in the formula, use** the EFTS_MTH field values of the SDR for *the entire enrolment* (from course start date to course end date), *even if the enrolment started in the previous calendar year.*⁷ For example, if the enrolment starts in 2007 but the course end date is in 2008, all EFTS_MTH values are summed from the start date (summing 2007 and 2008) for reporting the 2008 year. Figure 2 shows how the SDR is used to sum the EFTS delivered for a 2008 course record.

⁵ SAC-funded records are denoted by the code '01' of the FUNDING field of the Course Enrolment File. This indicator may also be calculated for other individual (or all) funding sources, by altering or removing this rule accordingly.

⁶ Where the CRS_END field (from the Course Enrolment File) year is equal to the reporting year.

⁷ The sum of EFTS_MTH does not necessarily equate to the EFTS factor of the course.

Figure 2: Data used when counting EFTS delivered (2008 example)



- (6) **Include** in the numerator only enrolments that have successfully completed the course (where the SDR COMPLETE field value is 2).
- (7) **Include** in the denominator all enrolments, including enrolments:
- not matched to a completion record
 - successfully completed (COMPLETE value 2)
 - still to complete (COMPLETE values 0, 1, 5, 6, or 7)⁸
 - completed unsuccessfully (COMPLETE value 3)
 - not completed (COMPLETE value 4), and
 - missing a COMPLETE record.
- 32 Enrolments in certificates of proficiency (QAC code value of 25 or 37) and enrolments in programmes of study made up of selected unit standards (QAC code value 98) are formal enrolments for which we would expect to see course completion records. These are **included**.

⁸ Still-to-complete records may still occur even after the course end date has been reached. These are often due to duplicate enrolment records being submitted, with, for example, different course start dates.

Data used to calculate the successful course completion indicator

33 Table 1 describes the availability of the data necessary to calculate the full-year successful course completion indicator.

Table 1: Availability of data used to calculate the full-year successful course completion indicator

Period of interest	Year	Example
Reporting year	year n	2008
Indicative data produced using data up to and including	December SDR year n	December 2008 SDR
Indicative data available	Early in year n+1	Early 2009
Final data produced using data up to and including	April SDR year n+1	April 2009 SDR
Final data available for TEO review	Mid year n+1	Mid-2009
Data finalised*	Approximately one month later	Mid-2009

Notes: Single Data Return (SDR) data can be uploaded using an open or closed basis. In the open basis, all available data is used to calculate or update the indicator. In the closed basis, only data available as at a specific date is used to update the indicator. The TEC default is the open basis. The TEC will advise TEOs of dates when it uses the closed basis.

* Data submitted in subsequent SDRs will not be included in indicator calculations for closed data.

Worked example

34 Table 2 shows a worked example calculating the EFTS-weighted successful course completion rate, using mock TEO data.

Table 2: Example – EFTS-weighted successful course completion rate

Calculation key:	a	b	b/a
Course	EFTS by month for enrolments	EFTS by month for successful course completions	EFTS-weighted successful course completion rate
COURSE1	5.601	4.233	
COURSE2	17.566	12.658	
COURSE3	56.010	32.984	
COURSE4	8.000	7.000	
Total for TEO	87.177	56.875	65.2%

<p>(b) EFTS delivered for the total number of successfully completed course enrolments ending in year n</p>
<p>Formula: $\frac{\text{(b) EFTS delivered for the total number of successfully completed course enrolments ending in year n}}{\text{(a) EFTS delivered for the total number of course enrolments ending in year n}}$</p>
<p>(a) EFTS delivered for the total number of course enrolments ending in year n</p>

Data quality issues affecting the indicator and implications for TEO data submission practices

- 35 Final figures will be based on information up to and including the April SDR. The following issues in the data submitted by the TEO at that time will affect the successful course completion rate.
- A high proportion of still-to-complete enrolments.
 - Changes in course start dates or course codes between returns leading to duplicate enrolments (where the NSN, TEO identifier code, *and* course code *or* course start date are identical).⁹
 - Missing completion records.
 - Missing or incorrect values in the PBRF-eligible field, if the course is eligible for PBRF funding.¹⁰
- 36 The successful course completion indicator includes levels 8–9 research-based courses that are not eligible for PBRF funding. Research-based courses are normally removed for this indicator using the PBRF-eligible field, so interpret the successful course completion rate for levels 8–9 qualifications with caution.

⁹ In some instances, particularly when the course spans two calendar years, two enrolment records have an identical NSN, TEO code, and course code, but different course start dates. This means the records have been altered between returns. Usually, one record has a completion, and the other is tagged as 'still to complete'. These closely matching records are probably duplicates, but are treated as valid enrolment records. When this occurs the number of still-to-complete records increases, which lowers the course completion rate.

¹⁰ TEOs that do not participate in the PBRF are permitted to flag appropriate research courses as PBRF eligible.

Student retention

What the student retention indicator reports

- 37 Student retention is measured by the student continuation or completion rate at a TEO.
- 38 The student continuation or completion rate is the proportion of individual students (not EFTS) enrolled in one year who either re-enrol in any course at the same TEO in the following year or successfully complete their qualification. The retention rate is calculated using Formula 2 below (where year n is the reporting year).

Formula 2: Student continuation or completion rate

$$\frac{\text{Students re-enrolled in year n or completed in year n or year n-1}}{\text{Students with some portion of an enrolment in year n-1}}$$

- 39 Note the numerator is a subset of the denominator. See paragraph 45 for a worked example using Formula 2.
- 40 This indicator replaces the first-year attrition indicator, which was complex to calculate and difficult for TEOs to replicate.

Rules for calculating student retention

- 41 The rules for calculating the student retention indicator are as follows.
- (1) Use the 'master' NSN, if the same student has multiple NSNs.
 - (2) Remove TEOs that do not have any enrolments in year n from the calculation. These TEOs no longer receive SAC funding or have closed down.
 - (3) **Rules for calculating the denominator**
 - (a) **Exclude** course enrolment records¹¹ for the following.
 - Duplicate enrolments with an identical NSN, start date, course code, and TEO number. Where duplicates exist, retain only the last submitted course enrolment with the highest qualification level for the student per year.
 - Enrolments that did not receive SAC funding.¹² However, non-SAC-funded re-enrolments are counted in the numerator in year n.

¹¹ Note that if course enrolment or qualification completion **records** are excluded for the student retention indicator, it does not necessarily mean the **student** is excluded from the calculation. That student may have other enrolments or other qualification completions that allow him or her to be counted as 'retained'.

