



Tiering in the GCSE: A children's rights perspective

Rhian Barrance* 
Cardiff University, UK

This article presents findings on students' views and experiences of tiering in Northern Ireland and Wales from a children's rights perspective. It considers the extent to which tiering fulfils the rights to education, best interests, non-discrimination, and participation under the Convention on the Rights of the Child. It emphasises that while the majority of students were supportive of tiering, their responses highlighted a range of negative effects of tiering on students taking foundation tier. Students described the impact of being placed in the foundation tier on their self-esteem and relationship with their peers, indicating that being allocated to foundation tier can have a labelling effect. Students who were taking foundation papers, or a mixture of foundation and higher-tier papers, were more likely than those taking higher-tier papers to report that they wanted to change tier and to raise issues overall regarding tiering. Furthermore, students who were faced with these difficult choices often had a poor understanding of several aspects of tiers. The article argues that alternative forms of differentiation should be considered, and presents students' perspectives on some of these. It argues that we must ensure that young people have a good understanding of tiering and that their views and experiences of tiering are taken into account when considering further reforms to GCSEs.

Keywords: tiering; GCSE; assessment; children's rights

Introduction

This article uses a children's rights approach to consider the extent to which the use of tiering in GCSE qualifications in the UK is compatible with the principles outlined in the United Nations Convention on the Rights of the Child (UNCRC), to which the UK is a signatory. Tiering is a form of differentiation that is used to provide examination papers of appropriate levels of challenge for all candidates. For most subjects that are tiered at GCSE level in Northern Ireland (NI) and Wales, there are two tiers of exam paper: the foundation tier and the higher tier. Foundation-tier papers cover lower levels of demand than higher-tier papers. As they are more challenging, higher-tier candidates have access to higher grades than foundation-tier candidates: A*–D grades are available on the higher tier, and C–G on the foundation tier.¹ England used the same two-tier system until 2015 when it adopted a new 9–1 grading structure. Since then, the higher tier covers grades 9–4 (and has a 'safety net' of an allowed grade 3 for those whose scores fall just under the grade 4 boundary), and the foundation tier covers grades 5–1. The demands of the papers have also increased. The grade

*Corresponding author. School of Social Sciences, Cardiff University, Glamorgan Building, King Edward VII Avenue, Cardiff, CF10 3WT Park Place, UK. Email: barrancer@cardiff.ac.uk

5 available to students taking foundation tier is higher than the C grade permitted on the tier under the legacy specifications. In addition, the allowed grade 3 on the higher tier is higher than it was under the old system (Ofqual, 2017).

Tiering has been used for GCSEs since they were introduced in 1986. Prior to the introduction of the GCSE, 16-year-olds in Wales, England and NI took either O-Levels (Ordinary Levels), designed for the most able students, or the CSE (Certificate of Secondary Education), which was designed for those who were expected to find the O-Levels too challenging. The GCSE aimed to provide a common examination which could be taken by all pupils (Isaacs, 2010). However, questions about how to cater for such a wide range of abilities were widely debated in policy circles in the years leading up to the establishment of the new qualifications, culminating in the decision that differentiated papers should be available in some subjects, including modern languages, mathematics and the sciences, before being spread to a greater range of subjects in the first reform of GCSEs in 1994 (Baird *et al.*, 2001). The introduction of tiering in what was ostensibly a ‘common examination’ raised questions of fairness, with some questioning whether they could really be said to offer equality of opportunity for all students (Radnor, 1988).

Until 2006 there were three tiers of examination papers for most qualifications, a foundation, intermediate and higher paper. Due to concerns regarding the use of floor and ceiling effects, the use of tiering in the GCSE was restricted in 2010, when most qualifications used only two tiers. Since 2013 tiering has been reduced even further, so that many core subjects are now untiered. Following the end of three-country regulation of GCSEs in 2013, there are now differences between the subjects that are tiered in NI, Wales and England. While the consensus across the three countries is that tiering should only be used when strictly necessary, they differ according to which subjects they believe require tiering. As shown in Table 1, while NI and England have the same regulations in place for core subjects, Wales diverges in retaining tiering for English literature and using a three-tier system for mathematics.

While tiering and common papers are the only two methods of differentiation that have been used in the GCSE, there are alternatives. Core plus extension involves a ‘core’ paper which all candidates sit, and an additional extension paper which gives access to the highest grades (Burghes *et al.*, 1998). Adjacent levels use three different papers with no overlapping grades. Most candidates take two papers so that they cover the grade range appropriate for them (Baird *et al.*, 2001).

A children’s rights approach

The UK and devolved governments have a legal obligation to realise the rights outlined in the UNCRC, and yet they are rarely considered in relation to educational

Table 1. Tiering in 2013

	English language	English literature	Mathematics	Sciences
England	Untiered	Untiered	Two tiers	Two tiers
NI	Untiered	Untiered	Two tiers	Two tiers
Wales	Untiered	Two tiers	Three tiers	Two tiers

assessment (Elwood & Lundy, 2010). This is despite the fact that testing and assessments dominate so much of children's schooling experiences, and their results can have serious consequences for children's lives and future trajectories. This article uses the children's rights approach to assessment developed by Elwood and Lundy (2010) to evaluate tiering in GCSEs. They identify Article 29, the right to education, as the key provision in the UNCRC related to assessment. This states that the aims of education should be 'the development of the child's personality, talents and mental and physical abilities to their fullest potential'. The General Comment on Education (United Nations Committee on the Rights of the Child, 2003) provides further clarification, asserting that education should 'empower the child by developing his or her skills, learning and other capacities, human dignity, self-esteem and self-confidence'. Three of the UNCRC's General Principles, over-arching rights which inform the interpretation of other rights, are also of relevance. These are: participation (article 12), best interests (article 3) and non-discrimination (article 2). Thus, a children's rights-based approach to assessment requires that 'the best interests of children are a primary consideration in decision-making; that children are offered opportunities to participate meaningfully throughout the decision-making processes; and that opportunities to learn, progress and succeed will be available to all children equally' (Elwood & Lundy, 2010: 346).

Using this approach, this article considers whether tiering is in the best interests of all students (non-discrimination), and whether they are given opportunities to participate in decisions. In terms of children's best interests, particular scrutiny is given to the practice of allocating children to foundation tiers, given the potential impact on their mental and emotional wellbeing. It will also consider whether it is in children's best interests academically for them to be placed in tiers which restrict their access to the highest grades.

The duty not to discriminate in educational assessment requires consideration of the principles of fair testing (Elwood & Lundy, 2010). There is a comprehensive literature on fair testing: this highlights the duty on test developers to ensure that all pupils are afforded opportunities to demonstrate their knowledge and skills (Camilli, 2013). They must also ensure that tests are not biased against particular groups of students, and that test instruments are appropriate for their intended uses (Kane, 2013). It is important to interrogate the presentation of tests as 'objective instruments that tell us something valid about the child taking the test and which are neutral enough to have no impact on the outcomes observed' (Elwood & Lundy, 2010). Thus, we need to consider the extent to which structural features of examinations, such as tiers, facilitate or restrict the performance of particular groups of pupils.

