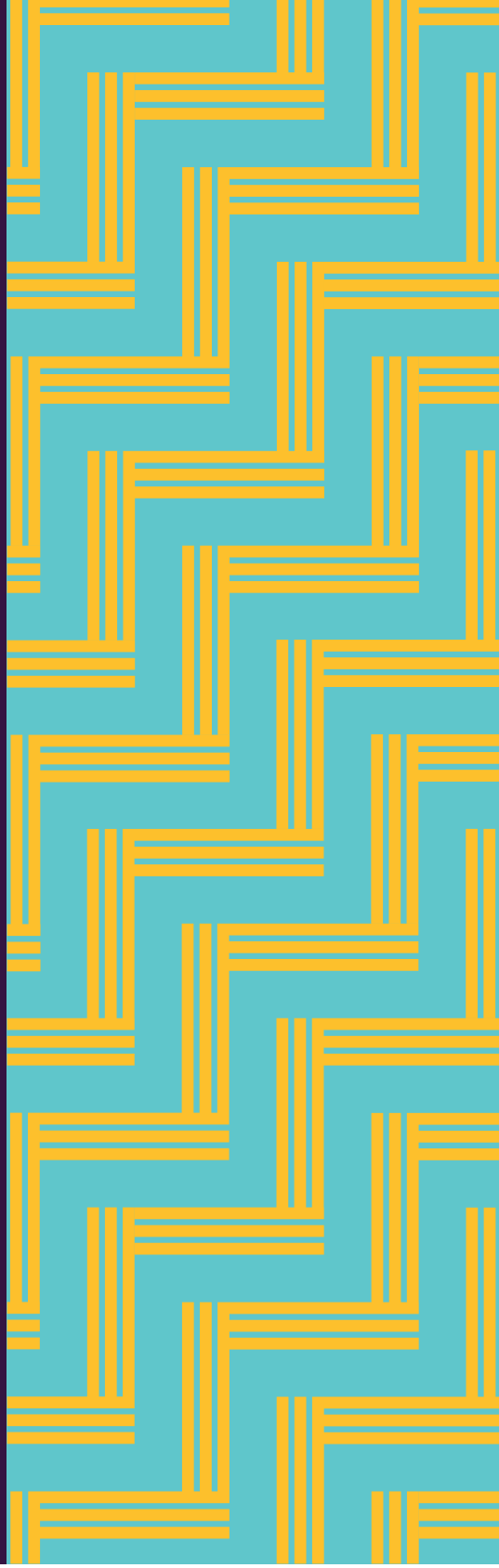
Consultation on proposed changes to the ITE Mathematics Entry Requirements – September 2024

Submission feedback analysis



Teaching Council of Aotearoa New Zealand

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Background to the survey and summary of the questions

The Teaching Council sought feedback on a proposal to require 14 NCEA Level 2 credits in mathematics or Pāngarau as an entry threshold for primary Initial Teacher Education (ITE) programmes, starting in 2025. The Teaching Council also proposed introducing a prescribed assessment tool, allowing those without the requisite NCEA Level 2 credits to demonstrate mathematics competence. This proposal reflected one part of a broader response to strengthen the mathematics capability of primary teachers and thereby to raise numeracy levels of ākonga[1].

The proposal focused on the primary sector partly on the basis that workforce supply was strong and any potential reduction in the number of ITE applicants would not significantly affect supply. It was also proposed as part of a suite of changes over the shorter and longer term to build or improve other elements of the teacher preparation system, including curriculum changes, assessment of ITE candidates, and induction and mentoring.

A consultation document and online survey were circulated to the teaching profession, ITE providers and stakeholders for comment.

The consultation aimed to test the profession's views on its level of support for strengthening the mathematics competency of the teaching profession overall, specifically by increasing the entry threshold for primary ITE programmes. Supplementary questions focused on what form the prescribed assessment should take, ITE bridging programmes in mathematics, and any barriers that ITE entrants and providers might face in these bridging programmes.

