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REGULAR ARTICLE

The Equity of Class Ability Grouping Practices in Australian Education: Findings from a Survey in Western Australia and Queensland

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Abstract Grouping students into separate classes according to their 'ability' is an inequitable practice that does not, overall, improve academic outcomes. Research has continued to show that class ability grouping widens the educational gap between students from disadvantaged and privileged backgrounds. PISA data analysis suggests that class ability grouping continues to be used in Australian schools, at least in Year 10. However, no research has characterized the existing class ability grouping practices being used in secondary schools from Years 7 to 9. The findings reported in this paper add quantitative evidence to the literature, showing that students are experiencing different class ability grouping practices according to their year group, subjects, and locations. An across-state survey about class ability grouping was conducted with respondents from 143 schools providing data about the schools' class ability grouping practices. The findings reveal variations in how class grouping practices are used by schools in Australia that have been not captured in other research: Class ability grouping was activated differently in different schools, increased as students' year levels increased, was most prevalent in Maths and English, and was used more extensively in Western Australia than in Queensland. The findings use descriptive statistics to show that students in Australia are experiencing different grouping practices, with discussion of how some practices are more inequitable than others. This raises questions about how the varied forms of class ability grouping that are being employed are contributing to educational inequalities in Australia and how future research can address this problem.

Keywords Ability grouping · Tracking · Social equity · Secondary education

Introduction

International data collected by the OECD's Program for International Student Assessment (PISA) indicates that most Australian schools group students into classes by 'ability' during Year 10 of secondary school (OECD, 2014, 2018b). This practice is called 'class ability grouping,' and it has persisted in Australia despite clear findings from research over many decades that there is no overall academic benefit to students and that in fact many students are disadvantaged by the practice (Ansalone, 2010; Boaler et al., 2000; Hodgen et al., 2022; Ireson & Hallam, 2009; Slavin, 1987). Class ability grouping exacerbates the effect of student background on achievement at school, perpetuating pre-existing disadvantages, and increasing the educational achievement gap (Francis et al., 2020; Razer et al., 2018).

To date, there has not been any wide-scale quantitative research characterizing the extent to which class ability grouping is being used in Australian schools. Australian research about class ability grouping has tended to be qualitative, focusing on social equity issues or benefits for high ability learners (Johnston & Taylor, 2023). Some quantitative research has drawn on international PISA data that includes Australia to make comparisons between the effects of ability grouping in different countries (Johnston & Taylor, 2023). What is absent is empirical evidence that illuminates the scope and detail of class grouping practices

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being used across the country. Existing research does not provide data on across-state differences or provide detail about specific ability grouping practices. For example, when does ability grouping start and for which subjects? How is it used in Years 7–9, and how many 'levels' of class groups are students grouped into? The answers to these questions could provide details about how class ability grouping is practiced and in doing so highlight potential implications for reducing educational inequalities in Australia through changes to class grouping practices to being used.

The study presented in this paper addresses the need for quantitative research about how class ability grouping is practiced in Australia. A survey about class grouping practices from $n = 143$ schools in Queensland and Western Australia addresses this gap by characterizing grouping practices in terms of how, where, and when class ability grouping is used in Years 7–9 of secondary school.

Class Ability Grouping

This paper focuses on a type of ability grouping called 'class ability grouping.' The phrase 'class ability grouping' demarcates the practice from other forms of ability grouping to clearly indicate what this research is, and is not, about. This research is about ability grouping by class, not about ability grouping within the class or selective schooling. It focuses on practices where students are grouped into separate classes within the school according their 'ability.' Educators and the general public in Australia often refer to class ability grouping as 'streaming,' but this can evoke confusion for international audiences (Chmielewski, 2014). Words and phrases including 'tracking,' 'achievement grouping,' 'attainment grouping,' or 'course-by-course ability grouping' are also used to describe variations of class ability grouping across international contexts (Kaya, 2015; Regan & Jesse, 2019; Van Houtte et al., 2013). Previous research has found that more rigid forms of class ability grouping, such as streaming students for all classes in the same groups or inflexible tracking, are more inequitable than more flexible practices, such as subject-by-subject groupings or where students are only grouped for some learning areas (Chmielewski et al., 2013; Francis et al., 2020). Thus, it is important to be precise about the kind of ability grouping being described.

To address the language issues in ability grouping research, international research is increasingly adopting the term 'between-class ability grouping' to capture all variations of practices that group students into separate classes according to their 'abilities' (Papachristou et al., 2021). The phrase is simplified to 'class ability grouping' in this paper. The use of this phrase is especially practical in the Australian context where a broad range of practices are used including selective schooling, where whole schools are grouped by ability, and within-class grouping, where teachers form 'ability' groups within mixed-ability classes. Thus, the phrase 'class ability grouping' distinguishes ability grouping that organizes students into separate classrooms from other forms of ability grouping, which include grouping within the class, or selective schooling. The research presented here characterises class ability grouping during Years 7–9 in two Australian states.

International and Australian evidence cautions against the use of class ability grouping because it exacerbates social inequalities, segregating students into separate classes according to their backgrounds (Steenbergen-Hu et al., 2016). International comparative research findings show that countries that use class ability grouping have less equity in academic outcomes than countries with more mixed-ability classes, such as Japan and Finland (Luschei & Jeong, 2018; Parker et al., 2021). Researchers have investigated how class ability grouping has detrimental effects on equity outcomes because it increases the influence of students' socio-economic status (SES) background on academic achievement (Castejón & Zancajo, 2015). Students from lower SES backgrounds achieve less academically than their more privileged peers when they are grouped into classes by 'ability' (Castejón & Zancajo, 2015; Chmielewski, 2014). Others have found that class ability grouping increases the association between racial/ethnic background and academic outcomes, particularly for students from traditionally marginalized groups (Razer et al., 2018).

Students' placement into classes by 'ability' reflects the students' pre-existing educational advantages and disadvantages. The term 'ability' is often placed in quotations in this paper to acknowledge that that the concept is problematic and can be contested. 'Ability' is defined here a social and cultural construct that is used to group students into classes for learning, rather than an indication of any innate or 'natural' capacity that students may or may not have (Francis et al., 2017). Research increasingly lends evidence to critical consideration of notions of finite 'ability,' which can be associated with deficit thinking and assumptions about students' prior background and educational advantages/disadvantages (Clarke, 2014; Dweck, 2012; Hart et al., 2014). The history of 'ability' in education is not related to any fixed academic potentials – instead, 'ability' is a guise through which social and cultural power and privilege are preserved (Clarke, 2014; Hart et al., 2014). This problem is evident in the tools that are often used to assess student 'ability,' such as the difficulty in developing equitable and consistent instruments for identifying gifted and talented students (Thraves et al., 2021).