To understand the impact of tiering on young people's attainment and self-esteem, we should give young people opportunities to contribute to the debate. The UNCRC states that children's right to participation goes beyond providing them with opportunities to speak: their views must also be given due weight, so that they are 'listened to and acted upon as appropriate'. As duty-bearers under the UNCRC, the UK government and devolved governments have an obligation to take children's views on assessment into account in policy-making. Governments should build children's capacity to participate in these debates by fulfilling their right to information (article 13) and guidance from adults (article 5) (Lundy, 2007). Thus, children should be involved in

decisions regarding tiering, they should be provided with relevant information about the tiering system and should be supported by adults to enable them to make informed decisions. While there is little evidence that young people's views on tiering have informed the national debate thus far, this article will present evidence on students' views and experiences of tiering in order to provide evidence for policy-makers as they consider future reforms.

Research findings on tiering

Since the introduction of GCSEs in 1986, there has been a great deal of research on tiering, although most of this research was undertaken before the most recent reforms to GCSEs. A key body of research has investigated the extent to which pupils entered into foundation and higher tiers are being adequately rewarded for their performance (Wheadon & Béguin, 2010). The problems identified by research tend to relate to students who are working at borderline grades, which can be attained on two papers in a two-tier system. The Good and Cresswell (1988) effect shows that markers tend to judge test-takers' answers more harshly to more difficult questions, so pupils on the C grade borderline are more likely to attain a C grade if they are taking foundation papers. Research on the outcomes of these students has also been conducted. Baird *et al.* (2001) analysed data on patterns of performance across the tiers, to determine whether students who received unclassified grades (below the grade boundaries for the tier) at higher tier might have attained a better grade at foundation. They found that some candidates who failed the higher tier may have achieved a 'classified' grade at foundation tier.

Baird *et al.*'s (2001) results also suggest that some students have done so well on the foundation tier that they may have been able to access higher grades on the higher tier if they had been taught the higher-tier content. Wheadon and Béguin's (2010) more recent research supports these findings, although their results indicate that a smaller proportion of students might have attained a grade B: 5% instead of the 5–26% in Baird *et al.*'s research. While we cannot know for sure whether these students would have achieved B grade on the higher tier as these findings are based on performance over the foundation tier, they are concerning as they suggest that pupils' ability to achieve is actually limited before they have even entered the examination hall (Elwood & Murphy, 2002). This can have wide-ranging consequences for their future prospects, as pupils need certain grades at GCSE to progress to A-level and university.

Indirect effects of tiering

Research has also investigated the indirect effects of tiering, considering how tiering structures interact with the practices of teachers, parents and students. Baird *et al.* (2001) suggest that indirect effects may be more damaging than direct ones. One reason for this is that students tend to be allocated to tiers based on their ability groups, often 3 years before the end of the GCSE course (Boaler *et al.*, 2000). This is problematic as research has shown that when students of similar abilities are placed into different-ability groups, those in the lower groups tend not to make as much progress

as those in the higher groups, possibly because of the limitations of the foundation curriculum (Ireson *et al.*, 2002). It is therefore difficult for students to move from the foundation to the higher tier, and it is rare for students to change tier during their courses (Baird *et al.*, 2001).

Some research has found that teachers are more likely to enter students into the foundation tier when the subject specification is linear (Wilson & Dhawan, 2014). However, more recent research (Vitello & Crawford, 2018) suggests that the picture is more complex. This research has shown that a number of factors seem to affect students' tier designations, including subject and specification type, as well as some student characteristics. Changes to the challenge of papers can also have an impact on teachers' decisions. Ofqual's (2017) teacher research suggests that schools in England are planning to enter more students into foundation tiers for mathematics in 2018 following changes to increase the demands of the foundation paper, and the higher grade allowed on the foundation (grade 5 is higher than grade C on the legacy foundation). As Ofqual also suggest, teachers may be more likely to enter students onto the foundation tier as the lowest grade available on the higher tier will be higher than that allowed on legacy specifications (allowed grade 3 on new specifications, compared to allowed grade E on legacy papers). This echoes Wilson and Gill's (2014) research, in which teachers of mathematics and science indicated that they would enter more students onto the foundation paper if this happened.

A further problem is that teachers' perceptions and expectations of different groups of students have been shown to affect their tiering allocations based on gender. For example, Elwood (2005) found that girls were disproportionately entered into the intermediate tier for mathematics, with teachers explaining such decisions by pointing to girls' perceived lack of confidence in mathematics. Strand (2007) found a similar trend for entries by ethnicity, with Black Caribbean students less likely to be entered into the higher tiers. Thus, there are considerable implications for the fairness of the qualifications, as tiering practices can reinforce existing inequalities. These issues are particularly problematic since there is evidence that students are not always aware of the implications of tiering decisions, and are sometimes even unaware of which tiers they have been entered into.

Three studies (Gillborn & Youdell, 2000; Baird *et al.*, 2001; Barrance & Elwood, 2018a,b) have investigated the extent to which students knew about tiering and their own tiering allocations, all using focus groups in case study schools. Baird *et al.* (2001) found that there was a relatively good understanding of tiering amongst pupils in the schools they studied. However, Barrance and Elwood (2018a,b) found that there were misconceptions amongst students around the grade boundaries on tiers, and Gillborn and Youdell (2000) found that there was a greater level of understanding amongst pupils taking higher-tier papers than those taking foundation-tier ones. Furthermore, the research of Boaler *et al.* (2000) observed that students are often unaware of the implications of their setting and tiering allocations until the final year of their courses, at which point it is difficult to change (Boaler *et al.*, 2000).

The research

This article draws on data from two research projects on students' perspectives of GCSEs in NI and Wales. The first is a mixed-methods study undertaken at Queen's University Belfast (QUB), for which data collection was undertaken between 2014 and 2015. The second project is the WISERD Education multi-cohort study (for more information see WISERD, 2019). WISERD (Wales Institute for Social and Economic Research, Data and Methods) is a research institute in the School of Social Sciences at Cardiff University. Questions on tiering were included in the annual WISERD Education survey for 14–15-year-old GCSE students in 2017.

Study 1: Queen's University Belfast

This project used surveys and focus groups to elicit young people's views and experiences of GCSEs and their reform. As discussed earlier, the research used a children's rights approach (Lundy & McEvoy, 2012), which aims to 'build the capacity of rights-holders to claim their rights' by providing evidence from young people about their views and experiences of tiering. This evidence can be taken into account by policy-makers when considering further reforms to GCSEs.

Another aspect of the approach is to establish young persons' advisory groups to ensure that the research addresses issues of importance to young people. Eight GCSE students aged 15–16 years in each country were recruited to join the groups. They were advisors rather than participants, and so background information was not collected, although schools were asked to involve students taking a range of tiers to ensure a mixture of perspectives. The groups received training in assessment and research methods, and advised on the surveys and focus group schedules. For example, they suggested that capacity-building graphics should be used in the surveys to ensure that students understood assessment features such as tiering and controlled assessment, and recommended the inclusion of questions on stress and anxiety around GCSEs.

