MINISTRY OF EDUCATION
TE TĀHUHU O TE MĀTAURANGA

He Whakaaro
EDUCATION INSIGHTS

Does streaming work? A review of the evidence

Summary

This He Whakaaro describes the evidence relating to fixed ability grouping, and in particular, streaming practices in Aotearoa New Zealand and around the world. These practices are widespread and longstanding in schools. This report summarises existing research literature on the impacts of fixed ability grouping, particularly streaming, on learners and the education system.

Fixed ability grouping and streaming practices are hindering our goal of delivering an excellent and equitable education system

KEY FINDINGS

- There is a large body of evidence that fixed ability grouping and streaming practices limit the opportunities, aspirations, expectations and subsequently learning outcomes of learners allocated to middle and lower ability groups.
- There is mixed evidence that learners in high ability groups are any better off when grouped or streamed by ability.
- On average, the risks of fixed ability grouping and streaming are outweighing the benefits in our education system.
- Research from Aotearoa New Zealand is mostly in English medium settings. Little is known about grouping practices in Māori medium.
- International evidence and local experience indicate Māori and Pacific learners are likely to more often be wrongly allocated to lower ability groups and streams. This is because group placement often happens not only based on prior achievement but on assumptions about ethnicity, socio-economic background, gender, and disability.
- Research indicates that more flexible adaptive approaches to differentiating instruction benefit all learners, mitigating the risks of streaming. Groups should be flexible, changing with learners' variable confidence with concepts, responses to instruction, interests, motivations and social connections.

A full bibliography for this paper can be found at https://www.educationcounts.govt.nz/publications/series/he-whakaaro/he-whakaaro-does-streaming-work-a-review-of-the-evidence

What is ability grouping?

Ability grouping refers to the range of different ways schools select and sort learners with similar perceived ability, achievement in testing, and/or engagement and motivation into fixed groups, classes or schools. Ability grouping differentiates instruction by narrowing the variation in ability within groups of learners, in order to tailor teaching to the needs of the group (Ansalone, 2010; Hornby and Witte, 2014). Prior achievement data or teacher perceptions of learners' potential ability are the most common basis for grouping. Each group is offered either different curricula, or the same curricula at different levels of difficulty.

Between-class ability grouping, known as 'streaming', is likely a familiar experience for learners in Aotearoa New Zealand secondary schools

Ability grouping occurs across multiple dimensions, and the literature covers all of these. The focus of this paper is horizontal ability grouping (where grouping occurs within year levels) within schools, which occurs between classrooms and within classrooms. Learners can also be grouped by ability across different grade levels (vertical grouping) or between different schools within the overall system.

Between-class ability grouping is when the measured lowest-performing and highest-performing learners are sorted into different classes. Learners can be grouped for some or all subjects. The most familiar ability grouping experience to Aotearoa New Zealand learners is likely between-class ability grouping. This is commonly known as 'streaming', but is also referred to as 'tracking,' 'regrouping,' 'banding,' or 'setting'.

Learners can also be grouped by ability within classes. **Within-class** grouping is where a mixture of learners in the same class are grouped into smaller fixed groups based on a measurement of their ability for specific lessons or topics.

Many research studies do not consistently separate within-class from between-class ability grouping, so this report describes research on the effects of both types. However, where researchers do make a distinction, we will particularly focus on between-class grouping/streaming.

How common is ability grouping?

International studies such as the Programme for International Student Assessment (PISA), Trends in Mathematics and Science Study (TIMSS) and the Progress in Reading Literacy Study (PIRLS) provide snapshots of the frequency at which schools and teachers are streaming and ability grouping. Overall, these studies show that Aotearoa New Zealand uses ability grouping far more often than most, and in some cases, almost all other countries (Caygill et al., 2016; Education Review Office, 2013; Martin, 2016).