Notions of 'ability' are inextricably linked with students' backgrounds, including their SES and minority

group membership (Hart et al., 2014). When 'ability' is used to group students into separate classes, students with educational disadvantages become segregated into lower ability-grouped classrooms (McCardle, 2020; McGillicuddy, 2021). Thus, class ability grouping can widen the educational achievement gap between society's 'haves' and 'have nots' (Castejón & Zancajo, 2015; Hodgen et al., 2022). Such widening gaps are detrimental for equity in education, which is ultimately detrimental for a country's economic performance (OECD, 2018a). A recent study from England found that class ability grouping widened the attainment gap between students grouped in the highest classes for English and Maths (Hodgen et al., 2022). England is a country characterized in comparative PISA analysis as using similar methods of class ability grouping as Australia, but there has been no examination of how practices in Australia are affecting students (Schmidt et al., 2015).

In secondary schools, ability-based classes may be used for all or only some subjects and are more common for some subjects than others (OECD, 2018b). When schools choose to organize classes by ability, a wide range of approaches can be implemented. Variations have been reported based on which students are grouped for and at what age they are grouped (Johnston et al., 2022). Maths has often been the focus of ability grouping research because ability grouping is common in the subject (Jaremus et al., 2022). Further variations in class streaming practices include whether or not the students are in the same between-class ability groups for all, some, or none of their subjects. Previous research has found that these subtle differences can impact students' academic outcomes (Chmielewski, 2014), so they are important considerations for class ability grouping practitioners. Thus, further research that characterises the class ability grouping practices being used in countries like Australia is important.

Class Ability Grouping in Australia

Class ability grouping is used differently by different schools in Australia, with locally determined practices reported in the qualitative research (Johnston et al., 2022). Many primary and secondary schools use class ability grouping for one or more subjects (Black, 2021; Jaremus et al., 2022; Macqueen, 2013). Students in Australia begin primary school at age four or five and move to secondary at age eleven or twelve. They finish secondary school when they are seventeen or eighteen years old. PISA data report on practices in Year 10, but there are a lack of quantitative data about practices in Years 7–9 when students are eleven to fifteen years old.

International research using PISA data suggests that class ability grouping is more equitable when it is flexible and uses subject groupings, as opposed to class ability grouping that is less flexible where students are grouped the same way for all classes (Chmielewski, 2014). Previous international comparative research has suggested that the effects of ability grouping depend on the type of grouping being used, with rigid forms where students are fully streamed across all subjects less inequitable than 'course-by-course' grouping where students are grouped into different ability levels for different classes (Chmielewski et al., 2013; Razer et al., 2018). This language of rigidity is well established in the literature about ability grouping, which recommends softer approaches where students are grouped with flexibility and more mixed-ability classes are used (Francis et al., 2020). No research has explored the variety of class ability grouping practices being used in Australia in terms of their rigidity or other features. However, there is evidence to suggest a wide variance from small studies using qualitative methods (Johnston et al., 2022). New understandings can be gleaned from new knowledge about how class ability grouping is practiced within a single country, like Australia, on a wider scale.

There are some perceived benefits of class ability grouping in Australia, including a reduced load on teachers who hold perspectives that class ability grouping enables them to cater for a reduced range of student ability (Mills et al., 2014). The practice might also seem to be reasonable within Australian culture where beliefs about fixed 'ability' and static potential to succeed academically have long prevailed. If one believes that students can be ranked according to such 'ability,' then class ability grouping might seem an intuitively reasonable approach. This also might be due to its common use over many decades, it has become a 'normalised' way of organizing classes and is widely accepted (Perry, 2016; Vialle et al., 2015). Other evidence from Australia shows that stakeholders in education hold perspectives that class ability grouping is beneficial. Parents, students, and teachers tend to view class ability grouping as benefiting high ability students who are placed in the 'top' classes (Kronborg & Cornejo-Araya, 2018; Noor, 2018). Teachers can also view ability grouping as making their teaching load more manageable because it is easier to differentiate and that students benefit when they can learn at a pace and level appropriate for them (Francis et al., 2020). Teachers can see low ability classes as beneficial for students because they can be smaller groups and receive more attention, while higher groups can be more easily accelerated when they are grouped separately for learning (author, 2018). However, empirical evidence from student results in Australia to substantiate these claims is lacking. Meanwhile, such views reflect misconceptions about the philosophy of differentiation originally conceived by theorists, such as Tomlinson (2014) and Rose and Meyer (2006). Class ability grouping is inflexible and does not facilitate differentiation- Tomlinson

and Rose both conceived differentiation as a philosophical mindset where all students' needs are met through flexible grouping in mixed-ability classes, with Tomlinson articulating that inflexible ability grouping is the 'antithesis' of differentiation (Tomlinson, 2008, p. 4).

The perceived benefits may be one reason that class ability grouping continues to operate widely in secondary schools within countries, like Australia. There is evidence to suggest widespread use of the practice may be compounding inequality in educational outcomes in countries, including Australia, which is an increasingly problematic feature of Australian education (Hetherington, 2018). PISA analyses suggest that most Australian schools are using between-class ability grouping in Year 10 (OECD, 2018b). However, research thus far has only drawn implications of class ability grouping for equity in Australia from international comparative research using PISA data. These findings generalize across class ability grouping practices without exploring differences in how streaming is practiced *within* a country, such as Australia, including the age that grouping starts and subject variation.

International analyses of PISA data that include Australia characterize Australia as a country that uses a system of ability grouping similar to some other Western nations (Razer et al., 2018). These PISA analyses and other studies show that class ability grouping continues to operate in these countries, including England (Taylor et al., 2020), United States (Loveless, 2013) and New Zealand (Hornby & Witte, 2014). Recent research has begun to explore how practices within the UK can vary widely too (Wilkinson & Penney, 2023). Taylor et al. (2020) conducted a survey on ability grouping practices in English and Maths in England, while Wilkinson and Penney (2023) conducted a survey on Physical Education ability grouping practices in England. Research about ability grouping in England has also explored grouping practices in primary schools. Existing research in Australia has suggested that class ability grouping practices are common in secondary schools but are also present in some primary schools (Cheeseman & Klooger, 2018; Roth, 2017). For example, an Australia-wide study that investigated an Indigenous education reform surveyed teachers and principals from 201 Australian schools and found evidence of ability-based grouping in primary schools (Luke et al., 2013). The report, drawing on further qualitative data, noted that ability grouping was used from the foundation year of schooling onward, for a range of reasons that included managing classroom behavior and providing extension activities.