The surveys were conducted online unless schools requested paper versions, and took around 30 min to complete. There were only slight differences between the NI and Wales versions of the survey, relating to different GCSE courses offered in each country. The surveys included a number of questions regarding their views and experiences of GCSEs and the ways the qualifications are assessed. This included a mixture of open-ended and closed questions about their experience of tiering and how supportive they were of it.

The focus groups were conducted by the researcher on school premises with 5–10 final-year GCSE students. They took around 45 min and began by using a capacity-building infographic explaining recent reforms to ensure that students could give informed answers. A number of questions were asked relating to their knowledge of tiering structures, and their views and experiences of tiering. Students were then presented with information about alternative methods of differentiation, such as core plus extension and adjacent levels, and asked their opinions on these. Alternative methods of differentiation were only discussed in the focus groups as they were considered too complex to be included in the survey.

Ethics. Information sheets and opt-out consent forms were provided to schools and distributed to parents of survey participants in advance of pupils taking the survey. Pupils were provided with information at the beginning of the surveys which clearly explained their participation and emphasised that it was voluntary. Parental consent was obtained from the parents of focus group participants prior to their participation using information sheets and consent forms. Pupil consent was obtained via information sheets and consent forms prior to the beginning of the groups. Written consent was also obtained from advisors and their parents.

Sampling. In total, 1,600 students aged 15–16 years completed the surveys across NI and Wales. The schools were selected using random stratified sampling from national databases of all schools (excluding private schools) in both countries: in Wales this was by proportion of children eligible for free school meals (FSM). Five Welsh schools with below-average numbers of students eligible for FSM were recruited for the surveys (494 pupils), as well as six schools with above-average FSM (407 pupils): 901 pupils in total. 68 pupils participated in the focus groups in Wales. The majority of these were from comprehensive schools (62 pupils), and one focus group (6 students) took part in a youth council forum, due to difficulty recruiting schools in Wales.

As there is a selective school system in NI, the schools in this country were sampled by grammar/non-grammar status. This approach was chosen to ensure that the findings would be useful for stakeholders in NI. Moreover, there is a high correlation between FSM status and grammar school attendance in NI (Jerrim & Sims, 2019), with children eligible for FSM far more likely to attend non-grammars—and so it was felt that it was appropriate to use school type instead of FSM in NI. The number of schools achieved in each category in NI was one grammar (13 pupils) and five non-grammars (52 pupils) for the focus groups, as well as six grammar (379 pupils) and eight non-grammars (320 pupils) for the survey.

Data analysis. The quantitative data from the project were analysed using SPSS. Chi-squared tests were run on sets of variables to analyse the relationship between background variables (such as gender, school type, reported) and responses to other questions in the survey. To identify whether there were statistically significant differences between responses by reported tier, chi-squared tests of difference were conducted, with a Bonferroni correction for multiple comparisons. The effect size was calculated using the correlation coefficient phi, for 2×2 tables, and Cramer's V for larger tables. Only statistically significant differences between groups are reported.

The qualitative data for the QUB project (focus group transcripts and responses to open-ended questions) were analysed collaboratively with the young persons' advisory groups. The research used thematic analysis (Braun & Clarke, 2006). The young persons' advisory group assisted in the process of thematic analysis by coding and thematising a selection of extracts from the focus group data. The themes generated from these discussions were compared with those which had been developed by the researcher following analysis of the entire dataset using MAXQDA. The researcher ensured that the final themes were informed by the interpretations of both advisory groups. The final themes were consequences, fairness and choice. Both advisory

groups chose fairness as a key theme. Consequences was chosen as the Wales advisory group chose the theme of 'effects' of assessment, and the NI PAG identified 'pressure' as a theme. The final theme, choice, derived from the researcher's interpretation of the broader dataset.

Study 2: WISERD Education multi-cohort study

The second project is the WISERD Education study. This is a longitudinal multi-cohort study that has been annually surveying three cohorts of young people from 12 schools across Wales over the last 7 years. In 2017 this survey included follow-up questions to investigate further some of the issues around tiering that had arisen in the first project, focusing particularly on students' knowledge of their tiering allocations and the grade ranges available on different tiers.

While the QUB survey asked students which tier they were in for the majority of subjects, in the WISERD Education study students were asked whether they were aware of their tiers for one GCSE subject. This was because it was thought that students would give more precise answers to a question about a specific subject. The qualification selected was science, as it is a core subject that is compulsory for the vast majority of students, and uses the usual two-tier model (unlike WJEC mathematics, for example, which uses three). The data were collected using tablets on schools' premises.

Sampling. The schools for the WISERD Education project were selected using random stratified sampling according to FSM and rural/urban location. In spring 2017, 336 14–15-year-old GCSE students completed the WISERD Education survey. All schools were comprehensives and four were Welsh-medium. Of the 12 schools participating, 5 had an above-average proportion of pupils eligible for FSM (94 students) and 7 had a below-average proportion (242 students). When students were asked which tiers they were taking, 25% said they did not know, 32.7% indicated that they were in the foundation tier, and 42.3% said they were taking the higher tier.

Data analysis. Statistical analysis of the survey data was conducted using SPSS. Frequency charts were produced and chi-squared tests were used to identify students' understanding of the grade ranges on their tiers and what proportions of higher-tier and foundation-tier candidates were happy with their tiering allocations. Cramer's V was used to determine effect size for the first test, and phi for the second (as this was a 2×2 table).

Ethics. The parents of participants in the WISERD Education study were given information sheets and opt-out consent forms prior to beginning the project. Participants are given information at the beginning of every survey explaining their participation and emphasising that it is entirely voluntary.

Presentation of data

When the QUB data are presented below, each quotation has been labelled to indicate whether they are from students in NI or Wales, and whether they are from the focus group (FG) or the survey. The quotations from students in NI have been labelled to show whether they attend a ‘grammar’ or ‘non-grammar’ school (there are no grammar schools in Wales). There are different conventions for describing year groups in Wales and NI—in the former the first year of secondary school is year 7, whereas this is year 8 in the latter. In order to avoid confusion, the years have been labelled first, second, third and so on, beginning from the year pupils begin secondary school at age 11. Quotations have been clearly labelled with either ‘WISERD Education’ or ‘QUB study’.

Results: Students’ views and experiences of tiering

Despite the widely documented problems associated with tiering in the research literature, the support for tiering among students was high amongst participants in the QUB study. When respondents were asked ‘Do you think that it’s a good idea or a bad idea for there to be different tiers of exam papers (e.g. Higher Tier, Foundation Tier)?’, 86% of students in NI and 83% of students in Wales responded that it was a good idea. A follow up open-ended question asking participants to explain their responses showed that a large number of those who answered ‘good idea’ justified their choice by stating that tiers would be better for the least able students. There were 113 such responses to this question in Wales, and 77 in NI. In Wales, a typical response was that tiers ‘*allow people who are unable to do the higher grade work a chance to do well in their exam*’ (Survey, Wales, QUB study). In NI, such a response was ‘*so the less academic pupils can achieve a good grade as well*’ (Non-grammar, Survey, NI, QUB study).