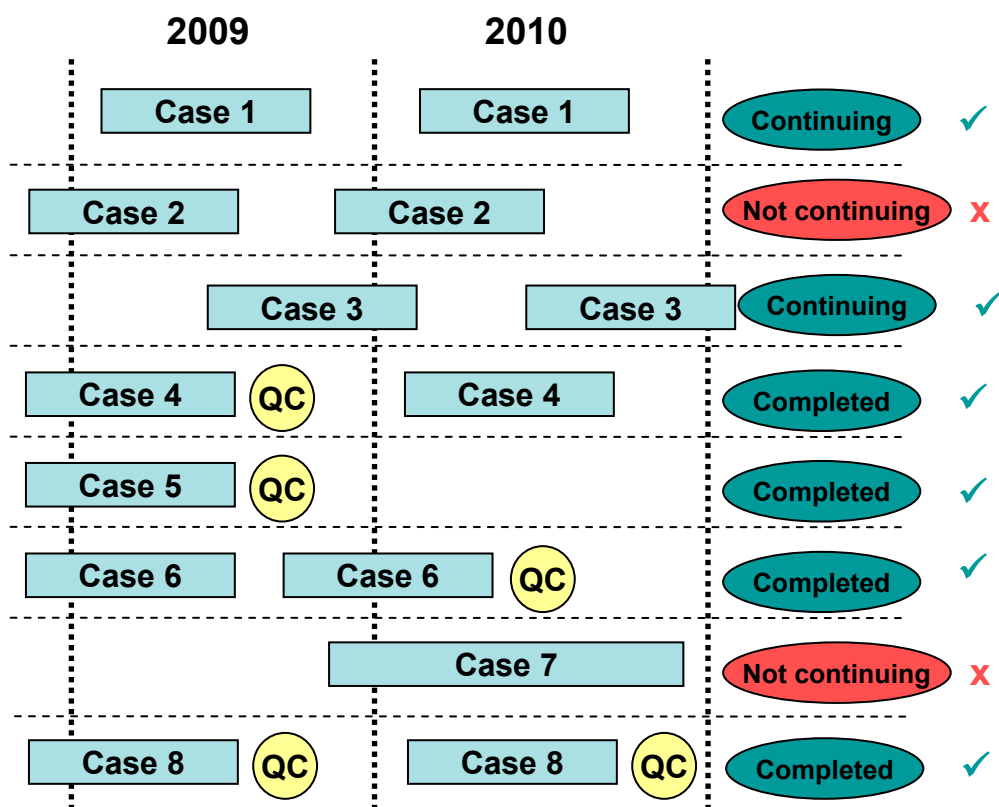
- Enrolments for courses in year n-1 for which the TEC does not expect qualification completions. These records are denoted by the QAC code values:
 - missing or blank
 - 25 or 37: certificates of proficiency
 - 90: certificates of personal interest
 - 96: STAR
 - 97: programmes of study taught under contract
 - 98: programmes of study made of selected unit standards, and
 - 99: adult and community education programmes of study at public tertiary education institutions.
 - (b) Include all course enrolments with some portion of an enrolment in year n-1. If the course straddles two or more calendar years, include the record as an enrolment in each year.
- (4) **Rules for calculating the numerator**
- (a) Re-enrolled students (NSNs) must have some portion of an enrolment in year n-1 and a subsequent re-enrolment with a course start date in year n at the same TEO. The re-enrolment may be in a course that is not SAC-funded; otherwise, **exclude** the following as re-enrolments.
 - Duplicate enrolments with an identical NSN, start date, course code, and TEO number. Where duplicates exist, retain only the last submitted enrolment in the course for the student per year.
 - Re-enrolments where the TEC does not expect a qualification completion.¹³
 - (b) The qualification completions included the numerator must meet the rules used to derive qualification completions for the qualification completions indicator (see paragraph 52). Include qualification completions that are 'imprecise matches' (see paragraph 52(3)(c)) in the numerator.
 - (c) Qualification completions are counted once towards year n reporting, if they occur in either year n or year n-1. A qualification completion can be counted in multiple years; that is, it can be counted for a student enrolled in a course starting in November 2007, and counted again for the same course ending in June 2008.
 - (d) Students do not have to be studying for the same qualification or at the same level to be counted as continuing or completed.

¹² SAC-funded records are denoted by the code '01' of the FUNDING field of the Course Enrolment File. This indicator may also be calculated for other (or all) funding sources, by altering this rule to suit.

¹³ Those with a QAC code value missing, 25, 37, 90, 96, 97, 98, or 99.

42 Figure 3 shows how possible enrolment scenarios are treated under these rules. In Figure 3, 2010 is used as 'year n' and 2009 is 'year n-1' (the student continuation or completion rate is calculated for 2010). Each rectangular box represents an enrolment. 'QC' represents a qualification completion.

Figure 3: Examples – student retention indicator (2010 is year n)



- The Case 1 student is considered re-enrolled, so they are counted as continuing in 2010, because they have a new enrolment start date in 2010 (year n) at the same TEO.
- The Case 2 student is **not** counted, because they have no new enrolment start date in 2010 and have not completed a qualification.
- The Case 3 student is counted, because they have re-enrolled in a course starting in 2010 (year n).
- The Case 4 student is completed and re-enrolled, so they are counted (once), because they completed a qualification in 2009 (year n-1) and re-enrolled in a new qualification in 2010 (year n) at the same TEO.
- The Case 5 student is considered completed, so they are counted, because they completed a qualification in 2009.
- The Case 6 student is completed, so is counted, because they completed a qualification in 2010.

- The Case 7 student is **not** counted in the 2010 rate, because they do not have a new start date in 2010 and did not complete a qualification in 2010.¹⁴
- The Case 8 student has completed in 2009, but they have also continued and completed in 2010. The student would count only once as a completion in the following reporting year, 2010.

43 The values for the denominator are used when calculating retention by register level. Since the denominator is a count of distinct students who could be enrolled in several courses, all at different levels, in a given year, use the student record with the highest register level.

Data used to calculate the student retention indicator

44 Table 3 describes the availability of the data necessary to calculate the full-year student retention indicator.

Table 3: Availability of data used to calculate full-year student retention indicator

Period of interest	Year	Example
Baseline enrolment year	year n-1	2009
Reporting retention or (re-enrolment) year	year n	2010
Indicative data produced using data up to and including	December SDR year n	December 2010 SDR
Indicative data available	Early year n+1	Early 2011
Final data produced using data up to and including	April SDR year n+1	April 2011 SDR
Final data available for TEO review	Mid year n+1	Mid 2011
Data finalised*	Approximately one month later	Mid-2011

Notes: Single Data Return (SDR) data can be uploaded using an open or closed basis. In the open basis, all available data can be used to calculate or update the indicator. In the closed basis, only data available as at a specific date can be used to update the indicator. The TEC default is the open basis. The TEC will advise TEOs of dates when it uses the closed basis.

* Data submitted in subsequent SDRs will not be included in indicator calculations for closed data.

¹⁴ This student may have re-enrolled in 2011 (year n+1), but this is not counted as continuation for the 2010 reporting year under these business rules.

Worked example

45 Table 4 shows a worked example calculating the student continuation or completion rate, using mock TEO data. A student can only be counted once in columns b, c, or d.

Table 4: Example – calculating the student continuation or completion rate

Calculation key:	a	b	c	d	e = b + c + d	e/a
TEO	No. of students enrolled in 2009	No. of students re-enrolled in 2010	No. of students completed qualification in 2009	No. of students completed qualification in 2010	Total no. re-enrolled or completed qualification	Student continuation and completion rate
TEO1	23,423	9,369	2342	6,558	18,269	78.0%

<p style="text-align: center;"><i>(e) Students re-enrolled in year n or completed in year n or year n-1</i></p> <p>Formula: $\frac{\text{---}}{\text{---}}$</p> <p style="text-align: center;"><i>(a) Students with some portion of an enrolment in year n-1</i></p>
--

Data quality issues affecting the indicator and implications on TEO data submission practices

46 Final figures will be based on information up to and including the April SDR. The following issues in the data submitted by the TEO at that time will affect the student retention indicator.

- Inconsistent or duplicate NSNs for the same student across years. This will result in re-enrolments not being captured.
- Students who enrol at the very end of the year and/or enrol in a course longer than 12 months (see Case 7 in Figure 3) may not have a new start date in year n, because the original enrolment in year n-1 extends throughout year n, so there is no time for re-enrolment. If the student only enrolls in one 12-month course late in 2009, for example, (and therefore has no opportunity to enrol in another course in 2010), the 2010 student retention indicator will include the enrolment during 2009 in the denominator and will not count the student as retained in 2010. If the student re-enrols in 2011, then this re-enrolment will be counted in the 2011 student retention indicator.
- Students taking a year off (e.g., a 'gap year') and re-enrolling at the same TEO in year n+1.
- Qualification completions not being reported or reported after the April SDR in the year following the reporting year.
- Factors that affect qualification completions (see paragraphs 56–62).