Our review of the Australian literature about between-class ability grouping practices revealed limited evidence of how the practice is being used in schools with autonomy over how students are grouped into classes for learning (Authors, 2023). Existing qualitative research from Australia suggests that some schools start class ability grouping at the beginning of Year 7, while others delay class ability grouping until the end of Year 10 (Authors, 2022). Some schools use class ability grouping for only one subject, two subjects, or all subjects (Authors, 2022). It is likely that practices range widely in Australia because there is limited policy guidance or regulation for schools. Most schools make local, contextual decisions about if and how to group students into classes. There is limited official advice from educational authorities or policy makers currently guiding these practices. Further variations in practice, and other forms of practices are likely, but no quantitative research has been conducted to quantify the extent to which these practices exist or to further characterize the practices being used.

In Australia, state educational authorities make a few decisions about whether to group students into public schools by ability. PISA data indicate that class ability grouping is widely practiced in Australian schools (OECD, 2018a, b). Policy in many Australian states limits selective entry requirements for state schools, while Independent and Catholic schools use a range of criteria to determine enrollment. Given the general trend away from public schooling (which dropped from approximately 66% in 2020 to 64% in 2022) (Australian Bureau of Statistics, 2022), research on school structures is a matter of growing importance. In Western Australia, there is only one selective government school (Western Australia Department of Education, 2023b). Students can elect to sit a 'Gifted and Talented entry' test in their last year of primary school (Western Australia Department of Education, 2023a). Top performers are offered a place in the selective school, while next ranking performers are offered places in schools with 'Gifted and Talented programs' (Western Australia Department of Education, 2023a). These programs are offered at 24 government schools across the state, where they are implemented using class ability grouping. Queensland, for example, has three selective entry "academies": one in creative industries, one in science, maths, and technology, and another in health sciences. Queensland also has a partially selective (academic) secondary state school. In both states, schools that do not offer these government-sanctioned competitive entry programs often create their own 'gifted and talented' or other high 'ability' class ability groupings within the school. Reasons for selective entry include a desire to attract and retain students with good academic track-records in a high-stakes testing environment and to provide targeted schooling (for example through creative industries or sporting excellence programs) in the context of a competitive educational marketplace (Harris, 2018; authors, under review).

This paper presents analysis of data from a recent survey about class ability grouping practices being used in Queensland and Western Australia. As PISA data pertain to Year 10 students (15-year-olds), data about how students are grouped in the years leading up to this point (years 7–9) provide the focus for this research. Researching school practices at this point generates useful contextual information about grouping as students begin secondary schooling and provides a foundation for future research about the effects of ability grouping in Australia.

Methods

The methods for this research were informed by the research literature, which points to class ability grouping as a practice that has the capacity to widen achievement gaps and perpetuate inequalities (e.g., Jaremus et al., 2022). In this way, it can function within education to reproduce and exacerbate existing inequalities (Bourdieu & Passeron, 1977). A pragmatic approach was thus appropriate to best answer the research question, combining approaches from both positivist and interpretivist methodologies (Dewey, 1916). Mixed methods were thus used to answer the research question through an explanatory sequential design that prioritized quantitative data with some qualitative data incorporated to further explain the quantitative findings (Edmonds & Kennedy, 2016).

The methods used in this research were selected to generate an answer to the research question: To what extent are the various class ability grouping practices being used for MESH (Maths, English, Science, Humanities and Social Sciences [HASS]) in Year 7–9 of secondary schools in Queensland and Western Australia? A survey of class ability grouping practices in secondary schools in Queensland and Western Australia was conducted.

Instrument

The Class Ability Grouping Practices Survey was used to determine the extent to which the various class ability grouping practices are being used for students in Year 7–9 core (MESH) subjects. The survey was adapted from a study about grouping practices in the UK and has been validated in that context (Taylor et al., 2020). MESH subjects were chosen as a focus because they are considered the 'core subject areas' in Australian education, so all students must take them until at least Year 10. Much research about between-class ability grouping, including PISA analyses, has focused on class ability grouping for Maths only. However, all students in Year 7–9 in Australia take these four MESH subjects, so data pertaining to each of them reflects how students spend most of their time at school.

The survey included a question where respondents identified their class grouping practices for each of the MESH subjects in Years 7–9. Respondents selected from six types of grouping practices for each of the four subjects, in each year from 7 to 9, representing a variety of practices from completely mixed-ability grouping to a fully streamed grouping practice. These six practices are depicted on a spectrum in Fig. 1 below, ranging from 'soft' to 'hard' forms of grouping, which is modeled on the survey by Taylor et al. (2020). Definitions of each practice that were provided to participants are included in Fig. 1 as well:

Respondents also answered a question about class grouping practices across subjects, in terms of whether students were in the same class groups for the various subjects. The responses to these questions were used to answer the research question with the descriptive analyses below.

Sampling

The sampling procedure was to invite all schools in Western Australia and Queensland with Year 7–9 students to complete the survey. Western Australia and Queensland were chosen for sampling because of convenience, as the authors' institutions are located in these two states. Ethics approval had been gained from the lead author's institutional Human Research Ethics Committee, but approval also needed to be gained to conduct the research from all school authorities in the two states. Approval was gained from all state and Catholic authorities except one diocese in Queensland, who did not approve the research on time for schools within that diocese to be invited to complete the survey. All other schools were invited through an email directed to the school principal. A total of 909 schools across the two states were sent an email inviting them to complete the Class Ability Grouping Practices Survey online via Qualtrics in early 2023.

