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1 **The effects of setting on classroom teaching and student learning in mainstream**
2 **UK Mathematics, English and Science lessons: a critical review of UK literature.**

3

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8

9 In the United Kingdom (UK) government pressures to raise attainment has led many schools
10 to implement structured 'ability' grouping in the form of setting (Hallam & Deathe, 2002).
11 The introduction of selective grouping has been justified with the assumption that the
12 differentiation of students by 'ability' advances students' motivation, social skills,
13 independence (Department for Education and Skills (DfES), 2005, 58) and academic success
14 in national tests and examinations (Ireson & Hallam, 2005) because students are "better
15 engaged in their own learning" (DfES, 2005, 58) This paper critically engages with this
16 assumption. Drawing upon qualitative research conducted in UK primary and secondary
17 Mathematics, Science and English setted classrooms the aim of this literature review is to
18 consider how teachers' pedagogic practices with low, middle and high 'ability' sets facilitates
19 and/or constrains students' learning and potential achievement. We also explore why, despite
20 strenuous criticism and moves towards egalitarianism in schools, the segregation of students
21 on the basis of 'ability' continues to be a common feature in schools in the UK. This literature
22 review draws attention to a number of substantive issues including (but not restricted to) fixed
23 and permanent grouping; the potential misplacement of students to sets and a culture of
24 stereotyping where learners within a set are taught as a single homogenous unit. We conclude
25 the paper by suggesting foci for future research in the hope of eliciting renewed critical
26 interest in and investigation of setting by 'ability' in a broader range of subjects of the
27 curriculum.

28 **Key words:** Ability, setting, ability grouping, experiences, learning

29

30 **Introduction**

31 In the UK government “achievement-based priorities” (Boaler, 1997a, 577) and
32 guidelines (Department for Education and Employment (DfEE), 1997; DfEs, 2005)
33 have encouraged the use of setting in schools (whereby students are grouped
34 according to their abilities in particular subjects) as a “panacea to underachievement”
35 (Boaler, 1997a, 577). The emergence and proliferation of setting by ‘ability’ in
36 primary and secondary schools in the UK has been explicitly advocated with the
37 assumption that the differentiation of students by ‘ability’ can help to: “Build
38 motivation, social skills and independence; and most importantly can raise academic
39 standards because students are better engaged in their own learning” (DfES, 2005,
40 58). Moreover, it is claimed, amongst other things that setting can facilitate teaching
41 by reducing the heterogeneity of ‘ability’ in a learning group (Macintyre & Ireson,
42 2002), enabling teachers to differentiate content, learning outcomes, teaching methods
43 and pace more precisely to the aptitudes of the students (Cahan, Linchevski, Ygra, &
44 Danziger, 1996). The contention is that ‘ability’ differentiated provision thus reduces
45 the likelihood that students will become overwhelmed by learning material that is too
46 difficult or be bored by material that is too easy (Hallinan and Sorensen 1987;
47 Chisaka, 2002).

48 The relative merits of ‘ability’ grouping in schools are, however, a matter of
49 longstanding and vociferous debate in the educational literature. Indeed, although the
50 DfEE (1997) and the DfES (2005) suggested that schools should consider the use of
51 setting by ‘ability’ as a means to ‘driving’ up standards of attainment in schools, a
52 corpus of research evidence (e.g. Slavin, 1987; 1990; Kulik and Kulik, 1982; 1992;