Consequences of tiering

While the majority of students were supportive of tiering, the answers of participants who selected ‘bad idea’ to the open-ended question asking participants to explain their views of tiering show that there were clear social and emotional impacts for a minority of students taking the foundation-tier papers. One Welsh student wrote at length about his experience of tiering and its impact on his self-confidence and relationship with his peers:

I am one of many students that is doing lower papers for my GCSEs therefore I cannot get anything higher than a C [...] I find that disgraceful for I believe I should have the same chance as everyone else to get higher than a C. At times it can affect me mentally for I feel as if I am not as equal as everyone else as if I’m dumb and soon begin feeling depressed, many of my friends are doing higher tier and when I am around them I can’t help but feel stupid. (Survey, Wales, QUB study)

This comment shows that tiering allocations can have a considerable effect on some students’ learner identities. Another participant from the same school made a similar point, noting that she ‘*felt segregated dumb and worthless by not being chosen for a tier*’

(Survey, Wales, QUB study). Students were especially concerned about the impact on their peers' perception of them, suggesting that being allocated to the foundation tier 'can cause prejudice or bullying' (Survey, Wales, QUB study). For these students, the consequences of tiering were extensive, not only affecting the grades available to them, but also the ways that other students viewed and treated them.

In NI there was a similar view amongst survey respondents, with a grammar school student noting that 'it can make people feel stupid and that they are not good enough' (Grammar, Survey, NI, QUB study), and a student from a non-grammar school noting that it is 'very unfair on the foundation people as they would find themselves being called "dumb" for not doing higher' (Non-grammar, Survey, NI, QUB study). Being allocated to a foundation tier appears to have a labelling effect: one student wrote that 'tiers are like label (e.g.) foundation = you're stupid, higher = you're smart' (Non-grammar, Survey, NI, QUB study). The messages conveyed to students about their 'ability' by tiers appear to be internalised and seen as fixed qualities rather than malleable concepts. Thus, as Elwood and Murphy (2002) have argued, when we consider the difficulty of moving between tiers, and the restrictions in the curriculum offered to foundation candidates, there is a danger that the 'label' of 'foundation' or 'higher' becomes a self-fulfilling prophecy.

Capping of attainment

Being allocated to the foundation tier was problematic for educational as well as social reasons, because of the capping of attainment at C grade. This is the highest grade available at foundation level under a two-tier system. Thus, QUB survey respondents were asked how much they agreed or disagreed with the following statement on a five-point Likert scale: 'It's unfair that the highest grade you can get on the Foundation paper is a C'. Overall, 62% of students in NI and 60% in Wales agreed or strongly agreed with this statement. It is important to be cautious while interpreting these results: the use of the term 'unfair' could be perceived to be leading. However, all participants received the same question, and it is the difference between students based on their tiering allocations that is of primary relevance to this article.

There were statistically significant differences between the responses of participants to this question by reported tiers in NI [$\chi^2(3) = 18.309, p < 0.001$], with a Cramer's *V* test detecting a small effect size (0.169, $p < 0.001, n = 641$). There was also a statistically significant difference in Wales [$\chi^2(3) = 36.266, p < 0.001$] where there was a slightly larger effect size (0.209, $p < 0.001, n = 834$). Table 2 presents the proportion of students who agreed with the statement by tier in each country. It also shows where the statistically significant differences lie: each subscript letter denotes a subset of the reported tier categories whose column proportions do not differ significantly from each other at the 0.05 level.

As shown in Table 2, in NI the statistically significant differences were between participants taking higher and mixed tiers. In Wales, the statistically significant differences were between those taking higher and foundation tiers; higher and mixed tiers; and mixed tiers and unaware of tiers. It is arguably unsurprising that those who are taking foundation tier, or a mixture of foundation and higher tier, are most likely to be affected by the grade cap and therefore to consider it unfair.

Table 2. Agreement with statement 'It's unfair that the highest grade you can get on the Foundation paper is a C', by country and reported tier (QUB study)

	Don't know	Higher paper for most	Foundation paper for most	Higher for some; foundation for others
NI	57.7 _{a,b}	56.2 _b	72.9 _{a,b}	75.7 _a
Wales	48.0 _{a,b}	50.3 _b	66.3 _{a,c}	74.6 _c

Note: Subscript letters denote subsets of the reported tier categories whose column proportions do not differ significantly from each other at the 0.05 level.

While there was some difference in views according to the tiers that students were taking, the majority of students in both countries agreed that the C grade cap at foundation tier was unfair. Moreover, in the surveys, 16 students in each country responded to the open-ended question asking 'Is there anything else you would like to say about tiering?' to argue that the C grade boundary for the foundation paper should be raised, in most cases calling for it to be replaced with a B grade. Respondents to both surveys also considered it to be unfair because students '*could be in foundation paper when they're capable of more*' (Survey, Wales, QUB study). This resonates with the findings of research studies which have indicated that, at least in some cases, students who excel at the foundation papers may have been able to achieve a grade above the C threshold had they been given the opportunity to do so (Wilson & Dhanwan, 2014).

The C grade cap at foundation tier led to difficult decisions for both students and teachers. At a non-grammar school in NI, students discussed the anxiety caused by tiering when asked whether they were happy with their tiers:

S1: ... *I've kind of been stuck with foundation throughout all my GCSEs because whenever it comes to the chance to do higher I've done awful when I take it because I'm nervous about if I can do it or not you know. And I can pass sometimes the foundation one easily but I don't know if I'd struggle with the higher one, so I'm a bit nervous, so I never take that step up really.*

INTERVIEWER: ... *do other people feel like that?*

S2: *yeah definitely [...]*

INTERVIEWER: ... *so there's worry about which tier you should be taking?*

S2: *yeah it's like you just want to take the safe option and take your pass or do you want to see if you can do better, but you don't really want to risk it if you know you can already pass.* (Non-grammar, FG, NI, QUB study)

The anxiety expressed here was based on the fear that taking a higher tier might result in failure, while the foundation tier had the potential to limit their attainment. For these students, taking the higher tier was '*a risk*', and so they tended to choose '*the safe option*'. Students in another group also made this point, noting that they'd '*rather be safe*' (Non-grammar, FG, NI, QUB study) and take the foundation paper. As a result, teachers appear to have developed strategies to maximise students' chances of attaining their C grade. This was illustrated by a pupil in Wales, who spoke

Table 3. Agreement with 'I worry about whether I'm in the right tier', by country and reported tier (QUB study)

	Don't know	Higher tier	Foundation tier	Foundation for some; higher for others
NI	30.8 _a	29.4 _a	32.9 _a	38.3 _a
Wales	46.0 _{a,b}	25.3 _c	29.1 _{b,c}	44.4 _a

Note: Subscript letters denote subsets of the reported tier categories whose column proportions do not differ significantly from each other at the 0.05 level.

of taking two tiers for the same subject when asked which tiers she was taking for her GCSEs:

I'm doing like one foundation one higher because it's like to get a C it's 35/40 so you kind of need to be doing the right paper ... because otherwise you're just going to fail. (FG, Wales, QUB study)

The data from the QUB surveys suggest that only a minority of students are anxious about their tiering allocations. When asked to answer on a five-point Likert scale about the extent to which they agreed or disagreed with the statement 'I worry about whether I'm in the right tier', 31% of students in NI and 32% in Wales agreed. However, while overall levels of concern about tiering were not high, there was a statistically significant difference between participants' responses to this question by the tiers they were taking in Wales [$\chi^2(3) = 24.948, p < 0.001$], with a low to moderate effect size (0.173, $p < 0.001, n = 833$). Table 3 shows the proportion of students who agreed with the statement by tier in each country.