Most Year 5 learners have teachers who group learners of perceived same ability within their classes when teaching mathematics and reading. Between-class ability grouping was less common than within class at primary school. In 2018, two-thirds (67%) of Year 5 learners had teachers who same-ability grouped half their mathematics lessons or more and in 2015, 83% had teachers who same-ability grouped in their reading lessons 'often' or 'always or almost always' (Rendall et al., 2020; Medina 2019). In 2015, Aotearoa New Zealand had the second-highest proportion in the Organisation for Economic Co-operations and Development (OECD) of Year 5 learners who work in same-ability groups in half their reading lessons or more, and in 2018 the third-highest proportion in maths lessons (Rendall et al., 2020; Medina 2019).

Over 90% of 15-year-old learners in Aotearoa New Zealand attend secondary schools which use ability grouping or streaming (OECD, 2016b; Medina, 2019). In secondary schools, a measurement of ability is often used to stream learners between classes, but ability grouping within classes is much less prevalent (Medina, 2019). Aotearoa New Zealand is in the top ten countries that use

streaming between Year 9 maths classes (Medina, 2019). In 2014, 70% of Year 9 learners attended schools that had general policies to stream maths classes and almost half (47%) of Year 9 learners were streamed for science classes (Medina, 2019).

There is very little large-scale systematic research into grouping practices used by kaiako in Māori medium education. Research by Bishop and colleagues (2001) indicates that when working with bilingual learners, learners' fluency in te reo Māori is a common basis used to form within-class groups, though published research does not provide clear indication of how flexible these groups are. Bishop and colleagues (2001) reflect that effective kaiako adapt their instruction to the level of each learner using practices – including grouping practices – that are culturally legitimate to Te Ao Māori.

Why do schools use ability grouping?

The most common rationale for creating groups on the basis of ability is that it is a way for schools and teachers to provide targeted instruction to a group of learners that corresponds with their level of ability (Ansalone, 2010).

Ability grouping is used to make whole-class instruction easier because teaching is set at an average level for the group

Hornby and Witte (2014) found that Aotearoa New Zealand secondary school teachers perceived the following benefits of ability grouping:

1. Targeting teaching to meet the educational needs of learners within limited resources.
2. To enable more 'able' learners to be challenged or extended.
3. To meet the expectations of parents.

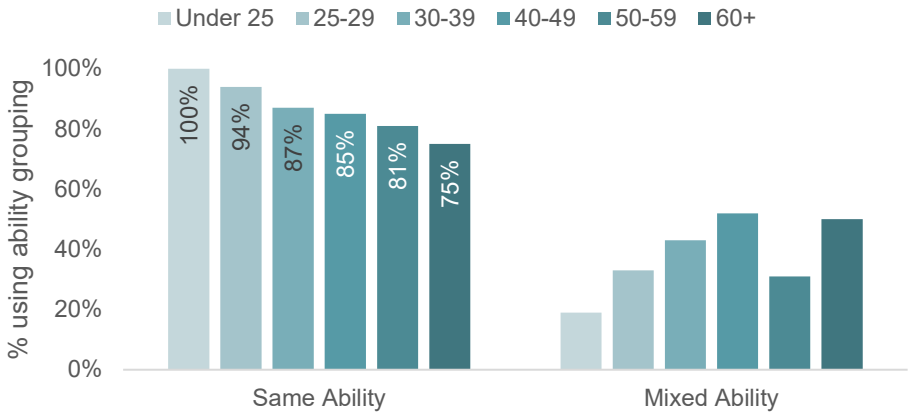
Targeted teaching to meet diverse learner needs within limited resources

Teaching diverse learner populations relies heavily on teachers' capacity and capability to engage students with a wide range of abilities and backgrounds, which can be challenging (OECD, 2016a). In theory, creating similar ability learner groups allows teachers to direct instruction to the needs of each group, maximising the learning potential of each group. This is perhaps because learning is cumulative, making it difficult to work with groups of learners with a wide range of knowledge and abilities (Golds, 2014).

Anthony and Hunter (2017) surveyed 102 primary teachers in New Zealand and found that targeting instruction to students with similar needs and abilities was a recurring reason in support of using fixed ability grouping. Other studies show that most teachers of mathematics have a positive attitude towards ability grouping (Burris, Heubert & Levin 2006; Golds, 2014; Tieso, 2002).