Data Analysis

A total of 173 schools responded to the survey, representing a 19% response rate. This response rate represents a confidence level of 95% for the population, with a margin of error of 6.5% (Qualtrics, 2023). This confidence level and margin of error assume equal response rates across different parts of the population and that relevant variables like grouping practices or location did not influence the response rate. Of the 173 responses, 143 were included in the analysis after data cleaning, representing a 16%

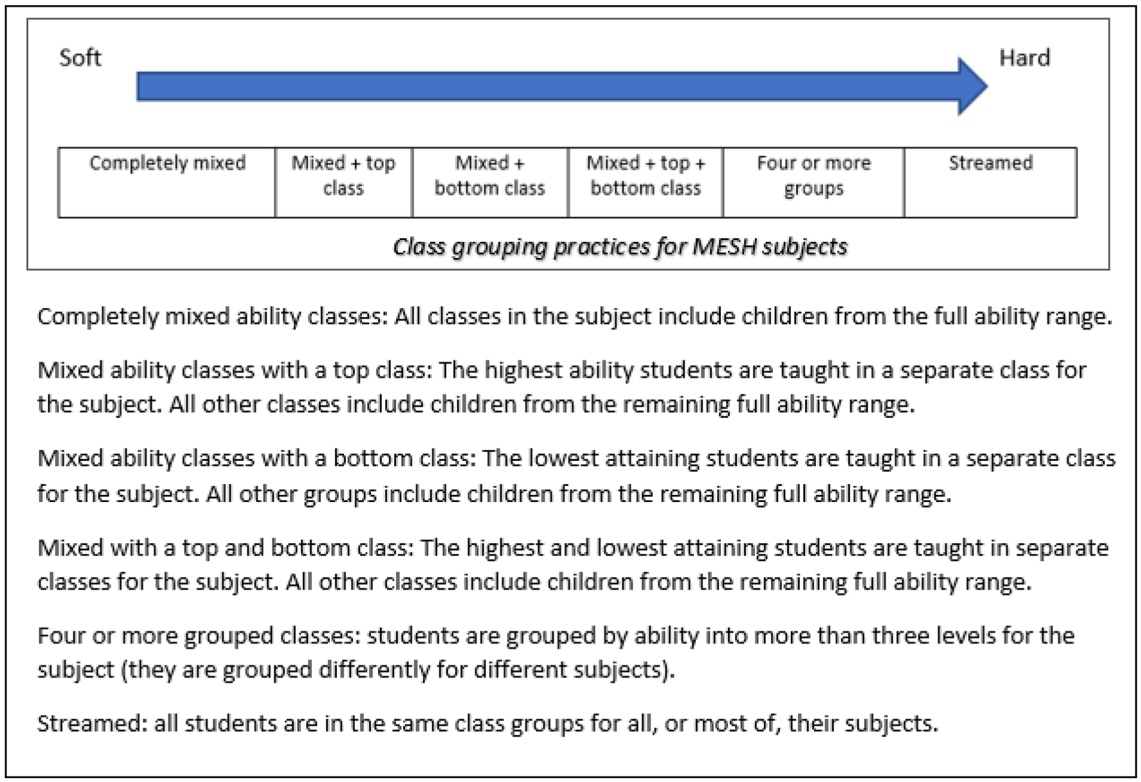

Fig. 1 Range of class grouping practices

response rate. Cleaning involved screening for outliers and correcting or deleting errors (e.g., scores were not within the range of possible scores) and excluding surveys with large proportions of missing data, leaving 68 Queensland Schools (47.6%) and 75 Western Australian schools (52.4%). The survey was completed primarily by principals ($n=93$, 65%) and associate or deputy principals ($n=30$, 21.0%). Other respondents included timetablers, curriculum/year leaders, and other leadership roles within the school. The scale in the present study had excellent internal consistency with a Cronbach alpha coefficient reported of = 0.97.

Descriptive analysis of the quantitative data occurred using IBM SPSS Version 29. Qualitative data were analyzed by three researchers to improve inter-rater reliability. The data were coded in NVivo to identify themes relating to the research questions.

The frequency tables that follow describe the Australian Curriculum, Assessment, and Reporting Authority (ACARA, 2023) data for the participant schools, illustrating that the participant school profiles generally reflect the averages for Australian schools. Critical readers can evaluate the information presented in Table 1 below and make their own decisions about the extent to which the sample represents a more general population. At the least, the data reported in this paper characterizes the class ability grouping practices being used by the 143 participant schools, affecting 108,019 students who attend these schools.

Findings

Before determining the extent to which the schools in Queensland and Western Australia engaged in class grouping practices, grouping practices were initially collapsed into two categories: completely mixed or class ability grouping before examining the descriptive statistics. The grouping practices are detailed in Table 2.

The findings revealed that in Queensland, most classes were completed mixed. This pattern was reflected across English, Maths, HASS, and Science. Ability grouping was highest in Year 9 for Maths (33.8%) and English (11.8%). However, in contrast, Western Australian reported using primarily class ability grouping practices across English, Maths, HASS, and Science. For English, the percentage of schools using ability groupings rose from 73.91% in Year 7 to 85.5% in Year 9. For Maths, ability groupings remained consistent from Year 7 (85.71%) to Year 9 (85.51%). For HASS, class ability grouping rose from 61.76% in Year 7 to 70.59% in Year 9. For Science, class ability groupings rose from 62.86% in Year 7 to 70.15% in Year 9.

Table 1 Representation of Participant Schools: ICSEA*, Location, and Students

Representation of participant schools' Index of Socio-community educational advantage (ICSEA)*		
ICSEA	All Australian schools	Participant schools
M	1000	993.67
Min	500	611
Max	1300	1182
SD	100	106.10
% of students in participant schools in bottom ICSEA quarter	25	31.78
% of students in participant schools in bottom-middle ICSEA quarter	25	26.68
% of students in participant schools in upper-middle ICSEA quarter	25	22.72
% of students in participant schools in top ICSEA quarter	25	18.89
Representation of participant schools' locations		
Location	All Australian schools	Participant schools
% Inner Regional	24.3	17.9
% Major Cities	54.5	47.8
% Outer Regional	15	21.5
% Remote	3.1	7.7
% Very Remote	3.1	5.1
Representation of participant schools' students		
No. of Students	All Australian schools	Participant schools
M	423.91	832.74
Min	1	39
Max	5259	2601
SD	434.52	612.22
% Indigenous	10.86	13.97
% language background other than English	24.19	18.76

*Note: ICSEA, or Index of Social Community Advantage, is a score used in Australian schooling to indicate the relative level of socio-economic and cultural advantage for the students that attend the school (ACARA, 2016)

Figure 2 suggests that overall, schools in Queensland and Western Australia reported higher percentages of class ability grouping for the subject areas of Maths and English. For these subjects, the most common class grouping practices used in English and Maths for the total sample ($n = 143$) for Years 7, 8, and 9 were completely mixed-ability, followed by a mixed-ability class with a top and bottom class, and a mixed-ability class with a top class (See Figs. 3 and 4).