Eight questions sought feedback on:

- whether there is support to strengthen the capability of new teachers at primary level to teach mathematics
- if there is merit in moving towards a requirement to demonstrate competence in mathematics prior to entry to an ITE programme
- whether demonstrating competence in mathematics prior to entry to primary ITE programmes and/or including components to develop a teacher's mathematics competence as part of primary ITE programmes was likely to be more effective in raising competency
- the appropriateness of using 14 NCEA L2 credits in mathematics and statistics and/or Pāngarau (at any level) as a measure of mathematics competence
- whether an alternative assessment could be used and if it should be common across all providers
- whether providers could enrol candidates who had not met the criteria on a provisional basis (with the expectation they would pass at some point), and if so,
    - for how long this option should apply
    - whether this assessment should be formative
- whether bridging programmes or other forms of assistance would be effective in helping prepare student teachers to meet the new requirements, and what issues might arise for providers and candidates.

Online submission response data

The Teaching Council consulted with the profession and stakeholders from 29 August to 30 September. Almost 2,400 online survey responses were received with a further 20 written submissions from

[1] These proposed measures would sit alongside the revised mathematics curriculum and resources and increased professional leadership development for kaiako announced by the Minister of Education.

individuals. Nine written submissions were received from key stakeholders, including ITE providers and the Ministry of Education, three from individual senior staff within ITEs with significant knowledge and/or experience of ITE programme provision.

The majority of feedback to the online survey was from kaiako across ECE, primary and secondary settings (80%). Principals, tumuaki and ECE leaders represented 15% of respondents. Online responses from ITE providers and organisations together made up 4% of submissions.

The specific consultation questions are set out in Appendix 1.

General support for proposals from the profession

Online submissions were generally supportive of the proposals:

1. Strong support for increasing the mathematics competence of the teacher workforce (83% of respondents).
2. Strong support for strengthening teacher competency by adding requirements
    a. to demonstrate competence prior to entry to ITE (14%), or
    b. to build mathematics pedagogy and knowledge into ITE programmes (23%), or
    c. both (55%).
3. Slightly more than half (56%) considered 14 NCEA Level 2 credits was 'about right', although some considered this level as was 'too high' (22%) or 'too low' (19%).
4. General support for a standardised mathematics assessment that could be used for entry across all ITE providers (78%).
5. High support for ITE providers to offer provisional entry (for various time periods) to candidates for limited or extended periods of time (84%).
6. General support for providers to undertake formative assessments of mathematics ability of candidates admitted on a provisional basis (75%).
7. General support for mathematics bridging programmes to support potential candidates who showed promise but did not meet the NCEA requirements (76%).
8. Uncertainty over whether barriers exist for ITE providers to deliver bridging programmes (56% unsure, 25% yes, 19% no).
9. Uncertainty over whether barriers exist for ITE candidates to use bridging programmes (50% unsure, 22% yes, 26% no).

Written submissions from individual kaiako were also received. Of these:

- four supported the proposal as described
- two supported a lower requirement than NCEA level 2 for entry to primary ITE
- four felt it is more appropriate to provide mathematics support during their ITE course
- four were concerned the NCEA level would discourage potential candidates
- two did not support the proposal.

General lack of support for proposals from ITE providers and key stakeholders

Nine responses were received from key stakeholders: Te Rui Roa | NZEI, NZ Council of Deans, Teacher Education Forum of Aotearoa New Zealand (TEFANZ), Te Rito Maioha, Te Whakarōputanga kaitiaki kura o Aotearoa |NZ School Boards Association (formerly NZSTA), University of Canterbury Faculty of

Education, and Pacific Development Team, Victoria University School of Education, and the Ministry of Education. Together these responses represent a significant proportion of the profession and system.

In addition, three submissions were received from individuals with significant knowledge and experience in this area. Their summarised responses are set out in Appendix 2.