As shown in Table 3, the statistically significant differences in Wales were between those who did not know their tiers and higher-tier candidates, and between mixed-tier candidates and both foundation-tier and higher-tier candidates. The reason for the difference between those taking a mixture of papers and foundation-tier and higher-tier candidates may be that those who are taking one tier consistently for most, if not all, of their subjects feel more secure in this tier, whereas those who are in a combination of tiers might be more likely to be at the borderline of tiers and feel less confident about their allocations.

The results of the WISERD Education study investigated students' perceptions of tiering further, to see whether students taking foundation and higher tier were content with their tiers. Students were asked 'What tier are you in for science?' and 'What do you think about being in this tier?' The options for the second question were 'I am happy in my current tier', 'I would prefer to be in higher tier' and 'I would prefer to be in foundation tier'. The latter two options have been condensed into one 'want to change' option in Table 4. Only those who answered both questions were included.

The difference between foundation and higher-tier candidates was statistically significant [$\chi^2(1) = 25.544, p > 0.001$] with a moderate effect size ($-0.323, p > 0.001, n = 245$). The results indicate that higher-tier candidates are more likely to be happy with their tiering allocations than those taking foundation tier. Those who wanted to change tier were asked to explain their answers. Typical responses from foundation-tier candidates related to wanting to attain higher grades and finding foundation

Table 4. Satisfaction with current tier, by tier taking (WISERD Education study)

	Happy in current tier	Want to change tier
Foundation tier	69.2	30.8
Higher tier	93.6	6.4

limiting, with reasons such as ‘because I don’t think I can achieve my fullest’ (Survey, WISERD Education) and ‘I understand the foundation tier & find it quite easy’ (Survey, WISERD Education). Responses also suggest that students believe that the atmosphere in classes taking foundation tiers are not always conducive to learning. For example, one student wanted to move to higher tier ‘so the people around me support me to be better’ (Survey, WISERD Education) and another complained that in the class ‘people mess around’ (Survey, WISERD Education). Those who wanted to move to foundation tier generally discussed the difficulty of the work: ‘The work is really hard’, and highlighted the pressure and stress of the higher tier: ‘*as I feel stressed a lot and feel the pressure to achieve a high grade*’.

Awareness and understanding of tiering

Despite the anxiety raised around tiering by some students, and the perceived risks of choosing the wrong tier, it emerged that many students had a poor understanding and awareness of the tiering system. The qualitative data emerging from the responses to the question ‘Is there anything else you would like to say about tiering?’ on the QUB survey suggest that there was a perception that it was more difficult to attain a C grade on the foundation paper than the higher paper, with six survey respondents in Wales and 10 in NI making comments about how it ‘*can be harder to get your C grade*’ in the foundation paper (Non-Grammar, Survey, NI, QUB study). There was some variation in views on this subject, with four participants in Wales making comments such as ‘[d]oing foundation tier means it’s easier for you to get a C [...] than if you do higher and put loads of work in’ (Survey, Wales, QUB study). However, the prevailing view was that it was harder to achieve a C grade on the foundation paper. The topic also generated a great deal of discussion in the focus groups, which revealed a common perception that foundation ‘*if anything [it] is harder because you need . . . to literally get like full marks just to get a C*’ (FG, Wales, QUB study). While several students appeared to hold this view, Wheadon and Béguin (2010) found evidence that the opposite is true: examiners tend to mark easier questions more generously. Therefore, contrary to the belief of many, students may find themselves better rewarded in a foundation paper.

The data from the QUB study suggests that the majority of students in NI and Wales were aware of which tiers they were taking. Students were asked: ‘Which tier of exam paper are you taking for most of your GCSEs?’ They were given a series of options, including ‘don’t know’, ‘higher for most subjects’, ‘foundation for most subjects’ and ‘higher for some; foundation for others’. Notably, only 4% of NI students and 6% of Welsh students reported being unaware of their tier allocations. These

findings accord with those of Baird *et al.* (2001), which found that students had a good overall understanding of their tiering allocations. They also reflect the research of Boaler *et al.* (2000), which found that although students in the first year of their GCSE study were often unaware of their tiers, by the final year—when this research was conducted—most students knew which tiers they were sitting.

To investigate young people's understanding of tiering further, a more specific question was asked to 14–15-year-old GCSE students in the 2017 WISERD Education multi-cohort survey about which tier they were in for science. The proportion of students answering 'don't know' to this question was far higher than the proportion who gave the same answer in the more general question in the QUB study (6%). In the WISERD Education study, 25% answered 'don't know'. While students were asked this at a relatively early point in the course—in spring of their first year—and may have a better understanding by their final year, as Wilson and Dhawan's (2014) research has suggested, it is important to remember that it is very difficult to move between tiers because of the restriction of the curriculum on the foundation tier, and so awareness of tiers at an early stage is essential.

Students were also asked about their understanding of the grade ranges on tiers in focus groups for the QUB study. They were presented with a graphic outlining the grade boundaries for two-tiered GCSEs and asked whether they were aware of the highest and lowest grades they could achieve before they were shown the sheet. The findings suggest that while the majority of students were aware of which tiers they had been entered into, there was a mixed level of understanding about the grade boundaries for tiers. Students from five out of the 10 NI focus groups were unaware of the grade ranges available on the different tiers, with some expressing surprise when presented with the graphic outlining the grade boundaries:

INTERVIEWER: . . . before I showed you the graphic were you aware of the highest and lowest grades you could get in most subjects?

S1: no

S2: is an E a pass?

S3: no—C's a pass. (Grammar, FG, NI, QUB study)

In Wales, students from four out of the 10 Welsh focus groups were unaware of the grade boundaries, with the most common source of misunderstanding being over the lowest grade available on the higher tier. The following example was typical of these:

S1: I didn't know about the lowest ones but I knew about the highest.

S2: yeah I didn't know you could pass it pass at an E. (FG, Wales, QUB study)

The most problematic finding was that a number of students believed that the C grade was the lowest available grade on the higher paper, and were unaware that they could attain a D on this paper. This supposition might encourage a student to choose the foundation tier in order to guarantee their C grade, rather than risk sitting the higher-tier paper.

In order to test whether a wider range of students had a poor understanding of tiering, students from the WISERD Education multi-cohort study were asked to identify

the highest and lowest grades they could achieve on their tiers for science. As shown in Figure 1, students taking the higher tier tended to have a good understanding of the highest grade available to them, with 94% correctly identifying it as an A*. The majority of students taking the foundation tier (62%) were aware that the highest grade they could achieve was a C. However, 36% of these students mistakenly believed that they could achieve a B or higher.

Moreover, as shown in Figure 2, only 50% of students taking foundation tier correctly identified the G grade as the lowest grade they could achieve. In addition, 57% of students taking the higher tier mistakenly identified the C grade as the lowest available to them on their tier, echoing the findings from the QUB focus group discussions in NI and Wales.