Qualification completion

What the qualification completion indicator reports

- 47 Qualification completions are measured by the EFTS-weighted qualification completion rate.
- 48 The rate is EFTS-weighted to allow for comparisons across TEOs by taking into account the relative size of different qualifications.
- 49 This measurement is more timely and simpler to replicate than the previous cohort-based two- and five-year qualification completion rates.
- 50 The qualification completion indicator is the number of qualifications completed at each TEO (weighted by the 'size' of the qualification¹⁵) divided by the total number of EFTS delivered for the total course enrolments ending in a given year (see Formula 3).

Formula 3: EFTS-weighted qualification completion rate

$$\frac{\text{Sum of qualification completions in year n x EFTS value of the qualification}}{\text{EFTS delivered for the total number of course enrolments ending in year n}}$$

- 51 See paragraph 55 for a worked example using Formula 3.

Rules for calculating the qualification completion rate

- 52 The rules for calculating the qualification completion rate are as follows.
- (1) Use the 'master' NSN, if the same student has multiple NSNs.
 - (2) **For the numerator, exclude** the following qualification completion records.
 - Qualification completion records for qualifications where the TEC does not expect a qualification completion, including QAC code values
 - missing or blank
 - 25: certificate of proficiency (student enrolled in course that can be credited to a degree)
 - 37: certificate of proficiency (student enrolled in course that can be credited to a diploma)
 - 90: certificates of personal interest

¹⁵ The 'size' does not refer to the number of equivalent full-time students enrolled in the qualification, but the EFTS value of the qualification taken from the Qualification Register. A bachelors degree, for example, typically has an EFTS value of 3.

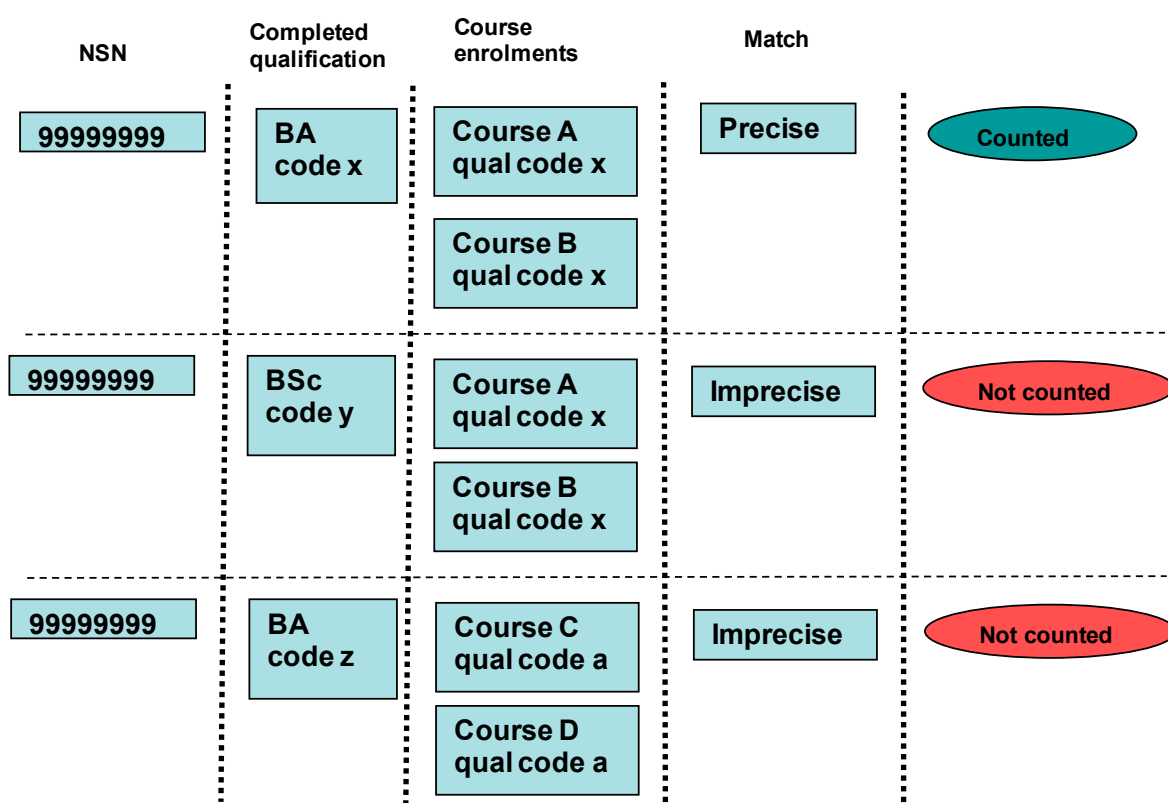
- 96: STAR
 - 97: programmes of study taught under contract
 - 98: programmes of study made of selected unit standards, and
 - 99: Adult and community education programmes of study at public tertiary education institutions.
- Duplicate qualification completions with an identical NSN, qualification code, and TEO number combination. (Where duplicates exist, select only the latest submitted record.)
- (3) **For the numerator**, match completions to enrolments. Since qualification completion records are stored separately in the SDR, each completion needs to be matched to an enrolment to ensure accuracy but also to access other information about the completion. The SDR does not record student enrolments in qualifications, only courses. The matching is done as follows.
- (a) Remove course enrolments for non-formal qualifications (QAC code value is 90, 96, 97, 99, or missing) but *include* certificates of proficiency (QAC code value is 25 or 37), programmes of study made from selected unit standards (QAC code value 98), and enrolments from any funding source (including non–SAC-funded enrolments).¹⁶
 - (b) Search for a match where the completion and an enrolment have the same student (NSN), TEO, and qualification code. These are called ‘precise matches’ in this document.
 - (c) Search for a match where only the student and the TEO are the same. These are called ‘imprecise matches’ because we are assuming the enrolment is for the completed qualification.
 - (d) Remove all unmatched qualification completion records.
 - (e) Remove all precise and imprecise qualification completion matches where a matched course enrolment has a course end date year greater than the reporting year. If there is a course enrolment with an end date after the qualification completion, we assume the student has not completed their studies.
- (4) Prioritise matched qualification completion records within the reporting year as follows.
- (a) Precise matches with at least one SAC-funded enrolment.¹⁷
 - (b) An imprecise match (with at least one SAC-funded enrolment) where a precise match does not exist.

¹⁶ Including enrolments in certificates of proficiency, programmes of selected unit standards, and non–SAC-funded courses allows qualification completions where the student has transferred from these types of courses to complete a formal, SAC-funded qualification.

¹⁷ This indicator may also be calculated for other individual (or all) funding sources, by altering or removing the rules accordingly. See Appendix C.