Overall, these stakeholders agreed with the general proposition that increased mathematics competency was a good thing.

The NZ School Boards Association supported all the proposals in the consultation, agreeing that 14 L2 credits was an appropriate pre-entry level, that there should be a transitional alternative entry for two years with a formative basis allowing for a pass to be achieved before graduation, and that bridging programmes should be made available.

All other stakeholder submissions however did **not** support the proposed 14 L2 mathematics/Pāngarau credits as an appropriate level and other elements of the proposal. There were several grounds of objection cited including that the proposal is:

- not a good match with the mathematics content and competencies needed for primary teaching (analysis of the proposed NCEA standards showed a lack of alignment with the requirements of primary numeracy teaching). In addition the current competency levels of primary teachers are not known
- likely to have a negative effect on applications for primary teaching – and consequently on workforce supply
- likely to reduce the diversity of potential applicants, especially among Māori and Pacific ākonga who have lower rates of enrolment in NCEA mathematics
- generally inequitable, as some students may not have had the same opportunities within the schooling system to successfully complete NCEA mathematics at the right level, again potentially disadvantaging Māori and Pacific particularly, as well as those from low-income families and migrant communities
- likely to have flow-on effects where senior school students would be limited in their ability to take a broad range of subject in arts, languages science and humanities – all of which are regarded as important for a primary teacher.

In addition, these submitters noted that:

- there is not a robust case that lifting ITE entry requirements for primary school candidates will improve overall student achievement rates in mathematics because being good at those particular mathematics subjects does not necessarily translate to being able to teach mathematics
- students' poor mathematics achievement rates are not solely due to the mathematics capability of teachers, and overall are broadly similar to comparable OECD countries. PLD is a critical factor in supporting teachers to teach mathematics effectively
- a standardised formative assessment could more accurately reflect the mathematics competency standards required to teach primary students and improve the capability of teachers. Many organisations support this being the permanent entry requirement instead of, rather than as an alternative to, NCEA level 2
- requiring ITE providers to explicitly build mathematics knowledge and pedagogy into primary ITE programmes is more effective at strengthening mathematics ability and is already in place
- a potential 'back-door entry' to primary teaching could be created if candidates undertake ECE programmes (to avoid the mathematics requirement) but then switch to primary teaching
- the timing is inappropriate given the curriculum changes already underway
- some providers have already offered unconditional placements to candidates for 2025 and 2026.

Additional support for ITE providers to provide targeted interventions for students needing to improve their mathematics ability was suggested. Bridging programmes were generally supported noting that each would require investment of resources (from their organisations and/or government) and time. Some programmes are already in place. but they may target general academic capability rather than specific curriculum area and thus sit outside ITE programmes, and any extra time or cost requirements could be a disincentive for candidates.

Key representative submissions

While the main points of submitters are set out above it is worth noting the views of key representative bodies (further detail is provided in Appendix 2).

New Zealand Council of Deans

The key points include a lack of empirical evidence that the mathematics capability of primary teachers needs strengthening or that lifting the mathematics entry requirmenets would lift student achievement. The lack of alignment of the NCEA Level 2 mathematics and statistics papers does not align with the foundational mathematics knowledge needed for primary mathematics teaching. Concerns about potential negative effect on workforce supply, reduction in diversity of applicants, and skewing of subject choice away from arts, language, science and humanities subjects.

A standard national assessment is supported on the basis that it does not need to be met prior to entry.

NZEI Te Rui Roa

The proposal was generally not supported, and the union noted the ITE system is robust, well-managed and monitored. Their submission questioned the evidence base for the proposed change and the lack of correlation between NCEA Level 2 mathematics and the skills and knowledge needed for primary teaching. It supports a permanent common alternative assessment and access to bridging programmes.

TEFANZ

The proposal was not supported and was expected to have negative consequences for ITE and for the workforce in the short and long term. NCEA Level 2 was also seen as not being directly relevant for primary teaching.