PIRLS and TIMSS data indicate a relationship between teacher tenure and grouping practices for Year 5 maths in Aotearoa New Zealand (the subject areas where same ability grouping happens the most). Younger and less experienced Year 5 maths teachers use within-class same ability grouping more often, and mixed ability grouping less often, than their older and more experienced peers (Figure 1; Medina, 2019). This might indicate that using ability grouping makes teaching classes of diverse learners more manageable, which is supported by Boaler's (1997) qualitative findings with mathematics teachers in a UK secondary school.

Figure 1. Proportion of Year 5 maths teachers using ability grouping practices in half their lessons or more, by age of teacher



Source: Medina, 2019.

Extending and challenging more 'able' learners

Hornby and Witte (2014) found in interviews with schools that there was a perception of positive effects of streaming for gifted and talented learners (and for learners with disabilities and/or learning support needs).

Any advantage of ability grouping for high achieving learners – who are presumed to benefit most – is likely to be minimal

There is mixed evidence that fixed ability grouping or streaming extends and challenges high achieving learners beyond other pedagogies (Preckel et al., 2019; Smale-Jacobse et al., 2019; Francis et al., 2020). Any advantage that is transmitted to high achieving learners is likely to be minimal (Hornby & Witte, 2014; Loveless, 2009; Hattie et al., 2017; Tieso, 2002).

Integrated effect sizes from 172 studies used by Steenbergen-Hu and colleagues' (2016) second-order meta-analysis for learners in high ability groups were not statistically significant for between-class ability grouping (streaming), but small to moderate in the positive direction and statistically significant for within-class ability grouping. Effect sizes calculated by Hattie's (2009) meta-analysis of 500 studies suggest that learners in higher ability streams are most likely to benefit from between-class streaming, but this benefit remained small. Effect sizes for within-class ability grouping were more positive for all ability groups and most positive for high ability groups. However, neither of the above analyses separated fixed from flexible ability groups (Hattie, 2009; Steenbergen-Hu et al., 2016).

Preckel and colleagues (2019) found high-achieving learners who were separated into 'gifted' classes had an accelerated learning trajectory compared to similar learners in other classes in the most academically oriented German secondary schools. Some studies have found that during the transition away from ability grouping and/or streaming, high-achieving learners' performance decreases (Loveless, 2009).

How does fixed ability grouping disadvantage learners?

Research has found learners in lower streams often have "less opportunity to learn because of less demanding curricula, lower instructional quality, lower expectations and lower levels of educational resources" (Chmielewski et al., 2013). These differences in opportunities can affect achievement and aspirations of learners (Hanushek & Woessmann, 2005; Rubie-Davies et al., 2020).

The following discussions amalgamate seven key explanations (described by Francis et al., 2017) of how fixed ability grouping can harm the progress of

learners at all levels, into three broad mechanisms. The arguments are inseparable from each other, with each reason combining to create a self-fulfilling prophecy that reproduces patterns used to justify streaming (Francis et al., 2017; Spina, 2019).

Wrongful allocation into and lack of movement between fixed groups and streams

Despite best intentions and assumptions of fairness, the way that learners are assigned to ability groups in practice is often flawed. Ability grouping using learner achievement data is accepted as an objective unbiased practice (Reis & McCoach, 2000; Ansalone, 2010; Datnow & Park, 2018; Spina, 2019; Francis et al., 2017). However, within-class ability group or between-class stream placement is not made based on prior achievement data alone – whether explicitly or implicitly, gender, class, disability and ethnicity can also play a role (Wilkinson & Penney, 2014; Francis et al., 2017).

Dunne and colleagues (2007) found that half of learners they identified as having low prior achievement scores had been placed in middle or high streams by schools for English lessons. They concluded that prior achievement data was a poor predictor of stream placement, but socio-economic status (SES) was a significant predictor of stream placement (Dunne et al., 2007). Tach and Farkas (2003) found that if fixed ability grouping was being used upon starting school in the United States of America, behavioural characteristics of learners held the most weight over their placement in ability groups. Only one Aotearoa New Zealand school in PIRLS 2015/16 used only prior achievement data to assign Year 5 learners to reading groups or classes; most schools used both prior achievement data and social reasons to assign learners to groups (Medina, 2019).