53 Ireson & Hallam, 1999) has disputed the educational value of ‘ability’ grouping,
54 demonstrating little systematic evidence that setting delivers “a net improvement in
55 student attainment” (Gillborn & Youdell, 2001, 86). Moreover, in the UK current
56 policies express a commitment to inclusivity and individualism; the idea that ‘all’
57 students, irrespective of background, have the same chances to advance to the top,
58 experience success (Evans, Rich, Allwood & Davies, 2007), and develop their skills
59 to a level commensurate with their abilities (Penney & Harris, 1997). Despite such
60 ostensible aspirations, there is compelling evidence that setting allocation procedures
61 are biased against some groups of students (Hallam & Ireson, 2007). Lower ‘ability’
62 groups tend to be disproportionately represented by ethnic minorities (Wright, 1987;
63 Tronya & Siraj-Blatchford, 1993; Ireson, Clark & Hallam, 2002) and children in low
64 socio-economic status (Boaler, 1997a; 1997b; Wiliam & Bartholomew, 2004). Setting
65 has also been implicated in the production of social stigmatisation (Chisaka, 2002),
66 lowered academic expectations (Ireson, Hallam & Plewis, 2001), decreased
67 motivation (Saleh, 2005) and disenchantment among students in lower groups
68 (Gillborn & Youdell, 2001). Notwithstanding of an extensive academic discourse (e.g.
69 e.g. Slavin, 1987; 1990; Ireson & Hallam, 1999) that promulgates that structured
70 ‘ability’ grouping does not “raise academic standards” (DfES, 2005: 58) (the rationale
71 which serves to validate the widespread adoption of setting) the practice of setting
72 continues to pervade the school system in the UK. Specifically, setting is most
73 prominent in secondary schools and normalised in subject areas including
74 Mathematics, English and Science.

75 We might reasonably ask why then, despite overwhelming and unambiguous
76 research evidence, such organisational strategies have become institutionalised,
77 routinized and normalised practices in so many schools in the UK. According to Kelly

78 (1978, 6) “any evaluation of streaming [read setting] must begin with a consideration
79 of why it was introduced in the first instance, since one must look very closely at the
80 assumptions upon which it was and in some cases still is based”. The purpose of this
81 paper is therefore twofold; we start with a broad literature review of discussions about
82 setting to identify what we know, what still needs to be known and whether setting as
83 enacted in classrooms is achieving the basic features which ultimately justify its
84 existence in schools. Subsequent to this analysis we endeavour to challenge a number
85 of assumptions regarding the nature of ‘ability’ that have typically remained
86 unproblematised and suggest a need for research on setting to engage with the concept
87 of ability in a more critical way. Specifically, the paper addresses the following
88 questions:

- 89 1. How do teachers’ pedagogic practices within low, middle and high sets
90 facilitate and/or inhibit student learning?
- 91 2. How is ‘ability’ conceptualised amidst dominant discourses of setting?
- 92 3. Is setting, as enacted in schools, succeeding in achieving the aims and
93 assumptions upon which is it founded? – Namely, to advance students’ “motivation,
94 learning and attainment”? (DfES, 2005, 58).
- 95 4. With a significant body of research evidence questioning the educational value
96 of ‘ability’ grouping, why does the use of setting continue to be a common feature in
97 primary and secondary schools in the UK?

98

99 **Method**

100 *Search and selection criteria*

101 In considering the effects of ‘ability’ grouping we were mindful that the organisation
102 of students in schools differs between the UK and internationally (Ireson & Hallam,

103 2009). Research from the USA was excluded from the literature search on the basis
104 that the predominant form of ‘ability’ grouping utilised is streaming, a process
105 whereby, students are separated by academic ‘ability’ for all subjects within a school
106 (Gamoran, 1986). This literature review focuses on setting as opposed to streaming
107 and/or tracking for two reasons. Firstly, setting is the prevailing form of ‘ability’
108 grouping in the UK in most subjects and the “preferred approach by governments”
109 (Abraham, 2008, 855). Secondly, we focus on setting in the UK to ensure that the
110 findings we draw upon are not confounded by cultural equivalences in educational
111 systems, policies and cultural attitudes. This is not to suggest that the effects of
112 streaming (or other forms of grouping) are any less significant, rather it reflects our
113 view that adequate investigation of other forms of grouping would require a separate
114 review. In this regard intervention studies were only eligible for inclusion in our
115 review if they were located in primary, middle and/or secondary schools in the UK.
116 No date restrictions were applied to our inclusion criteria. Lastly, the literature on
117 ‘ability’ grouping is substantial. Due to word count restrictions we only have
118 sufficient space to focus on one or two facets of ability grouping debates – students’
119 and teachers’ perspectives on, and experiences of setting. This literature review is
120 concerned with ‘experiences’ and therefore studies that did not focus on the
121 perspectives of students and/or teachers were excluded from analysis.