Ministry of Education

The Ministry's submission supported the intent of the proposal to lift mathematics entry standards for primary ITE programmes. The Ministry noted several areas it thought the Teaching Council should consider if a decision was made to introduce a change.

The Ministry contextualised its workforce projections forecasting by noting that primary teacher supply challenges were likely to exist in hard-to-staff areas (small/rural and high equity index schools). Its analysis of 2024 NCEA Level 2 passes also indicates that only 71% of domestic students would meet the proposed new threshold –reflecting a potential 30% drop in eligibility among school-leaver applicants (at least in the short term).

The submission also questioned the appropriateness of 14 NCEA L2 credits as the benchmark for primary teaching and offered to provide advice on matching entry to curriculum requriements.

In addition it raised concerns that:

- the potential flow-on effect is likely to result in challenges to place kaiako in hard-to-staff areas, small/rural schools and those with a high equity index – potentially leading to engagement of non-qualified staff

- if supply was affected it could also increase demand for more overseas-trained teachers (who meet a similar standard) – unintentionally disadvantaging our domestic workforce
- the proposed entry is likely to disproportionately disadvanage Māori and Pacific students
- a pre-entry requirement that excluded potential students would reduce opportunities to improve student capability during their course of study
- ITE provider capacity to provide bridging support would be constrained by budget and personnel resourcing.

Appendix 1: Online consultation questions

1. Do you see merit in having a requirement to demonstrate competence in mathematics prior to entry to a primary ITE programme?

2. Which of the following would be most effective at strengthening mathematics teaching capability?
   a. a requirement to demonstrate competence in mathematics prior to entry to a primary ITE programme
   b. adding an explicit requirement to build mathematical knowledge and pedagogy to ITE programmes
   c. both of the above
   d. neither of the above
   e. other (please describe).

3. Do you consider a minimum of 14 NCEA L2 credits in 'Mathematic and Statistics' and/or 'Pāngarau' as a measure of mathematics competence is:
   a. too low
   b. too high
   c. about right.

4. If primary ITE candidates could also demonstrate competence by passing a prescribed assessment, do you agree that the assessment used should be common across all primary ITE programmes?
   a. Yes
   b. No
   c. Unsure.

5. If providers could admit candidates to a primary ITE programme prior to these formal demonstrations of competence in mathematics, so long as they passed before graduating, should this be allowed:
   a. not at all
   b. as a transitional provision for 2025 only
   c. as a transitional provision for 2025 and 2026 (Teaching Council proposal)
   d. for a longer transition
   e. permanently.

6. If providers were able to use discretion to admit any candidate, as outlined in question 5, do you agree that it would be important for providers to undertake a formative assessment of a candidate's mathematics competence to ensure the candidate was likely to pass the specified mathematics assessment?
   a. Yes
   b. No
   c. Unsure (please describe).

7. If you answered Yes to Q6 should this be included as a requirement?
    a. Yes
    b. No
    c. Unsure (please describe).

8. Do you consider that bridging programmes and similar forms of assistance should be made available to prospective ITE candidates?
    a. Yes (please describe)
    b. No
    c. Unsure.

9. Are there any barriers to ITE providers delivering bridging programmes in mathematics? Please describe any specific changes that you would want to see.
    a. Yes (please describe)
    b. No
    c. Unsure.

10. Are there any barriers to prospective ITE candidates undertaking a bridging programme in mathematics? Please describe any specific changes that you would want to see.

a. Yes (please describe)
b. No
c. Unsure.