We acknowledge the importance of timetabling lines in how students are grouped, as schools work to offer elective subjects to students while minimizing timetable clashes. Subject selection (including electives and participation in excellence programs) during secondary school is a related factor that is linked to both timetable lines and thus class grouping. The following qualitative response data illustrates this point further,

> *"Middle School structure in Years 7 and 8 means some commonality with class lists, but top and tail in Math and English means not exclusively the same" [110];*
>
> *"Split line with ENG [English] and HUM [humanities] in Year 7, 8 but blocked line in Year 9 ENG [English], though semester rotation for 9HUM [Year 9 humanities]" [90].*

Our findings suggest that high school students in Years 7 to 9 in Western Australia are more frequently grouped into class ability groups than students in Queensland. This was an unexpected finding as there is nothing in the literature to suggest any reason for this difference between states. Furthermore, there is nothing in our current data to suggest why this might be the case, so further research must be conducted to explain why this is so. However, some data revealed how school leaders make decisions about student groupings under complex circumstances that include teacher shortages and concerns about individual student achievement. Schools made comments such as *"Due to shortages in staffing (we) had to look at Years 7 and 8 to allow teachers to take 2 of the same year group."* In comparison with the contexts of early research

Table 2 Class Grouping practices in Years 7–9 for English, Maths, HASS, and Science in Queensland and Western Australia

Location	Year & Subject	n	Completely Mixed (*f*)	%	Class Ability Grouping (*f*)	%
Queensland	Yr 7 English	68	67	98.5	1	1.5
	Yr 8 English	68	67	98.5	1	1.5
	Yr 9 English	68	60	88.2	8	11.8
Western Australia	Yr 7 English	69	18	26.09	51	73.91
	Yr 8 English	70	13	18.57	57	81.43
	Yr 9 English	69	10	14.49	59	85.51
Queensland	Yr 7 Maths	68	65	95.6	3	4.4
	Yr 8 Maths	68	56	82.4	12	17.6
	Yr 9 Maths	68	45	66.2	23	33.8
Western Australia	Yr 7 Maths	70	10	14.29	60	85.71
	Yr 8 Maths	71	10	14.08	61	85.92
	Yr 9 Maths	69	10	14.49	59	85.51
Queensland	Yr 7 HASS	68	68	100	–	–
	Yr 8 HASS	68	67	98.5	1	1.5
	Yr 9 HASS	68	67	98.5	1	1.5
Western Australia	Yr 7 HASS	68	26	38.24	42	61.76
	Yr 8 HASS	69	26	37.68	43	62.32
	Yr 9 HASS	68	20	29.41	48	70.59
Queensland	Yr 7 Science	68	68	100	–	–
	Yr 8 Science	68	67	98.5	1	1.5
	Yr 9 Science	68	67	98.5	1	1.5
Western Australia	Yr 7 Science	70	26	37.14	44	62.86
	Yr 8 Science	70	26	37.14	44	62.86
	Yr 9 Science	67	20	29.85	47	70.15

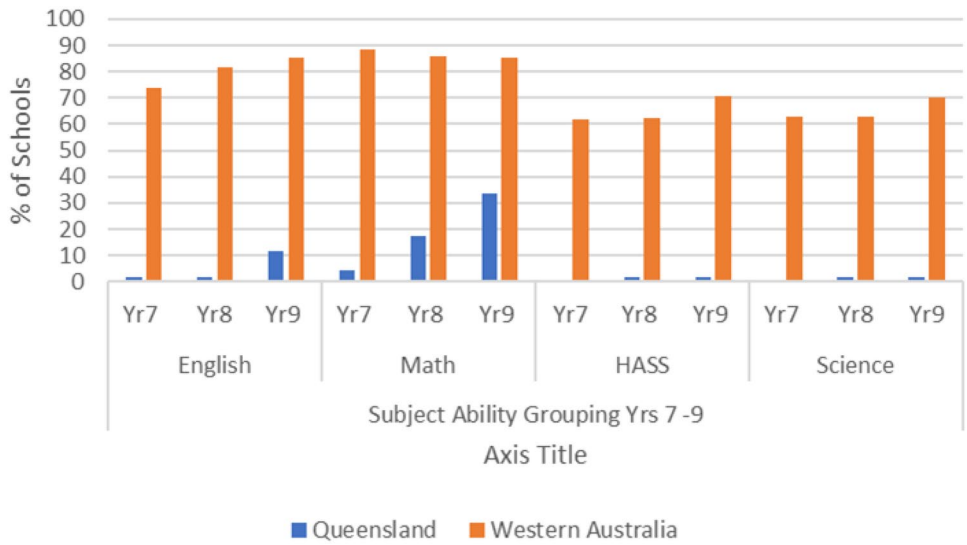

Fig. 2 Class ability grouping practices in Years 7–9 for English, Maths, HASS, and Science

on ability grouping, most schools now operate in environments where technology offers new opportunities for innovation that sit behind some grouping decisions. For example, one respondent explained that.

"The only difference [in how are grouped is] with Maths [63]. We started a new program called Math Pathways which students stay in their class grouping; however, each student is working on a program built around their level and needs. We are trialing a stream-

