Year 14 Students

NZSSRA impact assessment
for School Sport NZ

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Introduction

School Sport NZ is engaging with its membership about the topic of Year 14 students in rowing (and more generally, in other codes). To try and ensure the discussion is an informed one, SSNZ put a series of questions to NZSSRA:

- What evidence is there to show that having Year 14s impacts the outcome of competition? For example, in the Maadi Cup, how many crews with Year 14s have been on the podium? Is there a consistent trend of this being the case over successive years? Does it differ between individual boats vs crews? In other sports is there the same evidence in competition outcomes of having Year 14s participate?
- What percentage of Maadi Cup participants have been Year 14 students in recent years?
- What percentage of students in School Sport NZ sanctioned events (championship level) have been Year 14 students in recent years?
- Are these students concentrated in a few schools or in certain types of schools (e.g. state, independent, boys, girls, co-ed, rule, metropolitan) or is it more broadly distributed?
- Is preventing all Year 14s (including the who complete the year) necessary and proportionate to the problem we are seeking to address?

Normally NZSSRA would only be able to say: there are anecdotes, rumours, gossip, and speculation, but there is no evidence or hard numbers about Year 14 students rowing.

That is because NZSSRA does not usually capture students' Year groups. Year groups are irrelevant to eligibility and classification at NZSSRA Championships. School rowing is based on age-group classifications, not Year groups.

However, thanks to COVID-19, student Year group data is held for a tranche of students. That data was used to research answers to the questions raised by SSNZ. It sheds light on the realities of Year 14 participation in rowing.

An addendum was added to look at whether experience confers an advantage on Year 14 students. SSN did not ask NZSSRA directly about this. However, it has been raised by SSNZ in the context of the Year 14 topic, and NZSSRA has valuable data about it. SSNZ asked its members:

- What scientific evidence is there of [Year 14 students having a significant physiological advantage]? What does the scientific/academic literature say about athletic development during late adolescence (in rowing or other endurance sports)?

Summary

In relation to the questions raised by SSNZ, the following was established through researching students with known Year groups and their results at the past three years' Maadi regattas:

- There is no evidence to show that having Year 14s impacts the outcome of competition. Evidence is their performance is well inside, and spread across, the range of performance of other Under-18 students.
- The percentage of Year 14 Maadi participants in recent years is tiny. Based on available data, it is estimated an average of 0.19 – 0.29% students participating at Maadi will be Year 14 each year. If participation is restricted to pennant (non-Novice under-18) events then, based on available data, it is estimated an average of 1.30 – 1.84% of U18 students will be Year 14 each year.
- The percentage of Year 14 Maadi participants for NISSC and SISSC has not been researched in detail but will likely be smaller than for Maadi. Potentially as much as only 2/3 the size for Maadi.
- There no obvious concentration of Year 14 students, except perhaps in State Integrated schools.
- Preventing Year 14 students from participating is neither necessary or proportionate. That is unless they are considered in the same light as other students not usually at a school e.g. non-Domestic and transferring students. In that case action may be necessary but prevention would be disproportionate compared with existing School Team Eligibility Criteria limits for similar students.

Addendum

- There is no evidence in school rowing data of a physiological advantage for Year 14 students. These students compete in age-group racing against students of the same age. Being in their fifth year of rowing confers no special advantage to a student. Not all Year 14 students are in their fifth year of rowing. The majority of students in their fifth year of rowing are Year 13.

Question 1

SSNZ has asked:

> What evidence is there to show that having Year 14s impacts the outcome of competition? For example, in the Maadi Cup, how many crews with Year 14s have been on the podium? Is there a consistent trend of this being the case over successive years? Does it differ between individual boats vs crews? In other sports is there the same evidence in competition outcomes of having Year 14s participate?

Answer

There is no evidence to show that having Year 14s impacts the outcome of competition. Year 14 students are Under-18 students and their performance is well inside, and spread across, the range of performance of other Under-18 students.

Year 14 on the podium

In the past 3 years there has been just 1 known* Year 14 student on the podium. That is 1 of a total of 4 known Year 14 students in that period. The student filled 0.46% (2/432) of the podium spots in pennant events (non-Novice under-18 events).

* *NZSSRA does not usually record students' Year groups because they are not relevant to eligibility or classification but Year group data is available from 2022 and thus available for 2023 and 2024 (see answer to question 2)*

Achievements

The most successful Year 14 student won two big boat medals, reached another big boat A final, and scratched a small boat. That student was in the top 8% of U18 results across the 3 years. The top 8% were students who won 2 or more medals.

The least successful Year 14 reached a D final (their only event). That student was in the bottom 8% of U18 results across the 3 years. The bottom 8% were students who only reached a D Final or were eliminated prior to finals.