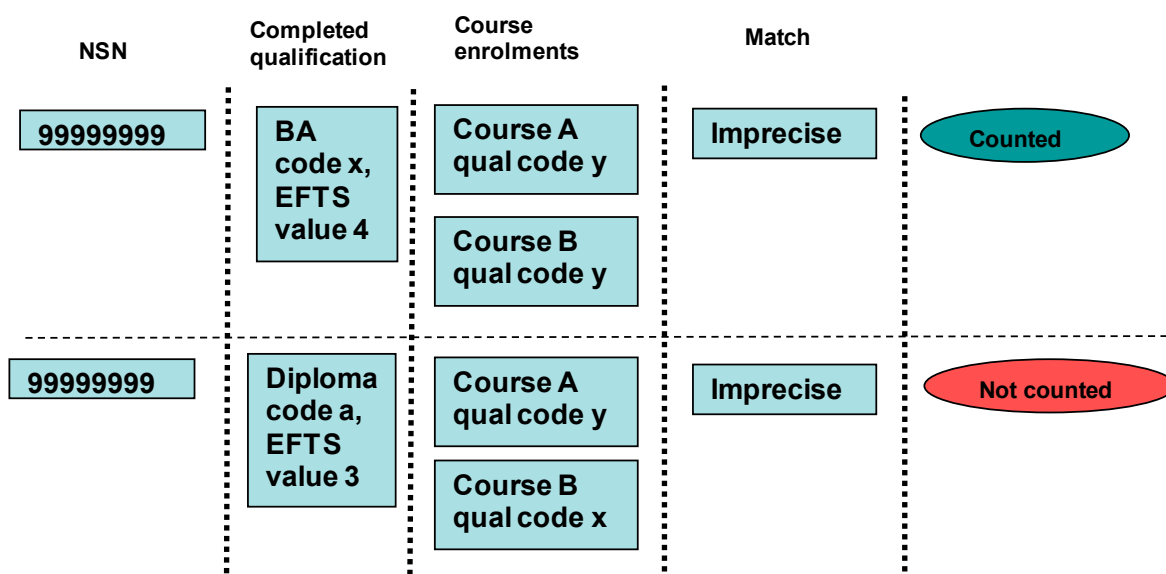
- (c) If both precise and imprecise matches exist, only the precisely matched qualification completions are counted.
- (d) Figure 4 below shows the completed qualifications with qualification codes y and z will not be counted because they can only be imprecisely matched with enrolments to other qualifications, and that another precisely matched qualification completion exists.
- (e) If there are more than one imprecisely matched qualification completions (and no precisely matched completions), only one can be counted (see Figure 5). We use the imprecise match completion with the highest qualification EFTS value.¹⁸

Figure 4: Example – excluding qualification completions with imprecise matches to enrolments when a precise match exists



¹⁸ If there are imprecise matches with identical qualification EFTS values, then the imprecise match with the highest qualification award level is selected. If the award level is identical, the imprecise match alphabetically using the qualification code is selected.

Figure 5: Example – excluding a second qualification completion with an imprecise match to enrolments



(5) **For the denominator**, exclude the following course enrolment records.

- Duplicate records with an identical NSN, start date, course code, and TEO number. Retain only the last submitted enrolment in the course for the student.
- Records for courses ending in year n for which the TEC does not expect a qualification completion, which are denoted by the QAC code values:
 - missing or blank
 - 25 or 37: certificates of proficiency
 - 90: certificates of personal interest
 - 96: STAR
 - 97: Programmes of study taught under contract
 - 98: Programmes of study made of selected unit standards, and
 - 99: Adult and community education programmes of study at public tertiary education institutions.
- Records that are not categorised as SAC-funded.¹⁹
- Include PBRF-eligible course enrolments in the denominator and numerator for the qualification completion indicator.

53 When calculating qualification completion by register level:

¹⁹ SAC-funded records are denoted by the code '01' of the FUNDING field of the Course Enrolment File. This indicator may also be calculated for other individual (or all) funding sources, by altering or removing this rule accordingly.

- the register level values for the denominator are those associated with enrolments
- the register level values for the numerator are those associated with the qualification completion.

Data used to calculate the qualification completion indicator

54 Table 5 describes the availability of the data necessary to calculate the full-year EFTS-weighted qualification completion rate.

Table 5: Availability of data used to calculate the full-year EFTS-weighted qualification completion rate

Period of interest	Year	Example
Reporting year	year n	2008
Indicative data produced using data up to and including	December SDR year n	December 2008 SDR
Indicative data available	Early in year n+1	Early 2009
Final data produced using data up to and including	April SDR year n+1	April 2009 SDR
Final data available for TEO review	Mid year n+1	Mid-2009
Data finalised*	Approximately one month later	Mid-2009

Notes: Single Data Return (SDR) data can be uploaded using an open or closed basis. In the open basis, all available data can be used to calculate or update the indicator. In the closed basis, only data available as at a specific date can be used to update the indicator. The TEC default is the open basis. The TEC will advise TEOs of dates when it uses the closed basis.

* Data submitted in subsequent SDRs will not be included in indicator calculations for closed data.

Worked example

55 Table 6 shows a worked example calculating the EFTS-weighted qualification completion rate, using mock TEO data.

Table 6: Example – calculating the EFTS-weighted qualification completion rate

Calculation key:		a	b	c	d	e
TEO	Qualification	Sum of qualification completions	EFTS for qualification	Numerator (a × b)	EFTS consumed for courses ending in year n	EFTS-weighted qualification completion rate (c/d)
TEO1	QUAL1	235	1	235	287	
TEO1	QUAL2	126	2	252	401	
TEO1	QUAL3	165	1	165	225	
TEO1	QUAL4	0	2	0	20	
Total TEO1				652	933	69.9%

<p>(a) Sum of qualification completions in year n x (b) EFTS value of the qualification</p> <p>Formula: _____</p> <p>(d) Sum of EFTS consumed for courses ending in year n</p>

Data quality issues affecting the indicator and implications for TEO data submission practices

Imprecise matches

- 56 The matching process described in paragraph 52(3) is necessary to determine whether the qualification includes courses that are SAC-funded. Not all qualification completions, however, can be matched to an enrolment with the same degree of certainty. We have implemented the 'imprecise' match to capture learners who were awarded a different qualification from the one they originally enrolled in, such as 'exit' qualifications.
- 57 Instances where a qualification completion is 'imprecisely' matched with an enrolment usually occur when a qualification is 'embedded' within a completed qualification, or when a student transfers from one qualification to another, or completes a double or conjoint degree.
- 58 The rules around the qualification completion indicator are intended to count one imprecisely matched qualification completion per student per reporting year if a precisely matched qualification completion does not exist. These rules are for 'exit' qualifications, where a student has enrolled in a qualification but leaves after fulfilling the requirements for another, perhaps lower level, qualification.

- 59 The rules are intended to exclude qualifications that are awarded without any new learning, effort, or EFTS delivered while completing another. The rules also exclude qualification completions that cannot be matched at all to any enrolment event.

Other data quality issues

- 60 Final figures will be based on information up to and including the April SDR. The following issues in the data submitted will affect the EFTS-weighted qualification completion rate.
- Qualification completions not being reported by the April SDR in year n+1.
 - Qualification completions for different qualifications with identical qualification codes. These will not be counted. The TEC qualification register does not differentiate these 'stranded' qualifications.
 - Qualification completions awarded by professional associations that have not enrolled the student. Since these completions are not being recorded in the SDR, they will not be counted if the original (enrolling) TEO does not submit the completion in its own SDR.
- 61 Qualification completions where the latest course enrolment end date is after the qualification completion year. This situation can occur in courses with relatively long durations and where the student may successfully complete such a course early.²⁰
- 62 Qualification completions may be affected by fluctuations in enrolments, such as from popular or new qualifications, as well as from established patterns of transferring from, for example, a bachelors degree to an honours degree. Disaggregated qualification completion rates should be interpreted with caution. For the purposes of funding or publication, qualification level aggregations will be as shown in Table 7.

²⁰ One possible mitigation is for the TEO to ensure the end date year for the last course enrolled in for the qualification is the actual date the student has completed the course (which should be less than or equal to the qualification completion year). Making this change also requires a change to the EFTS delivered per month associated with the course enrolment.

Table 7: Qualification level aggregations

National Qualifications Framework level	Aggregated level
1	1–2
2	1–2
3	3–4
4	3–4
5	5–6
6	5–6
7	7–8
8	7–8
9	9+
10	9+

Student progression

What the student progression indicator reports

- 63 Student progression is measured by the completion progression rate.
- 64 The completion progression rate is the percentage of students who complete a qualification at one TEO and move on within 12 months to pursue a qualification at a higher level at the same or a different TEO within New Zealand (see Formula 4).