Appendix 2: Key stakeholder response summary

Respondent	Key points
NZ Council of Deans	• The **overall response does not** support using 14 NCEA L2 credits for entry. • **Questions the evidence base** that mathematics capability of primary teachers needs to be strengthened, or that changing the level will lift student achievement levels. • Mathematics knowledge needed by primary teachers **does not align with mathematics content** in proposed NCEA level. • Concern about **potential for negative effect on teacher supply**, and workforce **diversity** (especially reduction in Māori, Pacific and low-income applicants. • Could undermine or discourage 'career changers'. • The focus on mathematics courses at school could **reduce senior student exposure to arts, sciences and languages** – reducing their breadth of capabilities. • **Support** the option of a **standardised national assessment** – based on required foundational knowledge needed. • Such an **assessment should not be an entry barrier** but achieved before graduation. • The assessment could be used where other entry standards are not met and students offered **several opportunities to meet the standards** if needed.

NZEI Te Riu Roa	• The **overall response does not support** using 14 NCEA L2 credits for entry.
	• The **ITE system is robust, well managed and monitored** and produces confident and skilled teachers.
	• **Agrees numeracy is a key skill** and that primary mathematics teachers need to have excellent content knowledge.
	• NCEA **L2 mathematics** is **not correlated** with more **effective primary mathematics teaching.**
	• The change would likely **exacerbate workforce pressures and decrease diversity.**
	• Supports current and future **primary teachers being supported to extend their mathematics knowledge** in a well-resourced and sustainable way.
	• Concerned the **change is being rushed**, is based on misleading information and undermines the teaching profession.
	• Notes this is occurring in context of multiple changes and workforce shortages.
	• To the specific survey questions:
	  ○ Notes that **ITE providers have not called for change** in this area – therefore **does not agree to most of the questions** and sees the issues as ones for ITE providers to resolve.
	  ○ Sees **14 L2 credits as too high** and **not aligned with the foundational content** primary teachers need (references research).
	  ○ **ITE providers should determine any common alternative assessment**, providers to undertake formative assessments and allow passing prior to graduation, and this **provision should be retained permanently** at the discretion of the provider.
	  ○ Agrees **bridging programmes should be available and free** to students.

TEFANZ	• **Opposes the proposed change** and sees it as a poorly thought-out response to a perceived crisis that will have negative consequences for ITE and the workforce in both the short and long term.

	• Disappointed that Teaching Council response does little to change the proposal. • **NCEA L2 mathematics is not directly relevant for primary teaching** and not evidence-based. • Numeracy credits draw from a limited pool of subjects - mostly from accounting, mathematics, statistics or physics (compared to literacy). • It also **exceeds the UE requirement** of 10 credits and L1 or above and **will likely reduce applications.** • The proposal assumes Year 11 students will have decided on a teaching career and have more than UE entry requirements. • Significant **risk of increase in workforce shortages and decrease in diversity.** • Concern about timing and pace of change. • Quick poll of 2 ITE providers suggests significant reduction in enrolments at proposed level. • **Recommends a collaborative approach developed by ITE providers**, drawing on experience and evidence e.g. a standard compulsory course covering what is needed for primary teaching to be passed prior to or within first year of study.
Te Rito Maioha Early Childhood New Zealand	• **Supports overall intention to strengthen mathematics capability** of new kaiako but **proposal to demonstrate competency prior to entry not supported.** • Proposal likely to discourage potentially strong candidates – **affecting workforce number, quality and diversity.** • Would **set primary teaching apart from ECE and secondary,** that is, different entry levels, thus undermining the requirement to meet the same standards across the profession. • If the **problem** is that tauira are not well prepared this **needs to be fixed in ITE not pre-entry.** • **Better for ITE providers to** identify needs and **support tauira through their programmes** and prior to graduation. This also avoids further disadvantaging any particular groups. • Current mathematics requirements are consistent with other OECD countries. • **L2 NCEA mathematics** aligns with content taught at Years 9-11 but is **not a good fit with foundational mathematics** content needed by primary kaiako. • **Agree an alternative assessment tool could work**. • **Agree providers could admit candidates on provisional basis, and this should be a permanent setting**. But note this comes with some complexity needing careful management (ethics considerations etc). • If mathematics competence must be demonstrated prior to/as a condition of entry, **bridging programmes may be needed**, especially to not lose potential applicants. Who pays and note developing/ NZQA approval/ delivery issues arise. • Likely to be regarded as **another barrier to entry by potential applicants** (cost/deferred income/time). • Potential **reduction in applicants may make some ITE courses marginal** or uneconomic, thereby affecting potential pipeline of new kaiako, especially in context of teaching not perceived as a desirable profession. • Likely to also **disadvantage applicants** who **do not come straight from secondary** school. • **Disputes** assumption of an **oversupply of primary kaiako.**
Te Whakarōputanga kaitiaki kura o Aotearoa | NZ	• Agrees **ITE programmes need strong numeracy capacity and capability** to teach. • **Supports** demonstration of mathematics competence **prior to entry**, and **14 L2 credits about right.**