Achievement on tests is not the only basis used to allocate learners to ability groups or streams, despite perceptions of objectivity.

Attainment data that is used to sort learners into ability groups or streamed classes is assumed to be unbiased and objectively neutral (Reis & McCoach, 2000; Spina, 2019). The collection, processing and reporting of data happens within the context of culture; this can advantage those whose culture informs the data cycle and disadvantage those whose culture does not (Datnow & Park, 2018; Wilks et al., 2018). Currently much of the attainment data we collect and report is grounded in a Western view of what success in education looks like – often accepted and unquestioned as “common sense” notions of “ability” (Wilkinson & Penney, 2014, pg. 421; Morphy, 2016; Francis et al., 2017). This contextualisation can exclude non-Western measurements and perceptions of success in education and therefore contribute to the marginalisation of learners of non-dominant cultures (Reis & McCoach, 2000; Morphy, 2016; Spina, 2019).

There is enough variation in learners’ abilities, achievement and learning needs between and within subject areas, and over time that there is likely to be significant variation within streamed classes. Therefore, it is not likely to be helpful to treat learners as identical even within the most stringent implementation of fixed ability grouping between-classes based purely on prior attainment data (Ireson, Clark & Hallam 2002; Lawrence-Brown, 2004; Wilkinson & Penney, 2014; Pozas et al., 2019). This standardisation creates the risk that individual learners falling outside the average for a given topic may fall through the cracks or lack challenge (Boaler, 1997; Wilkinson & Penney, 2014). Learners in Aotearoa New Zealand demonstrate diversity and variability across their interests, abilities, motivations, knowledge and experiences. These differences are often fluid over time, rather than fixed. Effective teaching within inclusive education settings require offering multiple entry points to allow for even the narrowest learner diversity (Pozas et al., 2019). However, Boaler (1997) observed that mathematics teachers conducted lessons as if the learners in their streamed classes were entirely identical (not merely similar).

A major problem with being allocated to the wrong ability group or stream is that it can be difficult to move between groups or streams. Where ability grouping starts very early in schooling, before learners have an academic record, this can impact the placements of learners in future (Tach and Farkas, 2003). Using streaming creates a rigid structure which means that curriculum and group continuity, timetabling and space constraints impact learners' mobility between streams , irrespective of their progress or attainment (Dunne et al., 2007; Dunne et al., 2011). There are very few instances of regular reassessment or reconsideration and subsequent re-grouping of learners between streams, sometimes even when teachers have identified learners who have been wrongly allocated to a stream (Wilkinson & Penney, 2014). Therefore, learners can be wrongly allocated into streams from a young age and have limited power to change their placement throughout their education experience (Wilkinson & Penney, 2014).

Expectations of teachers, learners and peers

Ability grouping and streaming publicly label learners, which can build on existing biases and unconsciously stimulate low expectations of groups perceived as low ability and vice-versa for groups perceived as high ability (Hattie, 2009; Anthony & Hunter, 2017; Atteberry et al., 2019; Boaler et al., 2000; Bolton, 2017; Datnow & Park, 2018; Francis et al., 2017; Mills & Keddie, 2012; Rubie-Davies et al., 2010). For example, one teacher response to Anthony and Hunter's (2017 pg. 83) survey stated that 'teachers have expectations about what [learners] can do dependent on what group they are in, rather than what they are doing.'

Ability grouping and streaming are creating preconceptions of learners' 'inherent' capability limiting their aspirations

Teacher expectations of learners are linked to their beliefs about the learning process and how knowledge is acquired. Fixed ability grouping and streaming practices are grounded in an assumption that ability to learn is fixed and can be fairly and accurately measured at a single point in time (Wilkinson & Penney, 2014; Francis et al., 2020). However, research has shown that the most motivated and resilient learners are those who believe the learning process is active and their abilities can be developed through their own effort (have a growth mindset; Hong et al., 1999). Learners who believed their abilities in mathematics could be developed through effort were more likely to score higher in NMSSA than learners who believed their ability to learn was fixed (Educational Assessment Research Unit, 2015 pg. 73).