The other two Year 14 students reached A finals (and a B Final). Those students are in the top 60%. The majority of U18 students reach an A Final. The most common outcome for U18 students is to reach an A Final but not reach the podium. 38% of U18 students achieved that and these two students were among them.

Trends

With only 1 student making the podium it is not possible to say there was a consistent trend. The number of known Year 14 students on the podium was: 0 in 2022, 1 in 2023, and 0 in 2024.

Trends: boat size

Although the sample size is only 1 student on the podium, that student was in big boats: a quad and a four.

Nevertheless, it is also possible to look at all the events the Year 14 students entered and what they manage to achieve in those events. Of the 10 events entered into by the 4 known Year 14 students there was:

- 1 single: the student reach a D Final
- 2 pairs: both were scratched
- 1 double: it reached an A Final
- 2 fours: both reached an A Final, 1 was a silver-medal winning crew
- 2 quads: one was a gold medal winning crew, the other reach a B Final
- 2 eights: both reach A Finals

On this basis, Year 14 students can be said to have the least success as individuals and more success in bigger boats (peaking in 4-seat boats then dropping off).

Trends: ability distribution

It is also useful to look at the distribution of the Year 14 students. That shows whether the number of Year 14s is increasing and/or whether they are doing better as the years pass.

The 4 known Year 14 students were distributed across the years: 0 in 2022, 3 in 2023, 1 in 2024.That is consistent with the number of Year 14 students fluctuating; rather than growing.

When there were 3 Year 14 students in 2023 they included the least and most successful of the 4 (plus 1 of the average students). When there was only 1 student in 2023, that student was one of the average students. This indicates Year 14 students display a range of abilities that is consistent with other U18 students and the more Year 14 students there are in a year the wider the range of ability they have.

Overall, the performance of Year 14 students is indistinguishable from other U18 students. They have no special impact on the outcome of competition at Maadi.

Question 2

SSNZ has asked:

> What percentage of Maadi Cup* participants have been Year 14 students in recent years?

Answer

Various answers are:

1. 0.00 – 0.14% of students are known to have been Year 14 over the past 3 years. But the Year group of not all students is known.
2. 0.00 – 1.12% of students whose Year group is known have been Year 14 over the past 3 years.
3. based on available data, it is estimated an average of 0.19 – 0.29% of students will be Year 14 each year.

However, Maadi is a whole-of-school Championships that caters for Years 7 – 14 students. Year 14 students would be able to cox in 32 of the 52 events. But they can only row in 20 of the 52 events. And there are only 12 pennant events, which are the U18 non-Novice events.

So, if we instead look at U18 students then the various answers are:

1. 1. 0.00 – 1.30% of U18 students are known to have been Year 14 over the past 3 years. But the Year group of not all U18 students is known.
2. 0.00 – 3.66% of U18 students whose Year group is known have been Year 14 over the past 3 years.
3. based on available data, it is estimated an average of 1.30 – 1.84% of U18 students will be Year 14 each year.

* *if the question is literally specific to the Maadi Cup event (B U18 8+) then the answer is 1 student is known to have been Year 14 in the past 3 years. That is 1/504 crew members = 0.20%. Their crew placed 7th.*

More detail

NZSSRA does not usually capture students' Year groups. That is because they are irrelevant to eligibility and classification at NZSSRA Championships. Nevertheless, NZSSRA is in possession of Year group data for a group of students. From that data it is possible to say:

- on average 4 schools each year may have a Year 14 student at Maadi
- any year the number of Year 14 students at Maadi is likely to be 4±4, consequently
    - average year: 4 Year 14 students attending Maadi would be 0.19% of students entered
    - big year: 8 Year 14 students attending Maadi would be 0.38% of students entered

- over the past 3 years, looking specifically at U18 students
    - average year: if 4 were Year 14 that would be 1.30 – 1.84% of U18 students
    - big year: if 8 were Year 14 that would be 2.61 – 3.69% of U18 students

Background

The Year group data that NZSSRA holds relates to Maadi 2022. In 2022 planning for Maadi was constrained by COVID-19 gathering size restrictions. For the regatta to be able to be held the usual number of students could not be accommodated. To achieve a workable regatta it was decided to exclude students below Year 11 from rowing.

For that reason, at Maadi in 2022, NZSSRA collected student Year group data. However, the Year group data was incomplete. That is largely because for many schools it was not relevant e.g. their squad comprised students too old to be Year 10.

School numbers

NZSSRA has a full set of student Year groups for 35 schools from Maadi 2022. That is 37% of the 95 schools that entered.

- In 2022 **none** of the schools had a Year 14 student.
- In 2023 **three** Year 14 students from 3 schools were revealed. They were identified by following the Y13 students from 2022 through to 2023.
- In 2024 **one** Year 14 student was revealed. They were identified by following the Y12 students from 2022 through to 2024. This was not a school that had a Year 14 student in 2023.