School Boards Association **Formerly NZSTA**	• **Agree** with an **alternative assessment across providers** and this should be **transitional for 2025 & 2026.** • **Agree** with **formative assessmen**t and **pass prior to graduation.** • **Agree bridging programmes** should be made available, seeing **no obvious barriers** other than provider capability and capacity.
University of Canterbury Faculty of Education	• Shares the vision of high-quality teaching but **opposes the proposal,** as it lacks an empirical basis. • **NCEA L2 does not equate with knowledge needed in primary setting**. Research has already established the appropriate level. • Most schools have mathematics as a compulsory subject at Year 11 so **L1 is appropriate.** • What **prospective teachers need to know is how to reconstruct mathematics knowledge, not specific content knowledge.** • **Proposed level would become a barrier**, especially to those with life experience as well as Māori and Pacific. • Would undermine our international reputation of quality primary teaching. • **Prefer an alternative pathway** approved for/by each ITE provider **with mastery demonstrated prior to graduation.** • Potential for system/technical issues with **access to NCEA results.**
University of Canterbury **Pacific Development Team**	• **Agrees** with goal of prospective **teachers having strong foundation in mathematics** for effective teaching, but **very concerned about potential negative effect on Pacific** applicants. • **Pacific students historically underserved by education system;** 14 L2 credits may disproportionately affect Pacific students, reducing numbers in ITE and **exacerbating inequities.** • Proposed level does not recognise cultural and contextual relevance of Pacific values and pedagogical approaches. • May **disadvantage students whose strengths and learning styles aren't captured by NCEA assessments.** • Is **contrary to the system shifts signalled in** *The Action Plan for Pacific Education 2020-2030.* ○ Recommends an **approach appropriate for Pacific people** including: flexible entry pathways, support mechanisms, consultation and collaboration, monitoring and evaluation. • Advocates for a balanced approach that upholds academic standards and high expectation while also promoting equity and inclusion for Pacific peoples.
Victoria University, School of Education	• **Agrees primary teachers need a strong foundation** in mathematics to support their students. • Research shows reduction in numbers studying algebra and calculus at L2 so **potential pool of applicants is shrinking.** • Suggest longer programmes for primary as alternative. • **Proposal lacks strong evidence base**. ERO report had very small numbers, not representative. • Given i**mperative for teaching profession to reflect society** – needs greater diversity, but **new requirements are likely to be a barrier for those underserved**, especially Māori and Pacific – additional resourcing may be needed. • **Knowing how to do mathematics** isn't sufficient preparation for **being able to teach mathematics** – **ITE providers would need resourcing** to help bridge the gap. • **Victoria Uni applicants must pass numeracy test that aligns with L4&5** of curriculum- reflecting a **suitable level for primary teachers** to teach mathematics.