Learners are aware of and respond to the expectations of others on them as a result of their placement in streams (Reis & McCoach, 2000; Alton-Lee, 2017; Rubie-Davies et al., 2020). Subsequently, learners placed in lower groups often have lower perception of and confidence in their academic achievement – academic self-concept (ASC) – which impacts their future motivation, progress and achievement (Chmielewski et al., 2013; Rubie-Davies et al., 2020; Schleicher, 2014). Learners' responses to the Kōrero Mātauranga survey were that when their experiences of streaming were negative, academic self-concept and aspirations were lower because of their placement in between-class streams (Ministry of Education, 2018).

Fixed ability grouping can socially ostracise some learners, create the basis for bullying behaviours, and compromise social skills, disrupting the learning community (Hattie et al., 2017). Learners' educational aspirations may be lower, as a result of the stigma created through publicly labelling learners by placing them in ability groups or streams (Hattie, 2009; Ball, 1981). Being wrongly allocated into a low ability group can drive learners who would otherwise perform highly to lose motivation and become disengaged in their learning, due to lack of challenge and low expectations (Reis & McCoach, 2000). Because of the detrimental impact on their aspirations, Ball (1981) found that learners placed in lower ability groups could develop anti-school dispositions and become disengaged from education.

Streaming can also have a negative impact on learners placed in high ability groups through high expectations, fast pace of lessons, and pressure to succeed

(Boaler & Wiliam, 2001). This may be especially true for those students who are wrongly allocated into higher streams. Chmielewski and colleagues (2013) found that in systems where learners were streamed across all subjects, learners in higher streams' academic self-concepts were lower than would be expected based on their achievement. Boaler (1997) found that learners in higher streams in a secondary school in the UK were disproportionately reporting that the pace of their mathematics lessons was 'too fast'. No Year 9 female learners and only 2 male learners in the highest streams included in Boaler's (1997) study described themselves as 'good' at mathematics.

Opportunities to learn

Some teachers convey their expectations to learners by delivering fast-paced and challenging work as well as more feedback to high ability streams, while lower ability streams more often receive rote instruction at a slow-pace covering less of the curriculum (Boaler, 1997; Mills & Keddie, 2012; Francis et al., 2017; Rubie-Davies et al., 2020). Chorzempa and Graham's (2006) survey similarly found in US classes using within-class ability grouping, lower groups spent less time reading silently or answering critical comprehension questions than their classmates in high ability groups. Lower ability groups spent more time on non-reading tasks or working on worksheets and had less opportunity to select their own reading material than high ability groups (Chorzempa & Graham, 2006).

Curriculum adaptation delivering more vocationally oriented curricula to lower streams (as opposed to full academic curricula) limits the future educational opportunities of learners in lower streams. Preventing learners in lower groups from accessing the entirety of the curriculum has been described as 'gatekeeping' of the pathways that lead to high skill, high pay, professional careers (Atteberry et al. 2019; Tokona Te Raki, 2021).

Although attractive in theory, ability grouping can often limit learners' opportunities in practice

If student sorting is related to teacher sorting, such that high-ability groups are matched to the most experienced teachers, learners in lower-ability groups may be relegated to lower-quality instruction (Schleicher, 2014). A common theme throughout the literature on streaming is that teachers perceived as lower quality tend to be placed with lower-ability groups (Golds, 2014, Kelly 2004). Lower streams are more likely to be assigned less experienced, less qualified teachers who aren't subject specialists, and without deliberate planning, lower within-class ability groups may receive less attention from the teacher (Kutnick et al., 2005). An Education Review Office (2013) report found that many schools assigned teacher aides (the least qualified adults) to work with learners who were below or well below the expected mathematics standard, with little evaluation of whether this accelerated the progress of these learners.

Grouping higher-achieving learners together limits the opportunity for lower-achieving learners to benefit by learning and receiving support from their higher-achieving peers (Schleicher, 2014). Grouping underperforming learners together risks exacerbating their struggles with classwork (Epple, Newlon & Romano, 2002).