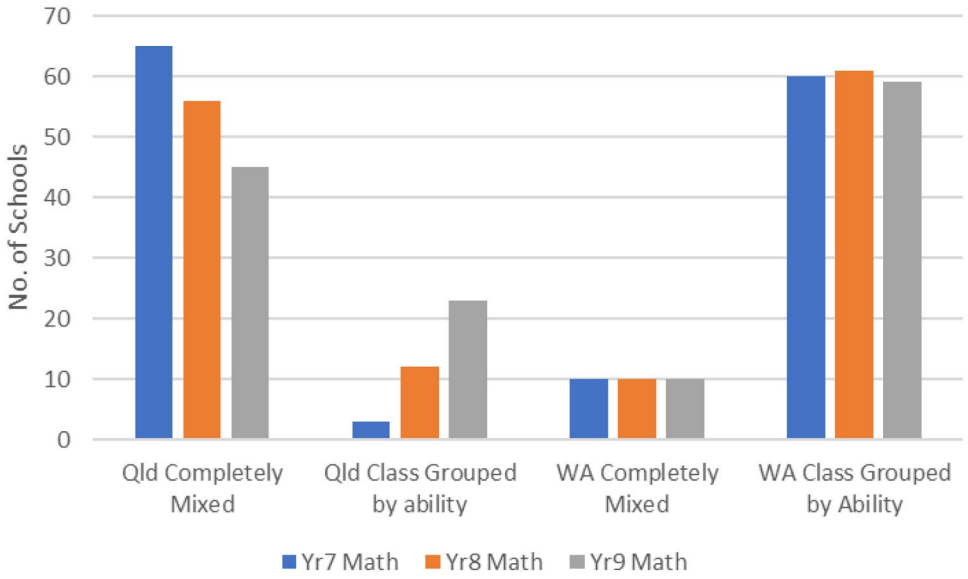

Fig. 3 Differences in in Class Ability Grouping for Maths across Year Levels and States

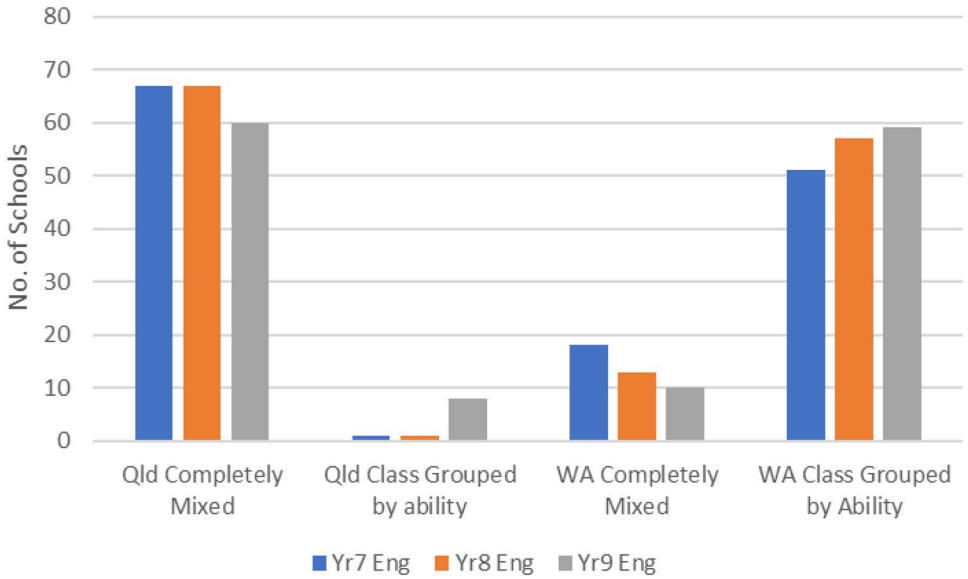

Fig. 4 Differences in Class Ability Grouping for English across Year Levels and States

ing approach for 1/5 of Maths and English. This is to provide intensive intervention or extension and will be determined by student needs" [64].

Such reasoning for grouping in the qualitative data was provided by schools who used class ability grouping in Western Australia, but there is no reason suggested that this should be different in Western Australian than Queensland.

Our analysis of the qualitative data also showed that school leaders made decisions about grouping based on the needs that they perceived their students to have. Some indicative comments included:

"Bottom group mostly students on (independent curriculum program) or working below level. Based on curriculum ability not literacy or numeracy. This approach is a trial for this year, as we had previously moved away from ability grouping" [24]; "We are currently exploring the impact of streaming and are very interested in what this research has to say" [8].

These school leaders were eager to make decisions about class ability grouping in their students' best interest, but funding and resource issues were also considerations for lower ability learners.

Students' varying experiences of class ability grouping have implications for students' attainment of educational outcomes, specifically in terms of equity. Equity issues are explored further in the discussion section that follows. Class size is another factor at play, as small schools typically offered only one class per year level, reducing the likelihood

of class grouping. Similarly, specialist schools (such as flexible schooling with residential offerings) made choices based on a range of factors, such as safety.

While there were a range of configurations, the qualitative data indicate that Queensland schools often allocated students to "top" and "bottom" classes for English and Mathematics, before placing the remaining students into "middle" classes. The following comments capture typical approaches:

> *"Maths and English classes are streamed in Years 7 to 10... For all other subjects, students are in mixed-ability learning groups" [8]; "Year 9 Maths has two top streamed classes, one bottom streamed (small) class and two middle mixed classes" [17]; "Students sit an entrance exam focused primarily on Maths and are admitted to the top two classes based on this exam" [25]; "Bottom group mostly students on ICP or working below level. Based on curriculum ability not literacy or numeracy" [24].*

In Western Australia, qualitative responses indicate that schools seemed more likely to provide focused instruction programs rather than class grouping. Some indicative comments include "Some lower ability students in Year 7 receive intensive literacy support in place of their regular English class. From Year 9, entry into the top class for English, Science, Maths, and HASS is through an application process, involving past results and an external selection test." [60]; "There is English intervention provided for those with additional needs. This is a 'push in' model." (65]. Descriptive analysis of the survey responses suggested that class ability grouping is most common in Maths classes, but less common in other subjects. Figures 3, 4, 5, and 6 illustrate the rates of class ability grouping in the four MESH subjects in Queensland and Western Australia. Class ability grouping is most common in Maths classes in Queensland and Western Australia. The next most common subject grouped by ability levels was English in Queensland and Western Australia.

Figure 3 reveals that overall, Queensland schools report higher levels of completely mixed classes for Maths compared to Western Australian schools. Ability grouping for Maths is highest in Year 9 in Queensland ($n=23$, 33.8%). The percentage of class ability grouping for Maths in Year 7 (80%), Year 8 (81.3%), and Year 9 in Western Australia (78.7%) were relatively consistent.

Figure 4 demonstrates that overall, Queensland schools report higher levels of completely mixed classes for English compared to Western Australian schools. Ability grouping for English is highest in Year 9 in Queensland ($n=8$, 11.8%). Class ability grouping for English increases from 68% in Year 7, to 76% in Year 8 and 80% in Year 9 in Western Australia.