These responses suggest that there is a great deal of uncertainty and confusion regarding tiering in the GCSE amongst students in Wales.

Alternative forms of differentiation to tiering

Previous qualitative research by Baird *et al.* (2001) also found high levels of support for tiering among students, and suggested that students' lack of awareness of alternative examining systems might be a factor in this. Thus, focus group participants in the QUB study were asked what they thought about three alternative methods of differentiation. Prior to beginning the focus group discussions, students were given information sheets explaining three different models: core plus extension, common papers and adjacent levels. The researcher read through the sheet with the students, provided them with opportunities to ask for further clarification if necessary, and ensured that all participants understood the new models. They were then asked questions about their views on them during the focus group interviews, such as what they thought about these options, and having seen these, whether they still believed tiering was the best option or whether they would prefer one of the methods presented.

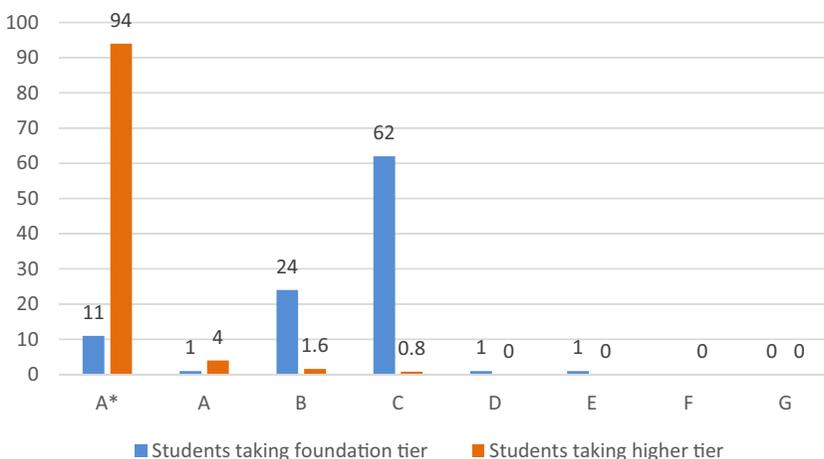


Figure 1. Students' perceptions of the highest grade available on their tier (WISERD Education study) [Colour figure can be viewed at wileyonlinelibrary.com]

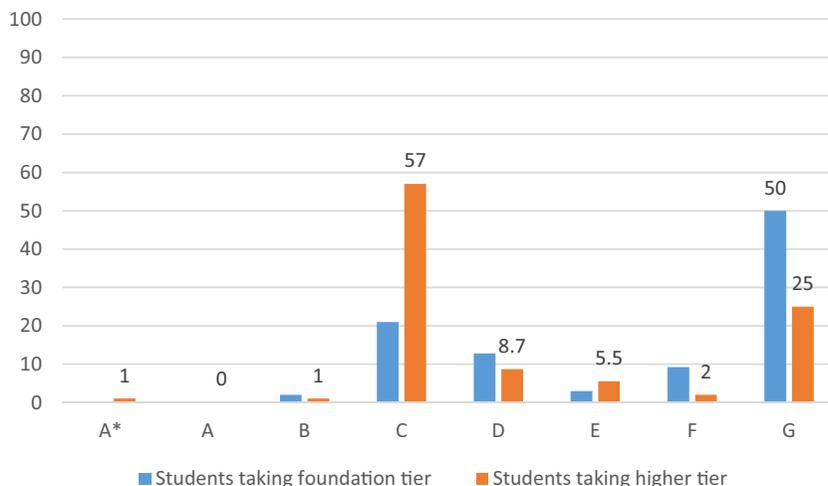


Figure 2. Students' perceptions of the lowest grade available on their tier (WISERD Education study) [Colour figure can be viewed at wileyonlinelibrary.com]

In this study, there was no support for adjacent levels, which was regarded by students as being overly complicated. However, there was some support for core plus extension and common papers, and so student views on these will be discussed below.

Core plus extension papers. Core plus extension papers were relatively popular among focus group participants: they were perceived to be 'safer' (FG, Wales, QUB study) because they reduced the risk involved in choosing tiers:

S1: ... if you want say a higher mark or get a higher grade you can do that without endangering your previous mark so you're ...

INTERVIEWER: ... so it's less of a risk? And did you think the same?

S2: yeah I agree ... that the core plus extension just sounds like the most achievable and if you wish to go any higher you have the option and the extension whereas some of the others it's just it doesn't give you that option. (Non-grammar, FG, NI, QUB study)

In five of the Wales focus groups, and in nine of the NI ones, students made positive statements about the core plus extension model. Several commented that one of the advantages was that core plus extension gave them 'the choice' to decide whether to take additional papers (FG, Wales, QUB study). These views resonate with those of teachers in a pilot study which used core plus extension (Burghes *et al.*, 1998). In this research, teachers reported that they liked it because it had the potential to prevent arguments between schools, parents and pupils over which tiers students should enter.

However, disadvantages associated with core plus extension were also raised in some of the discussions. For students who were comfortably achieving the higher grades, having two examinations seemed pointless:

I mean if there's somebody knows they're gonna get an A it's just you know there's no point in them like trying to learn all the stuff necessary if they don't have to. (Grammar, FG, NI, QUB study)

In five of the focus groups in Wales and six in NI, students made the point that having an additional examination paper would be unfair. At a non-grammar school in NI, for example, one student stated that it wouldn't *'be overly fair on people who are going for the extension paper cause they would have to do two exams'* (Non-grammar, FG, NI, QUB study). Another student in Wales went further, noting that core plus extension involved:

punishing the [most able] people—like taking an extra exam if you wanna do better and half of them would not bother taking it cause it's extra work cause we have a lot to do anyway. (FG, Wales, QUB study)

The view that the extension paper constituted too much additional assessment time for the most able pupils was also raised in the literature by He *et al.* (2015). Interestingly, while He *et al.* suggest that the lack of risk involved with core plus extension might increase the number of inappropriate entries, the participant in the example above suggests that it may have the effect of de-incentivising more able candidates instead.

Common papers. While tiering was preferred in general, the topic of common papers did stimulate a great deal of discussion in the focus groups, with several debates over whether it was better at assessing ability than tiered papers. Much of the discussion revolved around whether a common paper could really assess the full range of ability. Several students commented that the *'common paper would be too general'* (Non-grammar, FG, NI, QUB study). There was concern that the paper would be too challenging for some students and that this would have a negative impact on their motivation, which would then *'discourage'* students (Non-grammar, FG, NI, QUB study). At one school in Wales there was an in-depth discussion about whether or not it would be possible to create an examination paper that would be appropriate for everyone:

S1: ... *but how would you make it common? Like how could you make something common to everybody?*

S2: ... *you wouldn't just take the higher tier and make it common would you. Cause it's not common then. Like does that make sense—like how can you make it common? (FG, Wales, QUB study)*

These students did not believe that it was possible to create a paper that could cater for the needs of all students. However, some students disagreed with these points, and contended that the benefits of common papers outweighed these disadvantages:

... if you all do the common paper ... there's no overlapping it's all gonna be the same—so people who get a C will be at the C level and people who get Bs will be at the B level and people who get As will be at A level.