Does ability grouping or streaming achieve our goals for our education system?

Our goals for our education system are to deliver excellence and equity for learners. Streaming as it currently operates in Aotearoa New Zealand schools, is incompatible with the provisions of te Tiriti o Waitangi | The Treaty of Waitangi and therefore the obligations of school boards under the Education and Training Act, 2020 (Pomeroy et al., 2020). The Royal Society | Te Apārangi Expert Advisory Panel (Martin et al., 2021) on Pangarau Mathematics and Tauanga Statistics has recommended the cessation of within- and between-class ability grouping to maximise exposure to excellent learning opportunities equitably for all learners.

Excellence

There is relatively little evidence that within- or between-class ability grouping substantially improves average academic achievement overall. A meta-analysis by Hattie (2009) found, of 138 total factors examined for their impact on learning outcomes, between-class streaming ranked 121 and within-class grouping ranked 116.

According to studies of PISA data, no statistically significant relationships could be found between ability grouping between- or within-classes and the academic outcomes, on average, of 15-year-olds in Aotearoa New Zealand (Medina, 2019). Ability grouping may be linked to weaker learner performance on average across countries (Schleicher, 2014). Learners in schools where no ability grouping is practised scored eight points higher in mathematics in 2012 compared to their counterparts in 2003, while learners in schools where ability grouping is practised in some or all classes had lower scores in PISA 2012 than their counterparts in PISA 2003 (Schleicher, 2014). The proportion of low performers is larger in schools with more ability grouping (OECD, 2016a). Similarly using TIMSS data, Huang (2009) found that when class groupings were more similar in performance there was no improvement to mean performance of countries.

There is no clear consensus in the literature that within- or between-class ability grouping substantially improves achievement even of those learners presumed to benefit most: high-ability groups (Ansalone, 2010; Hornby & Witte, 2014; Steenbergen-Hu et al., 2016). For example, Hong and colleagues (2012) found that there was no benefit of higher intensity ability grouping for either higher ability or lower ability grouped early school learners' literacy, especially if instructional time in the subject of interest was low. Atteberry and colleagues (2019) found that there was no drop in achievement of top performing learners after a school district in Maryland, USA had stopped using streaming practices.

Learners of low socio-economic status and minority ethnicities are most often unfairly allocated into low ability groups or streams

Equity

There is a self-reinforcing effect as learners in low-ability groups are precluded from those opportunities to learn which are restrictively delivered to high-ability groups, further increasing any inequality of achievement and behaviour outcomes that existed before streaming took place (Gamoran, 1992; Skidmore, 2002; Tach & Farkas, 2003). Tach and Farkas (2003) found that the within-class ability group level of learners in their first two years of school was a more significant predictor of their academic gain than their prior academic performance. Learners in higher ability groups had more positive academic outcomes over and above their peers in lower ability groups. Data from PISA shows that in Aotearoa New Zealand, as well as having high prevalence of ability grouping and streaming, the gap between the highest and lowest performers is one of the biggest of all countries surveyed (Schleicher, 2014; Bolton, 2017). This is consistent with the findings of international research by Huang (2009) using TIMSS data that found negative impacts for lower-performing learners when class groups were more similar in performance.

Research has found that learners from socio-economic disadvantage and marginalised ethnic groups are disproportionately (wrongly)allocated to lower ability groups and streams relative to what should be expected based on IQ tests or prior achievement data (Jackson, 1964; Dunne et al., 2007; Wilkinson & Penney, 2014; Francis et al., 2017). Ability grouping is linked to segregation of opportunity to learn according to socio-economic status and ethnicity (OECD, 2016b). In an Aotearoa New Zealand survey, no advantages from ability grouping and streaming seemed to be identified by schools for learners of average ability, Māori learners, Pacific learners, or learners with English as a second language (Hornby & Witte, 2014).

In Aotearoa New Zealand, socio-economically advantaged learners are more likely to be exposed to pure mathematics than socio-economically disadvantaged learners (OECD, 2016b).