Across 3 years and 105 school appearances, 4 schools had a Year 14 student. That is 3.81% of schools having a Year 14 student.

When other entrant schools are included, over those 3 years there were a total of 312 school appearances. Extrapolating from the 3.81% we can guess 12 schools had a Year 14 student over the 3 years. That would be an average of 4 schools per year having a Year 14 student.

Student numbers

While the percentage of schools with complete data was low, that is not the whole picture. Year groups are known for 639 students from the Maadi 2022 data. That was 49% of the students entered that year.

- None of the students was a Year 14 student in 2022.
- Following the students through to Maadi 2023 revealed 217 returned. That was 12.8% of the students entered that year. 3 students were Year 14. That means 1.12% of known students were Year 14 and 0.14% of all students were known to be Year 14.
- Following the students through to Maadi 2024 revealed 102 returned. That was 4.8% of the students entered that year. 1 student was Year 14. That means 0.98% of known students were Year 14 and 0.05% of all students were known to be Year 14.

Under-18 Numbers

The number of students with a known Year group rapidly falls off across 2023 and 2024. That is because the total population of the regatta is increasingly made up of younger rowers who could not have been at Maadi 2022, as well as students new to rowing. However, when the focus is shifted to U18 then a more constant picture appears.

- Of the 639 students from 2022 with a known Year group 83 were U18.
- From the following year's 217 returning students 82 were U18.
- From the 102 students who returned in 2024 69 were U18.

Although the overall number of students with a known Year group is decreasing they are ageing up into U18. That means the number of known U18 is falling slowly and remains a good sample size. For 2022, 38.25% of U18 had a known Year group. In 2023 that was 35.50%, and in 2024 it was 22.48%.

We can extrapolate the number of known Year 14 students within U18 each year across the whole of the U18 for the year. That gives us 0 for 2022, 8 for 2023, and 4 for 2024. It is a total of 12 and an average of 4.

This is consistent with alternative estimates for the number of Year 14 students obtained based on school numbers. So we can reasonably guess there are 4±4 Year 14 students at Maadi each year.

In summary, when there is well over 2000 students at Maadi and only 4 of them are likely to be Year 14 this is a very tiny minority of competitors. Even at U18 level it is still a very small minority of competitors.

Question 3

SSNZ has asked:

> What percentage of students in School Sport NZ sanctioned events (championship level) have been Year 14 students in recent years?

Answer

NZSSRA has not researched this question but can provide an indicative answer.

The percentage will likely be smaller than for Maadi. Potentially as much as only 2/3 the size for Maadi.

Other sanctioned events

In addition to Maadi there are two other SSNZ-sanctioned events held by NZSSRA. Those are the North and South Island Championships. Two thing can be said about those regattas in relation to Maadi:

- Most, but not all, Maadi students will also attend NISSC or SISSC.
- About a third of students who attend NISSC or SISSC will not attend Maadi.

Basically, the total number of students at NISSC and SISSC combined is usually roughly 50% larger than Maadi e.g. 3k at NISSC and SISSC vs 2k at Maadi

If Year 14 students are unremarkable in their attendance patterns then:

- there will be Year 14s who attend NISSC or SISSC but not Maadi; and
- the percentage of Year 14 students at NISSC and SISSC will be similar to the percentage at Maadi.

That also means there will be about 50% more Year 14s than show up in Maadi data. However, if they never attend Maadi then they have no impact on competition at Maadi. Also, they are unlikely to have had any impact on the competition at NISSC or SISSC. That is because the better students do at NISSC or SISSC the more likely they are to also attend Maadi*.

* *Usually NZSSRA will only see NISSC or SISSC medallists absent from Maadi if they have been injured.*

Notwithstanding the above, if Year 14 students have a unique attendance pattern so that they are students who always attend Maadi then:

- the percentage of Year 14s at NISSC and SISSC will be 2/3 proportionally smaller than for Maadi

That is because there are no extra Year 14s at NISSC and SISSC but there are 50% extra other students.

Given the very small numbers for Year 14 students found for Maadi (see answer 2) the resources required to establish more precise figures for NISSC and SISSC have not been expended.

Question 4:

SSNZ has asked:

> Are these students concentrated in a few schools or in certain types of schools (e.g. state, independent, boys, girls, co-ed, rule, metropolitan) or is it more broadly distributed?

Answer

There no obvious concentration of students, except perhaps in State Integrated schools.

There are 4 known Year 14 students who have competed at Maadi over the past 3 years. The students come from 4 different schools, which is a small sample of the 152 schools that have been NZSSRA members during that period.

Types of school

Looking at the types of schools involved

- Secondary type: years 7-15×2, years 9-15×2
- Authority: State Integrated x 4
- School gender: Boys x 2, Co-ed x 1, Girls x 1
- Island: North Island x 3, South Island x 1
- Region: Auckland x 1, Canterbury x 1, Wellington x 1, Whanganui x 1
- Urban area: Major x 2, Large x 1, Medium x 1
- Religious ties: Anglican x 2, Catholic x 2

Much of this information has been sourced from https://www.educationcounts.govt.nz/.