	• Questions appropriateness of **L2** as it **is more abstract.** • **Mathematics content knowledge is not the only consideration**. Teacher confidence in own mathematics ability is important. A **L2 requirement could undermine confidence of potential applicants.**
Ministry of Education	• **Supports intent to raise entry standards** so teachers are better equipped to teach and learners have improved achievement in mathematics. • Proposal that test is **pre-entry denies opportunity** for students to **improve their capability during their course.** • Notes possible **impact on workforce supply** – modelling suggests a **potential 30% drop** in eligibility **among school-leavers**. • Primary teacher supply challenges likely to exist in hard-to-staff areas (small/rural and high equity index schools) with schools potentially engaging staff on LATs i.e. not trained teachers or non-primary trained teachers. • **Māori and Pacific applicants** likely to be **disproportionately affected** as less likely to study mathematics/statistics in senior years (67% and 68% respectively lower rates). • If workforce supply is affected **potential over-reliance on overseas-trained teachers** in short-medium term. • **Bridging programmes** potentially a good idea but will have **resource and logistics implications for ITE providers.** • **Questions** whether **proposed NCEA level is a suitable benchmark** for primary ITE entry in the context of curriculum requirements.
Key points from individual submissions	

Respondent A	• **Agrees mathematics teachers** in primary and secondary settings **need robust content knowledge.**
	• **Disputes** implied assumptions that the **scale of current challenge** is significant and **needs an urgent response**; that student **achievement data is linked to capability** of primary mathematics teachers; that the **mathematics capability of primary teachers needs strengthening.**
	• Proposal has implications for:
	  ○ **content**: respondent's ITE provider has researched foundational mathematics needed for primary teaching, and this does not align with NCEA L2 (primary needs are much broader)
	  ○ **supply**: potential negative effect on number of applications for primary teaching (and flow-on effect for ITE providers) and disputes 'oversupply' of primary teachers
	  ○ **equity**: more Māori and Pacific teachers needed to help address underachievement among Māori and Pacific students – but proposal likely to have opposite effect
	  ○ **schooling**: some schools separate mathematics and statistics at Year 12 and 13 leading to even less alignment with needs.
	• **Agrees** preservice teachers **should undergo standard prescribed assessment** as a screening tool prior to entry (needing a particular grade to enter depending on course).
	• **Notes 15 years of data** shows that 40-50% of students 'pass' LNAAT assessment on entry but nearly all pass by time of graduation**.** Support provided to students who did not reach required level on entry or throughout the programme.
	Alternative proposal:
	• Allow **open entry to ITE using university entrance** requirements.
	• **Assess all students with TC approved national assessment**, free to providers & students.

	• Allow **multiple chances to meet specified assessment standards** throughout ITE programme. • Pre-service teachers to **meet standard prior to graduation.** • Fund **ITE providers to design courses**/papers for pre-service teachers **to grow mathematics content and build student relationships with mathematics.** • Note assessment tool may need updating if curriculum requirements change.
Respondent B	• Overall response **does not support proposed NCEA levels** as **inadequate match to curriculum** and questions analysis behind it (NZ score above OECD average in mathematics). • **ITE providers already have processes in place** to assess applicants, allow alternative pathways and provide support where needed - these could be strengthened. • Obligation to **teach to the curriculum already in place.** • **Supports alternative** pre/part **assessment** used formatively. • **Alternative option** could be for the **UE level to be reassessed** to ensure it is adequate. • Recommends **ITE providers collectively resolve any issues.** • **Bridging programmes** generally target readiness for academic study – not particular curriculum areas (as these covered in programme) so may be outside ITE. • Notes **potential funding and timing issues** for ITE providers around changes.
Respondent C	• **Recommends a holistic approach** and not setting separate entry requirements for different sectors. • Unintended consequence may be **'back-door entry'** to primary teaching via ECE – potentially further exacerbating the problem. • **Supports a pre-entry assessment** of mathematics competence. • **Questions proposed level.** • Notes other **options to support** better teaching, e.g. teacher:ākonga ratios. • **Supports common assessment** across ITE providers and **for a longer period.** • **Supports formative assessment.** • **Time and cost implications** for ITE providers and students. • **Bridging programmes.** • Sees implementation **timeframes as unrealistic.**

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