The impact on Māori and Pacific learners is likely to be greater as evidence has indicated that marginalised ethnic groups are more likely to be allocated to lower classes. In 2019, the opportunity to learn mathematics for one-third of Year 11 Māori learners, who are disproportionately allocated to lower streams, was limited by not being entered in a full NCEA mathematics course (Tokona Te Raki, 2021). Māori and Pacific learners have long been culturally 'othered' creating a 'deficit-orientation' held by our education system, which is perpetuated by the patterns created by restrictions on opportunities to learn through fixed ability grouping and streaming (Mills & Keddie, 2012; Bolton, 2017; Tokona Te Raki, 2021). Turner and colleagues (2015) found that teachers have lower expectations of Māori and Pacific learners than Pākehā and Asian learners and these expectations are informed by stream placement. Negative assumptions of learners' backgrounds were ascribed to Māori learners but were less often made about Asian or Pākehā learners who underachieve (Turner et al., 2015).

Streaming contributes to socially constructed patterns of achievement and underachievement which are in turn used to justify the use of streaming (Ansalone, 2010). The more rigid and inflexible the ability grouping system, the more likely these patterns are to emerge (Gamoran, 1992; OECD, 2016b). Inequalities of education outcomes have flow-on effects for equality of outcomes later in life at a disadvantage to social systems (OECD, 2016b). As a result of this accumulation, researchers argue that streaming is a sanctified method of perpetuating social stratification (Oakes, 1985; Spina, 2019).

Are there other approaches that work better than streaming?

The Ministry of Education's priority is to support schools and teachers to implement highly effective, evidence-based practices for all learners. Hattie (2009) argues that because most school and teacher practices benefit at least some learners, effort should be invested in the approaches that provide the most evidence of impact. The responses to Hornby and Witte (2014) and Anthony and Hunter's (2017) surveys clearly indicate that teachers in Aotearoa New Zealand recognise their learners' diversity and have an appetite to cater for their needs.

Flexible grouping avoids the pitfall of ability grouping which creates fixed opportunities and pathways for learners

Hornby and Witte (2014) and Anthony and Hunter (2017) identified that one of the reasons schools use streaming is to meet the expectations of parents and whānau. Francis et al. (2017) also identify expectations of parents as a driver for continuing streaming in the English education system and that these expectations are patterned by socio-economic status. Tokona Te Raki (2021) described the experiences of four Aotearoa New Zealand secondary schools that have abolished streaming in mathematics classes. All four schools faced resistance from some whānau, but found that working closely with disaffected whānau eased the transition to the alternative approaches planned. All four schools subsequently reported positive outcomes for learner attainment, engagement and teacher-whānau relationships.

Planning lessons with Universal Design for Learning (UDL) and using flexible grouping are two ways that teachers have successfully managed mixed ability classes. Beginning with planning lessons with UDL teachers are proactively including all learners in the lesson by expanding the range of options that are available to all learners. Some schools are already using UDL as part of fostering an inclusive pedagogical approach. Then, by ensuring that groups are constantly reformed with new individuals as activities progress teachers are reducing the risk that lasting labels of learners' perceived ability contribute to 'gatekeeping' of opportunities to learn.

Universal Design for Learning (UDL) is a process of designing lessons that starts with considering each of the learners in the class. This lays the foundation for proactively designing the lesson to engage every learner with appropriate challenge as opposed to designing for a hypothetical 'average' learner and differentiating for individuals. Essential to creating an inclusive environment through UDL is that specific resources, options and supports are not made unavailable based on group placement; instead, all opportunities of a given lesson are available to any learner. Lessons planned with UDL offer learners multiple means of recognition, demonstration and engagement at varying levels of complexity allowing learners to have multiple entry points to a skill (Eagleton, 2019).

Getting to know each of the learners in their class and their whānau allows teachers to create options and supports that are relevant to the group. Evidence suggests that having a strong relationship with at least one classroom teacher has a positive effect for learners (Reis & McCoach, 2000; Hattie, 2009). The standard of inclusive pedagogies - including UDL - is that all tailored options and supports are available to any learner as opposed to singling out some learners who experience difficulty by assigning something different and denying higher level opportunities (Florian & Black-Hawkins, 2011; Waitoller & Thorius, 2016).