Figure 5 suggests that overall, Queensland schools report higher levels of completely mixed classes for HASS compared to Western Australian schools. In Queensland schools, class ability grouping remains low (i.e., 1.5% for Years 8 and 9). In Western Australian schools, levels of ability grouping for HASS rise from 56% in Year 7, to 57.3% in Year 8 and 64% in Year 9. While slight increases for HASS were evident across the year levels, they were much lower than the increases in ability grouping by year level reported in Maths and English that were reflected in Figs. 3 and 4.

Figure 6 depicts that overall, Queensland schools report higher levels of completely mixed classes for Science compared to Western Australian schools. In Queensland schools, class ability grouping is low (1.5% for Years 8 and 9). In Western Australian schools, levels of ability

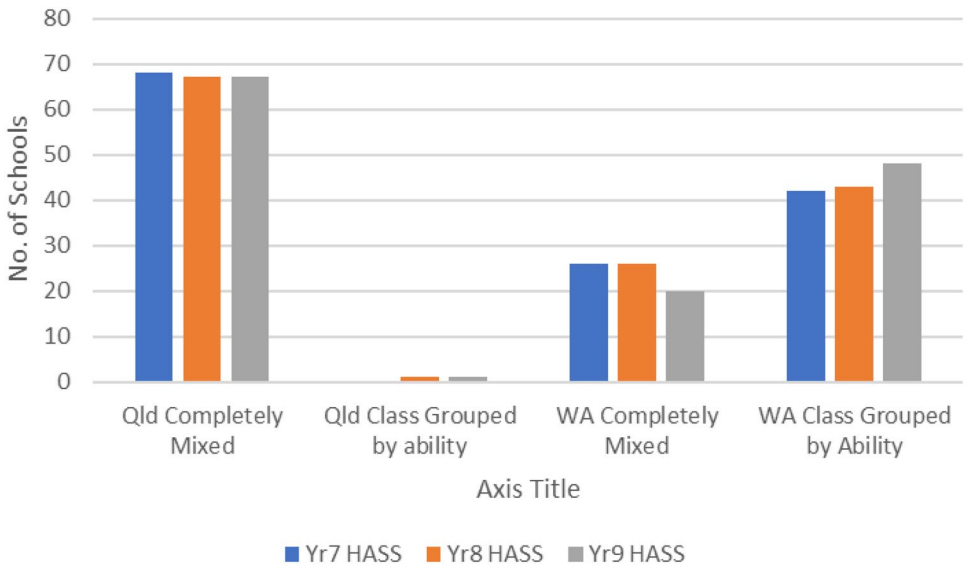

Fig. 5 Differences in in Class Ability Grouping for HASS across Year Levels and States

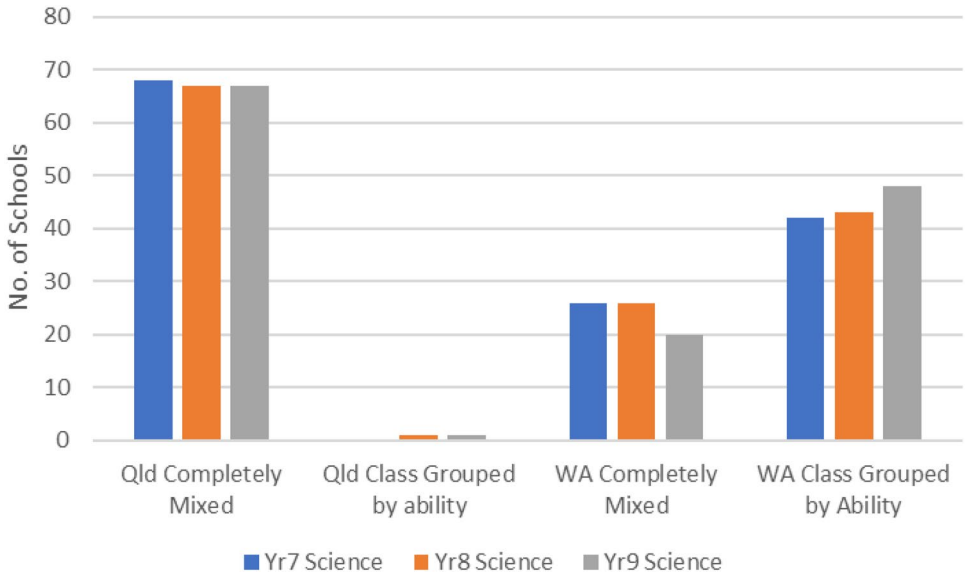

Fig. 6 Differences in Class Ability Grouping for Science across Year Levels and States

grouping for Science were 58.7% in Year 7 and 8 and slightly higher in Year 9 (62.7%). Like HASS, although there is a slight increase in class ability grouping for Science across year levels, they were much lower than the increases reported in Maths and English.

Class ability grouping showed an overall upward trend as students move up year levels, with increases from Year 7 to 9 reflected in Fig. 2. Class ability grouping was most common in Maths classes, with analyses also showing that English was the second highest MESH subject where ability grouping was used. However, Maths indicated a slight dip in Year 9 grouping in the Western Australia schools that was not evident in Queensland. These findings are illustrated in Figs. 3, 4, 5, and 6. Possible reasons and implications for these differences across subjects and states are suggested in the discussion below.

The pronounced differences in the two states that were indicated by the data analyses were an unexpected finding. Figure 2 showed that the majority of schools in Western Australia use class ability grouping for all of the MESH subjects from Year 7–9 inclusive, while the majority of Queensland schools use completely mixed-ability grouping for all of the MESH subjects from Year 7 to 9. This means that most 12–15-year-olds in Western Australia are learning their MESH subjects in ability-grouped classes, while most 12–15-year-olds in Queensland are learning their MESH subjects in completely mixed-ability classes. The possible implications of these findings are discussed in terms of equity in the discussion section that follows, but reasons for this difference were not found within the scope of this research.

Discussion

Our findings show that in Queensland and Western Australian secondary schools, grouping by ability generally increases as students get older, is used more by some schools than others (e.g., larger schools), and is most prominent in Maths and English. The findings also highlight pronounced differences between the two Australian states, where Western Australia uses class ability grouping much more often, for more subjects, and begins class grouping sooner. These findings suggest that some students are experiencing more inequitable grouping practices than others, due to contextual factors, which may complicate and exacerbate existing equity issues associated with ability grouping. This research generated new knowledge that characterizes how streaming practices vary across two states in Australia according to year level, subject, and location.