Formula 4: Completion progression rate

$$\frac{\text{Number of students enrolled at a higher qualification level within 12 months following the qualification completion}}{\text{Number of students completing a qualification at each level in year n-1}}$$

- 65 This indicator is simpler to calculate and provides more timely information than the previous progression indicators. In the future, this indicator will include progression to higher-level qualifications funded by the Industry Training Fund as reported by industry training organisations. This inclusion will significantly increase progression rates for a small number of TEOs. At present, the information reported by industry training organisations is not included in the figures the TEC provides.
- 66 Note a student can be counted more than once, if they complete or re-enrol in more than one qualification at different levels.
- 67 Like the student retention indicator, the numerator is a subset of the denominator, and that the student progression rate for 2010 (for example) is based upon qualifications completed in 2009. See paragraph 70 for a worked example using Formula 4.

Rules for calculating the progression rate

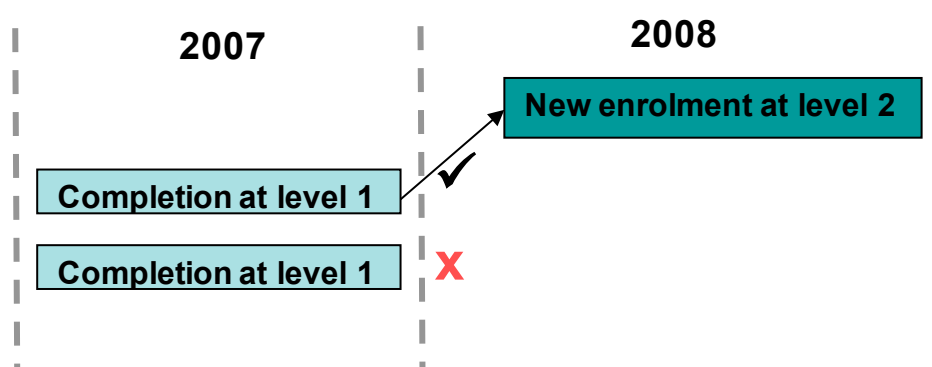
- 68 The rules for calculating the progression rate indicator are as follows.
- (1) Use the 'master' NSN, if the same student has multiple NSNs.
 - (2) Deriving the qualification completions used in the **denominator** follows the same rules as the qualification completion indicator described in paragraph 52, but **excludes** imprecise matches (and unmatched completions).²¹ Completions in certificates of proficiency and programmes of

²¹ Imprecise matches are excluded because they do not include course information, which we need to determine the latest course end date of the completed qualification.

study made up of selected unit standards are also excluded from the denominator.

- (3) To be included in the **numerator**, enrolments²² after the completed qualification must
- be at a higher qualification level on the New Zealand Qualifications Framework (NZQF) Register than the completed qualification
 - start in the period from 6 months before to 12 months after the latest course end date associated with the completed qualification
 - start after the earliest course start date associated with the completed qualification
 - finish after the latest course end date associated with the completed qualification, and
 - be in courses for which the TEC expects course completions.²³
- (4) If a student has more than one qualification completion at the same qualification level, TEO number and completion year combination (and has subsequent enrolments) then only one qualification completion is selected for the denominator (see Figure 6).

Figure 6: Example – student has more than one qualification completion at the same qualification level

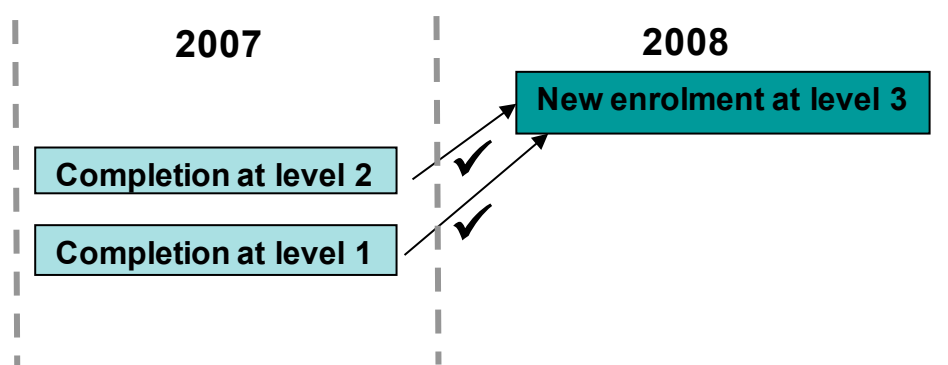


- (5) If the same student completes two qualifications but at different levels, both are counted if the student enrolls in a higher qualification (see Figure 7). One enrolment, then, can be re-used to count multiple progressions for the same student.

²² Note that if course enrolment or qualification completion **records** are excluded for the student progression indicator, it does not necessarily mean the **student** is excluded from the calculation. That student may have other enrolments or other qualification completions that allow him or her to be counted as 'progressed'.

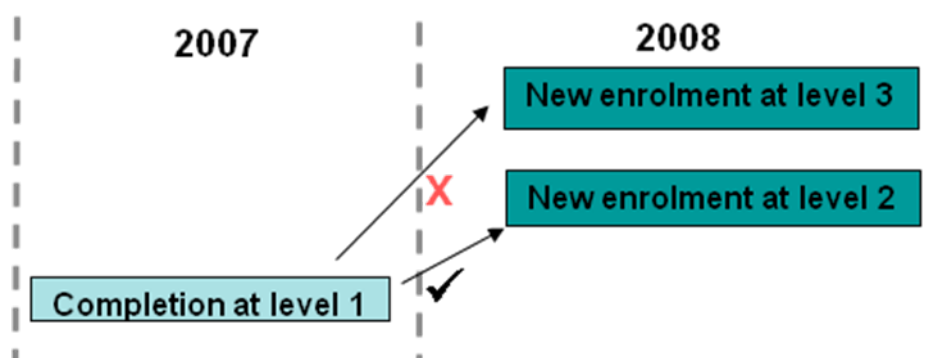
²³ Courses *excluded* are those with a QAC code value missing, 90, 96, 97, or 99. Note that subsequent enrolments in certificates of proficiency (QAC code value 25 or 37) and in programmes of study made up of selected unit standards (QAC code value 98) – although these are at levels 1 and 2 – are allowed in the numerator.

Figure 7: Example – same student completes two qualifications but at different levels



- (6) If a student has more than one post-completion enrolment, only one is counted per completed qualification level (see Figure 8).

Figure 8: Example – student has more than one post-completion enrolment



- (7) Subsequent enrolments (in the numerator) can be:
- from any funding source within the SDR and ILU²⁴ (that is, the subsequent enrolment does not have to be SAC-funded)
 - at any TEO, or
 - in a certificate of proficiency or programmes of study made up of selected unit standards.
- (8) The calculation uses only one enrolment and only one qualification completion per student per qualification level. The selection priority is:
- (a) progression to a SAC-funded course enrolment
 - (b) progression to a non-SAC enrolment
 - (c) progression to an industry training enrolment

²⁴ Enrolment (and completion) records for learners in industry training are currently not included in the calculation of the educational performance indicators, but where appropriate are eligible to be included in the student progression indicator.

- (d) progression to the qualification with the highest EFTS value
- (e) progression to the qualification that starts first (using course start date)
- (f) the completed qualification with the highest EFTS value
- (g) the completed qualification that finishes first (using course end date).