(Grammar, FG, NI, QUB study)

The students who argued for common papers were concerned about the comparability of grades in tiered papers. This issue is reflected in the literature on tiering, which has suggested that grades are not always comparable across tiers (Baird *et al.*, 2001). Many of these students saw common papers as levelling the playing field, so that ‘*everyone’s equal*’ (Non-grammar, FG, NI, QUB study). Again, issues of fairness and equality were paramount for students, with judgements made based on students’ conceptions of what would give the fairest and most accurate picture of students’ abilities.

Discussion

This study provided students with the opportunity to voice their opinions in the national debate regarding tiering, providing them with information and guidance to enable them to give informed answers, in line with international child participation standards. The results of the QUB study indicate that the majority of students support the retention of tiering. The key reason given by participants to explain their support was that tiering enabled all students to complete examinations appropriate for them. This reflects why tiering was originally introduced, and why it has been retained in some subjects. However, the support for tiering was not unanimous, and when we analyse participants’ responses by reported tier, the results suggest that the negative effects disproportionately affect those taking the foundation tier. In the WISERD study, these students were more likely than higher-tier candidates to want to change tiers—there appeared to be little concern amongst those taking higher tier about falling below the D grade boundary, and much frustration expressed by those taking foundation tier about the C grade cap. When we look at the QUB data, this is nuanced further—the results suggest that those students who are taking a mixture of foundation and higher-tier papers are most likely to perceive the C grade cap to be unfair. In Wales they are also more likely than those taking higher and foundation tiers to express anxiety about tiers. One possible explanation is that those taking a combination of tiers might be more likely to be performing at the ‘borderline’ of tiers, and therefore associate tiering with risk, a view that was expressed in some of the focus groups as well. More research on this issue, with linkage between survey and attainment data, is necessary to confirm this.

It appears that those students taking foundation tiers, particularly those taking both foundation and higher papers, are most likely to feel disadvantaged by tiering. Thus, interpreting these results from a children’s rights perspective requires a delicate balancing of the rights of all children to education, best interests, non-discrimination and participation. It is important to respect the views of the majority of children who support tiering, and to recognise that tiering does have advantages, such as ensuring that children are not given papers with too high a level of demand which might disincentivise them. It also helps ensure that assessment is efficient—so that pupils do not have to use valuable examination time completing questions they can easily answer. However, we must also consider the cap the tiering system places on attainment and learning. Moreover, while giving due regard to the views of the majority of children is important, it is also essential that we recognise that children are not a homogenous group. To fulfil the right to non-discrimination, it is vital that governments listen

carefully to those who are disadvantaged by the system. They must take into account their perspectives alongside those of others.

It is clear that tiering is not in the best interests of all children, or that tiering supports all young people's dignity and self-esteem, as set out under the General Comment on Education (United Nations Committee on the Rights of the Child, 2003). Students in the QUB study recognised teachers' decisions about tiers as a judgement on their ability, and discussed the mental and emotional impact of being allocated to foundation tiers, which affected their relationships with friends and their self-esteem. The allocation to a 'foundation' or 'higher' tier makes a judgement on individuals which affects their perceptions of themselves as learners, and also places constraints on their ability to achieve through the use of the grade ranges attached to different tiers (Elwood & Murphy, 2002). These restrictions are reinforced by the curriculum attached to the tiers, which further limits students' potential, rendering it particularly difficult for students to move to higher tiers (Barrance & Elwood, 2018b).

Any alternative methods proposed must also be scrutinised from a children's rights perspective, and children's views must be taken into account in national debates regarding tiering and other examination features (Barrance & Elwood, 2018b). Neither of the alternative methods proposed to young people in this study, core plus extension and adjacent levels, were universally supported by the participants. While some students in our focus groups suggested that core plus extension would alleviate many of their anxieties around tiering, others stated that such a system would disadvantage those currently taking higher papers as they would have to take what they regarded to be 'unnecessary' additional examinations. Students' concerns about additions to their already heavy examination load should not be dismissed. This is not a minor issue, as an assessment system should be designed in children's best interests, and should not have a negative impact on their welfare (Elwood & Lundy, 2010). It also raises questions about fairness and validity, given that students perceive stress as a factor that can hinder their performance (Barrance & Elwood, 2018b).

It is possible that technological solutions could address many of these issues. Computer-based assessment is currently being introduced for Key Stage 2 and 3 testing in schools in Wales. In theory, forms of computer-based tests such as adaptive testing might mitigate some of the issues currently disadvantaging some learners under the GCSE tiering system: students would not need to be entered into a particular 'tier' beforehand, because the difficulty of questions presented would depend on how well students perform on earlier questions (He *et al.*, 2015). Further research should be conducted to consider whether introducing on-demand testing and other alternative forms of differentiation have any benefits over the current system of tiering, particularly for those pupils who are being entered into foundation tiers at present.

If tiering is retained, it is important that young people have more opportunities to become involved in decisions around tiering for their GCSE subjects. For this to happen it is vital that they have a good understanding of how tiers are structured, and an awareness of their own tiering allocations (Elwood & Murphy, 2002). The evidence from this research is that many pupils have a poor understanding of the grade boundaries on tiers, and some pupils taking foundation-tier papers are even unaware that they cannot attain higher than a C grade. Others are unaware that they can achieve a D grade on the higher tier, which is particularly concerning as it is possible that some

pupils have chosen to take foundation-tier papers on this basis. Meaningful participation opportunities should fulfil children's rights to information and guidance from adults (Lundy, 2007). To enable students to make informed decisions in their own best interests, it is important that they receive good-quality guidance and information from teachers about tiering (Barrance & Elwood, 2018).

The importance of ensuring that school students have a good level of assessment literacy is underestimated in much of the literature. Most of the research on assessment literacy currently focuses on teachers, or university students (Smith *et al.*, 2013). When it applies to students, it generally focuses on students' knowledge of assessment objectives and how to meet them, of their understanding of how to interpret feedback (Dann, 2015). Wiliam (2015) highlights that assessment literacy is a multi-faceted concept, and different groups will require different knowledge of assessment. For GCSE students, it is essential that young people have a good understanding of assessment procedures, such as how their attainment is restricted by tiering, as well as other assessment issues such as what proportion of their courses are assessed by examination, and how many times they can resit (Barrance & Elwood, 2018).

Conclusion

It is important that structural features of national assessment systems, such as tiering, are interrogated and evaluated in line with international human rights standards that governments have a legal obligation to fulfil. Tiers were introduced to ensure that students were given papers appropriate to their attainment range. The majority of young people support tiering, and while we must recognise this, we must also consider the disadvantages they cause for particular groups of children. Tiers are problematic given that children have a right to an education that develops their full potential, and yet the foundation tier restricts children's access to the highest grades, and denies them the opportunity to learn the full curriculum. Young people also have a right to an education that promotes their best interests: students' accounts of the emotional impact of being told they are in the foundation tier should be taken into account when considering this. Alternative methods of differentiation must be considered, and young people must be afforded meaningful opportunities to participate in national discussions on tiering to ensure that the examinations and qualifications system reflects the best interests of all.