Inequality in how students are grouped into classes for learning may compound and complicate the implications for equity in education. PISA data from 2012 to 2018 asked principals whether students were grouped into classes by ability for learning in no subjects, at least one subject, or all subjects (OECD, 2014, 2018b). The analysis of PISA data above shows that the vast majority of principals in all three testing years selected 'for at least one subject,' but there was no identification of subject provided by the data. Furthermore, the PISA data are only for fifteen-year-old students, which is Year 10 in Australia. The research presented in this paper has elaborated on the PISA data in three ways:

(1) Identifying the specific MESH subjects in which students are grouped into classes by ability;
(2) Characterizing the increase in class ability grouping from Year 7 to 9; and
(3) Identifying variance in between-class ability grouping practices according to where students live and which school they attend.

If Australian educators are committed to following through on policy commitments to equity in education (MYCEETA, 2008), closer scrutiny of class ability grouping practices could be a starting point for change. Our findings confirmed that levels of class ability grouping used in MESH subjects increase as students move from Year 7 to Year 9. This is unsurprising because students' academic pathways for Years 11 and 12 become more certain (and restricted) as they get older. Schools might consider it preparation for students' future, according to whether or not the students will be enrolling in university pathway courses in Years 11 and 12.

Overall, the qualitative data provided by participants indicated that school leadership teams are searching for practices and structures that will best meet the needs of their students and trialing different grouping strategies as a means of increasing the support provided to students. Our analysis of the qualitative data also highlighted that schools are making decisions based on what school leaders consider to be best for their students.

It is concerning that students who are commencing Year 7, as young as 11 years old, may have their post-secondary pathways limited by class grouping practices. Teachers' expectations of students can affect their academic outcomes when they shape how students are treated in classrooms (Papageorge et al., 2020; Wang et al., 2019). Students being grouped into classes associated with defined post-secondary pathways could create self-fulfilling prophesies where students experience little flexibility in their educational trajectory (Boaler, 2005). Once students are allocated to an ability-based class, movement to a 'higher' class is both difficult and rare, due to missed curriculum and the need for another student to be moved down, making a space available (Ireson et al., 2002). A student's previous group level influences subsequent placement regardless of later achievement (Gamoran, 1986). Recent research from Australia has investigated how students placed in lower ability-grouped classes in New South Wales were unable to take university-entry level Maths classes in Years 11 and 12 (Jaremus et al., 2022). These findings confirm international research that has shown that class ability grouping is associated with restricted post-secondary pathways (Francis et al., 2020).

The findings also reveal that class ability grouping is much more widely used in Maths and English than in Science and HASS. Interestingly, high-stakes testing in Australia's NAPLAN focuses on student achievement in these two subjects. Students undertake standardized tests for Science and HASS less frequently and these subjects are not reported about publicly as they are for Maths and English in Australia. Furthermore, schools are held to account by their state government according to NAPLAN scores in Western Australia, with underperforming schools subject to review processes that can involve dismissal of the school Principal and government intervention. Research about class ability grouping in Australia has traditionally focused on the Maths learning area (Forgasz, 2010; Zevenbergen, 2005). The research presented in this paper adds to the literature by comparing class ability grouping in Maths and English with the other MESH subjects of HASS and Science.

The research findings also begin to reveal the complexity of class grouping practices being used in Australia, emphasizing that vast differences across locations exist. The current research presents *what* occurs in schools regarding class grouping and begins to consider the reasons why some class grouping decisions are made. Further upcoming publications will address in greater detail *why* such decisions are made as well as *how* the decisions are enacted within schools. Some possible reasons for differences may include varying levels of disadvantage, cultural norms, leadership, or past interventions. However, these reasons for differences in respondent schools' class ability grouping practices can only be speculative until further research is conducted. Such further research could include interviews with school leaders and educators in both states to further explore the reasoning behind their decisions about class ability grouping.

Inequality in Australian education is growing with devastating economic repercussions, with conservative estimates that inequality is costing Australia 20.3 billion dollars (Hetherington, 2018). Many aspects of an education system might contribute to inequality, but international research suggests that class ability grouping can be a contributing factor (Castejón & Zancajo, 2015; OECD, 2018a). Future research could inform policymaking about class ability grouping in the Australian context, leading to improvements in class ability grouping practices that create equitable outcomes for our students, without compromising academic outcomes. Such further research could examine the Australian context, investigating how different forms of class ability grouping affect student outcomes, including how this varies across subjects and groups. This might include following students and grouping practices over several years. Such research could examine the characteristics of the students in each class group within the school and explore any differences in their experiences according to how they are grouped. The research could also be expanded to other Australian states.

Our findings indicated that school leaders' intentions were to provide the best learning conditions for their students, but further research is needed to see how students are being affected by these choices in Australia. Previous qualitative research by the first author of this study has suggested that students in high ability groups experience benefits of class ability grouping, but that they do not always see it as beneficial or fair (Author et al., 2022). Future research could draw wider comparisons from evidence about how students experience different forms of class ability grouping and how these affect their educational outcomes. We suggest that further research is also needed to determine how education funding and policy could provide school leaders with clear direction and the support needed to tackle the large disparities in student needs and achievement at the school level. As Ball (2012) suggests, most education policy research does not deal with issues of funding. A deeper understanding of what school leaders require to ensure teachers are able to support all learners – without resorting to class ability grouping – is needed.

Limitations

The present study is not without limitations and findings should be considered with some caution. The limitations of the voluntary response method are noted. The present study is not without limitations. We recognize that the study relies on a self-report methodology which is susceptible to subjective bias. We acknowledge the potential bias that may have arisen that those who chose to participate might have had current or prior knowledge (including about the research literature) or a particular interest in ability grouping. Some schools may have chosen to participate because they are currently changing, or have recently changed, their practices. Others may have chosen to participate because they are interested in the topic and have knowledge about it. Although there is little research and policy advice about ability grouping in Australia, the research predominately cautions against the practice. For this reason, the authors believe that the levels of class ability grouping reported in this study are modest representations of the extent to which class ability grouping is being used in these two states. Furthermore, the study used cross-sectional data from two states in Australia. As such, findings should be interpreted with some caution and further research is needed with larger sample sizes across all Australian states and territories.

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