Data used to calculate the progression rate

69 Table 8 describes the availability of the data necessary to calculate the full-year completion progression rate.

Table 8: Availability of data used to calculate the full-year completion progression rate

Period of interest	Year	Example
Qualification completion year	year n-1	2007
Reporting 'Progression' year (following 12 months' post-completion)	year n in most cases but could be year n-1	2008
Indicative and final data produced using data up to and including	December SDR and ILU year n	December 2008 SDR and ILU
Indicative data and final data available for TEO review	Early year n+1	Early 2009
Data finalised*	Mid year n+1	Mid-2009

Notes: ILU = Industry Liaison Unit database (for industry trainees and Modern Apprentices). Single Data Return (SDR) data can be uploaded using an open or closed basis. In the open basis, all available data can be used to calculate or update the indicator. In the closed basis, only data available as at a specific date can be used to update the indicator. The TEC default is the open basis. The TEC will advise TEOs of dates when it uses the closed basis.

* Data submitted in subsequent SDRs will not be included in indicator calculations for closed data.

Worked example

70 Table 9 shows a worked example calculating the completion progression rate, using mock TEO data.

Table 9: Example – calculating the completion progression rate

Calculation key:		a	b	b/a
National Student Number	Qualification	Qualification completed successfully	Re-enrolled at higher level after successfully completing	Completion progression rate
1	QUAL01	1	0	
4	QUAL01	1	0	
8	QUAL01	1	1	
10	QUAL01	1	1	
Subtotal	QUAL01	4	2	50.0%
2	QUAL02	1	0	
4	QUAL02	1	1	
6	QUAL02	1	1	
7	QUAL02	1	0	
9	QUAL02	1	0	
10	QUAL02	1	0	
Subtotal	QUAL02	6	2	33.3%
3	QUAL03	1	1	
5	QUAL03	1	0	
6	QUAL03	1	0	
9	QUAL03	0	0	
Subtotal	QUAL03	3	1	33.3%
Total for TEO		13	5	38.5%

Formula:
$$\frac{(b) \text{ Total number of enrolments in a subsequent qualification at a higher qualification level within 12 months following the completion}}{(a) \text{ Total number of completed qualifications in year } n}$$

Data quality issues affecting the indicator and implications on TEO data submission practices

71 Data quality issues and their implications for the progression rate indicator are the same as for the qualification completion rate (see paragraphs 56–62).

Participation

What the participation indicator reports

- 72 A participation indicator measures the proportion of EFTS delivered for groups of interest.
- 73 The participation indicator is used to monitor the extent to which groups of New Zealanders such as Māori, Pacific, and young people are engaged in tertiary education.
- 74 Participation is calculated for any group of interest using Formula 5.

Formula 5: Participation rate

$$\frac{\text{Total EFTS delivered for a group of interest in year n}}{\text{Total EFTS delivered in year n}}$$

- 75 Unlike the successful course completion indicator, the EFTS delivered in the participation formula are apportioned to the specific calendar year in which they are delivered (not in the year of the course end date). For example, if a course starts in October 2008 and ends in May 2009, for the 2008 participation rate only the EFTS delivered between October and December 2008 will be included in the rate.

Rules for calculating participation rates

- 76 The rules for calculating participation rates are as follows.
- (1) Use the 'master' NSN, if the same student has multiple NSNs.
 - (2) **Exclude** the following course enrolment records.
 - Records that do not have SAC funding in year n.²⁵
 - Records for courses in year n for which the TEC does not expect qualification completions (for example, adult and community education courses).²⁶
 - Duplicate enrolments with an identical NSN, start date, course code, and TEO number. Retain only the last submitted enrolment in the course for the student.

²⁵ SAC-funded courses are denoted by the code '01' of the FUNDING field of the Course Enrolment File. The TEC will implement this rule to measure performance for SAC-funded qualifications, but this rule may be ignored if rates are being calculated for all, or other specific funding sources.

²⁶ Courses excluded are those with a QAC code value missing, 90, 96, 97, or 99. Enrolments records for courses for certificates of proficiency and programmes of study made up of selected unit standards are allowed in this indicator.

- Records that do not have some part of their EFTS delivered in the period of interest. For example, a student may enrol in a single course where one quarter is delivered in 2007 and three-quarters are delivered in 2008, so distribute the EFTS to each year accordingly.
- (3) Calculate the total EFTS delivered from the sum of all EFTS delivered falling in each month in the calendar year.
 - (4) When calculating participation rates for an ethnic group, the numerator is EFTS delivered for the unprioritised ethnic group, so that all students who have ticked any one of the three ethnicity fields for a particular ethnic group will be included in the EFTS delivered for that ethnic group. The denominator is the EFTS delivered for students of known ethnicity, so those who did not state an ethnic group are not included.
 - (5) When calculating participation rates for specific groups of qualification register levels or student age bands, such as qualification levels 1-3, qualification levels 4 and above, or students aged under 25, select the dedicated field where the EFTS delivered are pre-calculated for these groups for the numerator.

Data used to calculate participation rates

77 Table 10 describes the availability of the data necessary to calculate the full-year participation indicator.

Table 10: Availability of data used to calculate the full-year participation indicator

Period of interest	Year	Example
Reporting year	year n	2008
Indicative and final data produced using data up to and including	December SDR	December 2008 SDR
Indicative data and final data available for TEO review	Early year n+1	Early 2009
Data finalised*	Mid year n+1	Mid-2009

Notes: Single Data Return (SDR) data can be uploaded using an open or closed basis. In the open basis, all available data can be used to calculate or update the indicator. In the closed basis, only data available as at a specific date can be used to update the indicator. The TEC default is the open basis. The TEC will advise TEOs of dates when it uses the closed basis.

* Data submitted in subsequent SDRs will not be included in indicator calculations for closed data.

Dimensions

Introduction

- 78 This section lists the dimensions by which the educational performance indicators may be disaggregated when performance information is published, to define Investment Plan commitments, in funding models, and to monitor the Tertiary Education Strategy 2010–15.
- 79 New dimensions were added after the 2008–10 key performance indicators were implemented and some dimensions, such as ethnicity, were modified slightly in 2010.
- 80 The dimensions are:
- age
 - embedded literacy and numeracy flag
 - ethnicity
 - National Qualifications Framework register level
 - New Zealand Standard Classification of Education
 - QAC code
 - relative workload, and
 - type of attendance.

Age

How the age dimension is used

- 81 The age of a student is used in conjunction with the educational performance indicators to identify outcomes for specific groups, such as younger learners aged under 25.
- A student's age is calculated using the date of birth (DOB field from the Student File in the SDR).
 - If more than one date of birth exists, the most recent date of birth associated with an NSN is selected.
 - The student's age in years is calculated as at 1 July of the year of interest and rounded down to a whole number.
 - Where the age is unknown due to a missing or invalid date of birth, the student is included in the 40+ age group when disaggregating by age band.

Embedded literacy and numeracy flag

How the embedded literacy and numeracy flag is used

- 82 The literacy and numeracy flag (field number 3.18) was introduced in 2010. The field denotes whether a register level 1–5 course has an embedded literacy and/or numeracy component. It will be used alongside the educational performance indicators to monitor the participation of students enrolled in these courses. It will also be used in a future indicator to measure gain in literacy and numeracy levels.
- 83 Only TEOs offering courses with an embedded literacy and/or numeracy component are required to use this flag.

Ethnicity

How the ethnicity dimension is used

- 84 The ethnicity dimension is used in conjunction with educational performance indicators to monitor the achievement of groups of interest to the sector and government – specifically, Māori and Pacific students.
- 85 TEOs report up to three ethnicity (ETHNIC) codes for a student with each Student File. Students who report multiple ethnicities are counted once in each group with which they identified themselves. For example, a student who reports both Māori and Tongan ethnicities is counted once in the Māori group and once in the Pacific group.
- 86 The following rules have been applied to all indicators, including participation, when the indicator is disaggregated by ethnicity.
- Exclude students whose ethnicity is not stated (code 999) (implemented in 2010).
 - Aggregate students whose ethnicity is Middle Eastern/Latin American/African with those in the “Other” ethnicity category.