Acknowledgements

Rhian Barrance received a scholarship to complete part of the research for this article from the Department of Education Northern Ireland. The doctoral research was undertaken at Queen's University Belfast. The article is also based on research supported by the Wales Institute of Social & Economic Research, Data & Methods (WISERD). WISERD is a collaborative venture between the universities of Aberystwyth, Bangor, Cardiff, South Wales and Swansea. The research undertaken through WISERD Education was funded by HEFCW (Higher Education Funding Council for Wales). Constantino Dumangane Jr. and Daniel Evans assisted in the collection

of data. The author would like to thank Jennifer Hampton for her assistance in the analysis of the quantitative data.

Ethical approval

The research at Queen's University Belfast was approved by the School of Education's ethics committee. The WISERD research was approved by the ethics committee at Cardiff University's School of Social Sciences.

Funding information

This work was supported by the Department of Education Northern Ireland and HEFCW.

Data availability statement

Research data are not shared.

NOTE

¹ One exception is WJEC mathematics, where there are three tiers and the highest grade on the foundation paper is a D.

References

- Baird, J., Fearnley, A., Fowles, D., Jones, B., Morfidi, E. & While, D. (2001) *Tiering in the GCSE: A study undertaken by AQA on behalf of the Joint Council for General Qualifications* (London, Joint Council for General Qualifications).
- Barrance, R. & Elwood, J. (2018a) National assessment policy reform 14–16 and its consequences for young people: Student views and experiences of GCSE reform in Northern Ireland and Wales, *Assessment in Education: Principles, Policy & Practice*, 25(3), 252–271.
- Barrance, R. & Elwood, J. (2018b) Young people's views on choice and fairness through their experiences of curriculum as examination specifications at GCSE, *Oxford Review of Education*, 44(1), 19–36.
- Boaler, J., Wiliam, D. & Brown, M. (2000) Students' experiences of ability grouping: Disaffection, polarisation and the construction of failure, *British Educational Research Journal*, 26(5), 631–648.
- Braun, V. & Clarke, V. (2006) Using thematic analysis in psychology, *Qualitative Research in Psychology*, 3(2), 77–101.
- Burghes, D., Roddick, M. & Tapson, F. (1998) *Report on a pilot project for a non-tiering GCSE in mathematics*. Available online at: www.cimt.plymouth.ac.uk/papers/ntgcse.pdf (accessed 9 June 2016).
- Camilli, G. (2013) Ongoing issues in test fairness, *Educational Research and Evaluation*, 19(2–3), 104–120.
- Smith, C. D., Worsfold, K., Davies, L., Fisher, R. & McPhail, R. (2013) Assessment literacy and student learning: The case for explicitly developing students 'assessment literacy', *Assessment & Evaluation in Higher Education*, 38(1), 44–60.
- Dann, R. (2015) Developing the foundations for dialogic feedback in order to better understand the 'learning gap' from a pupil's perspective, *London Review of Education*, 13(3), 5–20.

- Elwood, J. (2005) Gender and achievement: What have exams got to do with it?, *Oxford Review of Education*, 31, 373–393.
- Elwood, J. & Lundy, L. (2010) Revisioning assessment through a children's rights approach: Implications for policy, process and practice, *Research Papers in Education*, 25(3), 335–353.
- Elwood, J. & Murphy, P. (2002) Tests, tiers and achievement: Gender and performance at 16 and 14 in England, *European Journal of Education*, 37(4), 395–416.
- Gillborn, D. & Youdell, D. (2000) *Rationing education: Policy, practice, reform and equity* (Buckingham, Open University Press).
- Good, F. & Cresswell, M. (1988) Grade awarding judgements in differentiated examinations, *British Educational Research Journal*, 14(3), 263–281.
- He, Q., Opposs, D., Glanville, M. & Lampreia-Carvalho, F. (2015) Assessing pupils at the age of 16 in England – approaches for effective examinations, *The Curriculum Journal*, 26(1), 70–90.
- Ireson, J., Clark, H. & Hallam, S. (2002) Constructing ability groups in the secondary school: Issues in practice, *School Leadership & Management*, 22(2), 163–176.
- Isaacs, T. (2010) Educational assessment in England, *Assessment in Education: Principles, Policy & Practice*, 17(3), 315–334.
- Jerrim, J. & Sims, S. (2019) Why do so few low- and middle-income children attend a grammar school? New evidence from the Millennium Cohort Study, *British Educational Research Journal*, 45, 425–457. <https://doi.org/10.1002/berj.3502>
- Kane, M. (2013) Validating the interpretations and uses of test scores, *Journal of Educational Measurement*, 50(1), 1–73.
- Lundy, L. (2007) 'Voice' is not enough: Conceptualising article 12 of the United Nations Convention on the Rights of the Child, *British Educational Research Journal*, 33(6), 927–942.
- Lundy, L. & McEvoy, L. (2012) Childhood, the United Nations Convention on the Rights Of The Child and research: What constitutes a 'rights-based' approach?, in: M. Freeman (Ed) *Law and childhood* (Oxford, Oxford University Press), 75–91. <https://doi.org/10.1093/acprof:oso/9780199652501.003.0006>
- Ofqual (2017) *GCSE mathematics: Understanding schools' approaches to tiering*. Available online at: www.gov.uk/government/uploads/system/uploads/attachment_data/file/591000/2017-02-10_Report_on_maths_tiering.pdf (accessed 5 April 2017).
- Radnor, H. (1988) GCSE - Does it support equality?, *British Journal of Educational Studies*, 36(1), 37–48.
- Strand, S. (2007) *Minority ethnic pupils in the Longitudinal Study of Young People in England*. DCSF Research Report RR-029. Available online at: <https://dera.ioe.ac.uk/7916/1/DCSF-RR029.pdf> (accessed 6 May 2019).
- United Nations Committee on the Rights of the Child (2003) *General Comment No. 1 on the aims of education* (UNCRC/GC/2001/1) (Geneva, United Nations).
- Vitello, S. & Crawford, C. (2018) Which tier? Effects of linear assessment and student characteristics on GCSE entry decisions, *British Education Research Journal*, 44(1), 94–118.
- Wheaton, C. & Béguin, A. (2010) Fears for tiers: Are candidates being appropriately rewarded for their performance in tiered examinations?, *Assessment in Education: Principles, Policy & Practice*, 17(3), 287–300.
- Wiliam, D. (2015) Foreword: Assessment Literacy, *London Review of Education*, 13(3), 3–4.
- Wilson, F. & Dhawan, V. (2014) Capping of achievement at GCSE through tiering, paper presented at the *British Educational Research Association Conference*, London, September 2014. Available online at: www.cambridgeassessment.org.uk/Images/179607-capping-of-achievement-at-gcse-through-tiering.pdf (accessed 8 June 2016).
- Wilson, F. & Gill, T. (2014) *Entry for tiers in science and mathematics GCSEs: Teachers' views*. Cambridge Assessment Research Report. (Cambridge, Cambridge Assessment).
- WISERD (2019) WISERD Education multi-cohort study. Available online at: <https://wiserd.ac.uk/research/research-projects/wiserdeducation-multi-cohort-study>. (accessed 5 May 2020).