Although currently limited, emerging evidence suggests potentially promising results of using UDL principles on learner achievement, engagement and wellbeing (Al-Azawei et al., 2016; Capp, 2017). Crevecoeur and colleagues (2014) reviewed an emerging body of literature that indicated benefits to learner achievement and engagement were linked to the application of UDL minimising barriers to learning unrelated to content of lessons. Researchers generally agree that UDL shows promising results thus far and the direct impacts and relative importance of each of the principles deserve further attention. The results of Roski and colleague's (2021) analysis indicate that the principle of multiple representation may have been the most significant in developing learners' epistemic beliefs in science.

The Ministry of Education does not support fixed ability grouping; instead we recommend using inclusive pedagogies to raise everyone's achievement and wellbeing

In inclusive pedagogy, where grouping is used, it is flexible across time and in the numbers, individuals and roles assigned within a group situation. Learners could be grouped based on their interests, motivation, or by their own choice (McKeen, 2019), and move between groups as they learn or respond differently to instruction over time (Flood et al., 1992; Ford, 2005; Plucker & Callahan, 2020).

Achievement is still a dimension by which learners can be grouped in flexible grouping, the key difference being that groups are changing constantly rather than groups that are fixed and rarely move. But because the groups are flexible and change often, this practice minimises the risk of some learners being permanently labelled, wrongly allocated to groups or being unable to move between groups (Hattie et al. 2017; Plucker & Callahan, 2020).

Evidence supports using flexible grouping to manage learner diversity with proactive planning to ensure multiple entry points are available (Tieso, 2002). Tieso (2002) found higher effect sizes on assessment scores for learners in flexible small groups than those learners who were organised into fixed between-class streams. McKeen (2019) found that young learners in the US state of Georgia who were exposed to flexible grouping performed better on state testing and with a smaller gap between the highest and lowest achievers than learners who had not been exposed to flexible grouping. There was a greater proportion of high achieving learners in the sample who had been exposed to flexible grouping (McKeen, 2019).

By employing these planning and grouping strategies teachers facilitate their learners' collaborative knowledge production. Teachers report that learners take

responsibility for their learning and are better able to constructively evaluate their own and others' ideas (Skidmore, 2002; Ducey & Key, 2009; Anthony et al. 2016). This reflects a subtle difference in the role of the teacher as a facilitator or conductor of learning in an inclusive classroom community as opposed to a more traditional role of sole determiner or distributor of the knowledge that is given to learners (Skidmore, 2002; Bentley-Williams & Morgan, 2012).

Te Kete Ipurangi (TKI) website has a series of 29 practical guides for teachers who wish to improve inclusivity in their classroom communities. These guides help teachers recognise, plan for and meet the needs of all learners and are available at Inclusive Education | Inclusive Education (tki.org.nz). The body of research relating to UDL is still emerging but *Universal Design for Learning: Theory and Practice* (Rose and Meyer, 2014) is one comprehensive resource for teachers who wish to implement UDL. Exemplars of flexible grouping and cooperative learning in practice in a primary school class are also available at Developing Mathematical Inquiry Communities Hangaia te Urupounamu Pāngarau Mō Tātou | Education Counts.

Conclusions

Aotearoa New Zealand reports some of the highest rates of fixed ability grouping especially between-class ability grouping, 'streaming', as well as large gaps between the highest and lowest achievers. Fixed ability grouping has not helped close the achievement gap but may have perpetuated it by limiting some learners' opportunities. The Ministry of Education's position is that fixed ability grouping and streaming are not a recommended practice. Fixed ability grouping is inconsistent with the high expectations principle of national curricula, which aim to empower all students to learn and achieve personal excellence, regardless of their individual circumstances (Rubie-Davies, 2017).

Fixed ability grouping and streaming practices in our schools are hindering our goals of providing excellent and equitable education outcomes. Māori and Pacific learners are disproportionately harmed by these practices. We could more effectively raise all learners' achievement and improve wellbeing by using inclusive pedagogies and flexible grouping strategies.

Authored by Ariarne Davy

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