New Zealand Qualifications Framework register level

How the New Zealand Qualifications Framework register level is used

- 87 The New Zealand Qualifications Framework (NZQF) register level is used in conjunction with the educational performance indicators to identify the level of study of a course or qualification. The register level is predominantly used in the calculation of the progression indicator to determine progression to higher level qualifications after completing a qualification.
- 88 When calculating retention and progression rates by register level, the register level filter is applied only to the denominator. For example, to calculate retention at Levels 4 and 5, we select students who enrolled in Levels 4 and 5 courses for the denominator, then include re-enrolments and qualification completions at any level (not just Levels 4 and 5) for those students in the numerator.

- 89 When calculating progression by level, the qualification register level filter is applied only to the denominator. The numerator, however, includes only re-enrolments in a higher level than the filter.
- 90 The above technique (of applying a register level filter only to the denominator) is not required when calculating successful course completion or qualification completion by register level. Qualification completion is first calculated at the qualification level anyway before being summed to derive a rate for the TEO, and enrolments and completions for courses are, by definition, at the same level.

New Zealand Standard Classification of Education (NZSCED)

How the NZSCED is used

- 91 The NZSCED dimension identifies the field of study of a course or qualification.
- 92 The NZSCED will be used to disaggregate the educational performance indicators by the field of study of courses. This dimension is a six-digit code taken from the course enrolment (for example, 010901 denotes biochemistry and cell biology).

Qualification Award Category code (QAC code)

How the Qualification Award Category code is used

- 93 The primary use of the QAC code field is to distinguish between formal and non-formal qualifications. The QAC code is also used in conjunction with the educational performance indicators to identify the level of study of a course, programme, or qualification.
- 94 We will increasingly be moving from using the QAC code to define level of study to the NZQF Register level. However, the QAC code classification allows a finer level of disaggregation of some qualification levels, so will still be used to distinguish between formal and non-formal qualifications.

Relative workload and part-time study

- 95 The relative workload dimension is used to calculate the part-time learning rate, which in turn will be used to calculate funding linked to performance.

How the relative workload dimension is used

- 96 The relative workload dimension is derived using the EFTS delivered and the EFTS value of the qualification. This dimension provides a measure of the workload undertaken by a student relative to a full-time workload.
- 97 The rules used to calculate the relative workload dimension are as follows.
- (1) Use the 'master' NSN, if the same student has multiple NSNs.
 - (2) Exclude course enrolment records for the following.
 - Duplicate records with an identical NSN, start date, course code, and TEO number. Retain only the last submitted enrolment in the course for the student.

- Records that do not have SAC funding ending in year n.
 - Records for courses in year n for which the TEC does not expect qualification completions (for example, non-formal courses such as adult and community education courses).²⁷
- (3) Include all course enrolments with a course end date in year n.²⁸ For example, if the course end date is 27 August 2008, the enrolment will be included in the year 2008 group.
 - (4) We will use the December SDR to select the course enrolments for year n or the latest return available, if the TEO has not submitted its December SDR. See Figure 2 to see the SDR used to sum the EFTS delivered for a 2008 course record.
 - (5) The EFTS delivered used in the calculation includes the EFTS_MTH field values of the SDR for the entire enrolment, even if the enrolment extends into the next calendar year. For example, if the enrolment starts in 2007 but the course end date is in 2008, all EFTS_MTH values will be summed from the start date (summing 2007 and 2008) for the 2008 analysis year.
 - (6) To calculate the numerator, sum the total EFTS delivered for all courses ending in year n.
 - (7) To calculate the denominator, sum the number of distinct students, weighted by the qualification EFTS value, for all qualifications.
 - (8) Calculate the relative workload using Formula 6

Formula 6: Relative workload dimension

$\frac{\text{Sum of EFTS delivered for distinct students with courses ending in year n}}{\text{Number of distinct students enrolled in each qualification x the EFTS value of the qualification (capped at 1)}}$
--

- 98 It is possible the relative workload of a qualification could be greater than 1. This could occur if sufficient numbers of students repeat courses. Disaggregated qualification completion rates should be interpreted with caution. Table 7 shows the qualification level aggregations for funding or publication purposes.
- 99 The relative workload is used to calculate the part-time study rate. The relative workload is capped at 1 for the calculation. The formula is

Formula 7: Part-time study

$1 - \text{relative workload (capped at 1)}$
--

²⁷ Courses excluded are those with a QAC code values missing, 25, 37, 90, 96, 97, 98, or 99.

²⁸ Where CRS_END field (from the Course Enrolment File) year is equal to the reporting year.

Type of attendance

How the type of attendance dimension is used

- 100 The ATTEND field denotes whether a student is enrolled in a course requiring attendance at scheduled teaching sessions. This variable may be used to indicate variation across TEOs in the proportions of intramural compared with extramural student attendance.
- 101 The rules used to calculate type of attendance are as follows.
- (1) Apply steps (1) to (5) in paragraph 97 (that is, the first five rules for calculating relative workload).
 - (2) Group the four possible ATTEND values into two groups as follows.
 - (a) Group codes 1 – intramural and residing in New Zealand and 4 – intramural and residing overseas as INTRAMURAL.
 - (b) Group codes 2 – extramural and residing in New Zealand and 3 – extramural and residing overseas as EXTRAMURAL.
 - (3) Take all courses ending in year n for each student at a TEO and sum the EFTS delivered for each student (NSN) as described in step (5) of paragraph 97. This will give the total INTRAMURAL EFTS and total EXTRAMURAL EFTS at a TEO.
 - (4) Calculate a proportion of extramural attendance using Formula 8.

Formula 8: Proportion of extramural attendance (for type of attendance dimension)

$$\frac{\text{Total extramural EFTS in year n}}{\text{Total EFTS delivered for courses ending in year n}}$$

Conclusion

Indicator development and finalisation

- 102 The core educational performance indicators are designed to be viewed together to provide an overall picture of a TEO's performance with regard to student achievement.
- 103 Other indicators under development will measure other aspects of TEO performance, such as financial performance indicators and indicators that enable monitoring of Investment Plan commitments or the Tertiary Education Strategy.
- 104 The TEC will continue to produce further versions of this document as the educational performance indicators and others are developed and while the TEC's accountabilities to the Government are clarified.

Implementation of the educational performance indicators

- 105 The TEC began using the core indicators described here from April 2010, based on SDR data going back to 2008 for the 2010 reporting year. However, the business rules underlying the calculations of the indicators are still subject to change.
- 106 The implementation of the indicators coincided with the launch of the TEC's integrated data warehouse in 2010. This warehouse will incorporate the SDR with other databases and allow each TEO that receives TEC funding to view the data the TEC holds for it.

Data supply and data warehouse

- 107 The TEC has started to provide each TEO with the data used to calculate that TEO's performance indicators. This data has been extracted from the data warehouse.
- 108 Each TEO's data is downloadable as OLAP cubes that are accessible through Microsoft Excel pivot tables, enabling TEOs to manipulate and analyse their own data.