Comparison with NZSSRA distribution

However, NZSSRA does record school gender and region (there are 9 NZSSRA regions). That means a comparison can be made between the schools with known Year 14 students and the overall proportion of the school types within NZSSRA.

Gender

- NZSSRA: Boys 20%, Co-ed 51%, Girls 29%
- Year 14: Boys 50%, Co-ed 25%, Girls 25%

Region

- NZSSRA: Auckland 19%, Canterbury 16%, East Coast 9%, Marlborough 5%, Otago 11%, Southland 3%, Waikato/Bay of Plenty 18%, Wellington 14%, Whanganui 5%
- Year 14: Auckland 25%, Canterbury 25%, Wellington 25%, Whanganui 25%

Unfortunately, it is unlikely the sample size is big enough to read much into the comparisons.

Question 5:

SSNZ has asked:

> Is preventing all Year 14s (including the who complete the year) necessary and proportionate to the problem we are seeking to address?

Answer

If the reason for banning Year 14 students from competition is premised on there being an advantage accruing to those students then the results demonstrated by the Year 14 students known to NZSSRA clearly show that ban would not be necessary and would be disproportionate. (See the answer to question 1 for the Year 14 students' impact on competition.)

If Year 14 do not have an advantage but are still unfair

It is possible the reason for banning Year 14 students is not about a supposed inherent advantage. For example it could be related to the students being "ringers". In this context "ringer" is used to describe a student who would not normally be expected to be representing the school that year, based on the school's initial membership.

In that case the answer is: action may be necessary but a total ban would be disproportionate.

This is based on the treatment of other students who would similarly not have been expected to represent a school i.e. non-domestic students, and transferred students. Those students are still allowed to represent their school but are subject to School Team Eligibility Criteria (STEC) limits.

A proportionate response to the matter of Year 14 students could therefore be to include them in the STEC limits.

Addendum

Broader discussion about Year 14 students by SSNZ include a suggestion that Year 14 rowers have a significant physiological advantage due to an additional year of training and physical development resulting in improved performances/results. It is argued this physiological advantage undermines the fairness of the competition.

SSNZ has asked its members:

> What scientific evidence is there of this view? What does the scientific/academic literature say about athletic development during late adolescence (in rowing or other endurance sports)?

Answer

NZSSRA has previously carried out research on whether the number of years a student has been competing confers an advantage. That research found a massive difference between students in their first and second years. Second year students are on the podium 3 times more than their first year counterparts. This is why NZSSRA has a Novice classification (for students in their first year of rowing).

However, the research found no significant advantage accruing to students through experience after second year.

Being involved in the sport longer provides more opportunity to benefit from great coaching, a sound training regime, and time on good water. Unfortunately, those things are not evenly distributed. That means the passage of time does not confer an inherent advantage.

Additional research determined Year 14 students have no extra experience beyond Year 13s. Most known Year 14 students had 5 year's experience but not all did. Year 13 students can also have 5 year's experience. The vast majority of students with 5 year's experience are Year 13 students.

Year 14 Experience and performance

There are 4 known Year 14 students who have competed at Maadi over the past 3 years. Of the 4: 3 were in their 5th year and 1 in their 3rd year. Not all Year 14 students are among the Under-18 students with the most experience.

The 3 Year 14 students who were in their 5th year were a representative sample of Under-18 performance. They included the Year 14 with best results, the Year 14 with the worst results, and one of the Year 14s with the most common Under-18 results. The student in their 3rd year was the other Year 14 with the most common Under-18 results.

Having more experience did not correlate to having better performance among the known Year 14 students. This is consistent with NZSSRA's wider knowledge about the limited correlation between experience and performance.

Maadi 2024

Due to the topic of experience being raised in the media during Maadi 2024 there is additional data available for that regatta. It was established 5% of Under-18 rowers at Maadi 2024 were in their 5th year of rowing. That was 16 students. Only 1 of the 16 students (6%) is known to be Year 14.

The majority of students who are in their 5th year, and therefore might benefit from the extra opportunities that provides, are Year 13 students. Although the Year 14 student at Maadi 2024 was a 5th year student they were also one of the average Under-18 students. That student achieved A Finals but not the podium.

Overall

As much as a small sample can do so, this confirms:

- Year 14s are more likely than average to be 5th year students (based on estimated Year 14 numbers)
- 5th year students don't have an advantage. Their range of performance is within, and spread across, the range of all Under-18s achievements (encompassing both top and bottom 8% outcomes)
- There is no significant advantage through passage of time for Year 14s. The 3rd year student did as well as, or better than, 2/3 of the 5th year students.