Appendix A: Abbreviations

Abbreviation	Term	Abbreviation	Term
EFTS	equivalent full-time student	QAC code	Qualification Award Category code (used to denote formal and non-formal qualifications)
ILU	Industry Liaison Unit (name of database holding enrolments and completions for industry training)	REAP	Rural Education Activities Programme
ITP	Institute of Technology and Polytechnic	SAC	Student Achievement Component
NSN	National Student Number	SDR	Single Data Return
NZQA	New Zealand Qualifications Authority	STAR	Secondary Tertiary Alignment Resource
NZQF	New Zealand Qualifications Framework	TEC	Tertiary Education Commission Te Amorangi Mātauranga Matua
NZSCED	New Zealand Standard Classification of Education (the field of study for courses and qualifications)	TEI	Tertiary education institution (universities, ITPs, and wānanga)
OTEP	Other Tertiary Education Provider	TEO	tertiary education organisation
PBRF	Performance-Based Research Fund	TES	Tertiary Education Strategy
PTE	Private Training Establishment		

Appendix B: How the TEC processes changes to data

- 109 This appendix clarifies how the TEC processes changes TEOs make to their SDR submissions. This updates the previous version of this document (Version 3, July 2010), describing practices that were used on 2009 educational performance information published in September 2010, as well as noting minor changes reflected in the 2010 performance information.
- 110 Table 11 below documents the fields associated with two different ways how the TEC currently processes changes to data. For the fields in the 'Point in time' column, the field value is as at 31 December of the reporting year. For the fields shown in the 'Latest record' column, the value of the field is taken from the most recent SDR.

Table 11: Field classification by how the TEC processes changes in field values

Point in time (value as at 31 December of the reporting year)	Latest record (from the most recent SDR)
Ethnicity	Date of birth (age)
Course EFTS Factor	Gender
Is Literacy Numeracy	NSN
PBRF Eligible	Course code
	Course register level
	Course title
	Provider code
	Provider name
	Funding source
	Qualification EFTS value
	Qualification Award Category code
	Qualification Register Level
	Qualification NZSCED

- 111 For the 2009 educational performance information, the TEC used the value as at 31 December 2009 for all fields except for course funding source (where the value in the first record was used), NSN, gender, date of birth, qualification EFTS value, qualification register level, and qualification award category code (all of which used the value in the latest submitted record). We made this change as a result of feedback received after the previous version of this document was released.

112 Currently (and for the 2010 educational performance information), we use the latest submitted record for most fields, with only the four fields in the 'point in time' column in Table 11 using the value as at 31 December of the reporting year.²⁹

²⁹ The current process for qualification EFTS value, qualification register level, and qualification award category code is for the values to be as at 31 December of the previous year (e.g. 2010) for review data sets. These values are updated with the latest value prior to finalisation and publication of the EPIs.

Appendix C: Calculating the indicators for funding sources other than the Student Achievement Component

Source of funding

- 113 The rules in this document apply to tertiary education organisations (TEOs) funded through the Student Achievement Component (SAC). However, each of the educational performance indicators may be calculated for any funding source (such as the Youth Guarantee programme) or for *all* funding sources to give an overall picture of the educational performance at a TEO.
- 114 The Tertiary Education Commission (TEC) will use the source of funding field (FUNDING) as a filter to calculate the educational performance indicators for the funding source of interest. For example, to monitor educational performance in courses and qualifications funded by the Youth Guarantee programme, we use filter records where the FUNDING field has a value of '22'. TEOs may be less likely to disaggregate the indicators by the source of funding, preferring to look at overall educational performance for all funding sources.
- 115 The rest of this appendix documents the changes to the business rules of each indicator should a user want to calculate the indicator for a funding source other than the SAC.

Successful course completion

Calculating the indicator for Youth Guarantee-funded courses

- 116 Replace the second bullet point of rule (3), paragraph 31, 'Enrolments that have not received SAC funding', with:
- Enrolments that have not received any Youth Guarantee funding. Youth Guarantee-funded records are denoted by the code '22' of the source of funding (FUNDING) field.

Calculating the indicator for all funding sources

- 117 Delete the rule in the second bullet point of rule (3), paragraph 31, 'Enrolments that have not received SAC funding'.

Student retention

Calculating the indicator f-funded students

- 118 Replace in paragraph 41, rule (3), the second bullet point under paragraph (a), 'Enrolments that did not receive SAC funding' with:
- Enrolments that have not received any Youth Guarantee funding. Youth Guarantee-funded records are denoted by the code '22' of

the source of funding (FUNDING) field. However, non–SAC-funded re-enrolments are counted in the numerator in year n.

119 Replace, in paragraph 41, rule (4), ‘Rules for calculating the numerator’, rule (a) with:

- (a) Re-enrolled students (NSNs) must have some portion of an enrolment in year n-1 and a subsequent re-enrolment with a course start date in year n at the same TEO. The re-enrolment may be in a course that is not Youth Guarantee-funded. Otherwise, **exclude** the following as re-enrolments.
- Duplicate enrolments with an identical NSN, start date, course code, and TEO number. Where duplicates exist, retain only the last submitted enrolment in the course for the student is retained.
 - Re-enrolments where the TEC does not expect a qualification completion.³⁰

Calculating the indicator for all funding sources

120 Delete in paragraph 41, rule (3), the second bullet point under paragraph (a), ‘Enrolments that did not receive SAC funding. However, non-SAC-funded re-enrolments are counted in the numerator in year n’.

Qualification completion

Calculating the indicator for Youth Guarantee–funded qualifications

121 Replace in paragraph 52, rule (4)(a) and (4)(b), with:

- (4) Prioritise matched qualification completion records within the reporting year as follows.
- (a) Precise matches with at least one Youth Guarantee-funded enrolment;
- (b) An imprecise match (with at least one Youth Guarantee-funded enrolment) where a precise match does not exist.

122 Replace in paragraph 52, rule (5) the second to last bullet ‘Records that are not categorised as SAC-funded,’ with:

- ‘Records that have not received Youth Guarantee funding’.

Calculating the indicator for all funding sources

123 Replace in paragraph 52, rule (4), paragraphs (a) and (b) with:

- (4) Prioritise matched qualification completion records within the reporting year as follows.

³⁰ Those with Qualification Award Category Code values that are missing or have a code of 25, 37, 90, 96, 97, 98, or 99.

- (a) Precise matches.
- (b) An imprecise match where a precise match does not exist.

124 Delete in paragraph 52, rule (5), the second to last bullet point, 'Records that are not categorised as SAC-funded'.

Student progression

Calculating the indicator for Youth Guarantee–funded students

- 125 Replace in paragraph 68, rule (2), with
- (2) Deriving the qualification completions used in the **denominator** follows the same rules as the qualification completion indicator described in paragraph 52, but **excludes** imprecise matches (and unmatched completions).³¹ Completions in certificates of proficiency and programmes of study made up of selected unit standards are also excluded from the denominator. Qualification completions must have at least one Youth Guarantee-funded enrolment.
- 126 Replace in paragraph 68, rule (8), paragraphs (a) and (b) with:
- (a) progression to a Youth Guarantee-funded course enrolment
 - (b) progression to a non–Youth Guarantee enrolment.

Calculating the indicator for all funding sources

- 127 Replace in paragraph 68, rule (2), with
- (2) Deriving the qualification completions used in the **denominator** follows the same rules as the qualification completion indicator described in paragraph 52, but **excludes** imprecise matches (and unmatched completions).³² Completions in certificates of proficiency and programmes of study made up of selected unit standards are also excluded from the denominator. Qualification completions do not have to be SAC-funded.
- 128 Delete in paragraph 68, rule (8), the following paragraphs:
- (a) progression to a SAC-funded course enrolment
 - (b) progression to a non SAC enrolment

Participation

Calculating the indicator for Youth Guarantee–funded EFTS

- 129 Replace in paragraph 76, rule (2), the first bullet point, 'Records that do not have SAC funding in year n' with:

³¹ Imprecise matches are excluded because they do not include course information, which we need to determine the latest course end date of the completed qualification.

³² Imprecise matches are excluded because they do not include course information, which we need to determine the latest course end date of the completed qualification.

- Records that have not received any Youth Guarantee funding. Youth Guarantee-funded records are denoted by the code '22' of the source of funding (FUNDING) field.

Calculating the indicator for all funding sources

130 Delete in paragraph 76, rule (2), the first bullet point, 'Records that do not have SAC funding in year n'.

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