122 In an endeavour to locate relevant empirical research to inform this literature
123 review initial electronic database searches were directed by the use of inclusion
124 criteria and specific key terms (ability grouping, setting, UK, schools, experiences)
125 extracted from the proposed research questions. These five conceptual components
126 were subsequently translated into five electronic databases (Applied Social Sciences
127 Index and Abstracts (ASSIA), British Education Index, Emerald, Zetoc, Current

128 Educational Research in the UK (CERUK)) and four online journals (British
129 Educational Research Journal, Journal of Curriculum Studies, British Journal of
130 Educational Psychology, International Journal of Research and Method in Education).
131 This search strategy yielded thirty-two references of potential relevance. Specific
132 efforts were made to identify grey literature not identified in initial electronic searches
133 via an electronic database that records details of unpublished reports: System for
134 Information on Grey Literature in Europe (SIGLE). We found one unpublished paper
135 through this search method. Reference lists of pertinent retrieved articles were also
136 scrutinized to seek out further relevant research. This process generated a further five
137 articles. Finally, contact (via e-mail) was made with authors of papers that had met the
138 inclusion criteria to identify further publications that may have been disregarded or
139 missed by our search strategy. This approach yielded one research article. Once titles,
140 and where obtainable, abstracts were assessed, hard copies of the thirty-nine papers
141 were retrieved and examined in detail. Of these papers ten studies met our requisite
142 inclusion criteria and were accordingly included in our literature review (see table 1).

143

144 *(Insert table 1 here)*

145

146 ***Study characteristics***

147 The methodological details of the studies included in this literature review; their
148 designs, context and participants are described in table 1. The studies that we draw
149 upon to address our specific research questions share important methodological
150 commonalities. First and foremost, the empirical data used to inform this literature
151 review are located in schools in the UK. For the most part researchers have considered
152 the experiences of ‘top’ and ‘low’ set ‘primary’ and ‘secondary’ school students in

153 'Mathematics', 'Science' and 'English'. A relatively lesser emphasis is given to the
154 setted experiences of middle set students and the experiences of setted students in
155 subjects beyond Mathematics, English and Science. Importantly, therefore the
156 findings of this literature review are discussed in relation to UK primary and
157 secondary school Mathematics, English and Science classroom contexts.

158

159 *Extraction*

160 Subsequent to the identification of ten research papers, a systematic process of
161 inductive thematic coding was employed for analysing the data-set. Principally, the
162 results of the research papers were rigorously read and re-read multiple times in order
163 to identify potential themes, patterns and inconsistencies within and across the data
164 set. These patterns were interpreted and assigned a label. All data related to the
165 emerging pattern were extracted directly from the selected articles and aggregated to a
166 structured summary table under the identified theme. This process not only made
167 possible the identification of commonalities permeating the data, but also enabled the
168 comparison and synthesis of the data-set. Where patterns from the research article
169 appeared incompatible with the emerging theme, additional themes were developed to
170 define these patterns. Although we did not utilise any pre-conceived categories for
171 data analysis; preferring themes to emanate directly from the data, it is important to
172 note that data were analysed by coding with reference to a narrow selection of issues;
173 namely – students and teachers experiences of setting. Three main themes were
174 identified and form the basis for the discussion of findings that follows.

175 As mentioned previously there is insufficient space to do the range of 'ability'
176 grouping discussions and research conclusions justice here. Although there is now a
177 vast international literature on 'ability' grouping it is noteworthy that there has been a

178 relative paucity of research in either primary or secondary school contexts which has
179 explored teachers' and/or students' experiences of 'ability' grouping (Hallam, Ireson
180 & Davies, 2004). Our focus seeks to respond to this situation, directing attention to
181 students' and to a lesser extent, teachers' experiences of setting as a form of student
182 organisation and differentiation. Clearly, it could be argued that a dearth of critical
183 substantive research on students' experiences of setting points to a need for more
184 empirical work in the sphere, rather than a literature review of the small cadre of work
185 that already exists. However, there is also an argument to be made for accumulating
186 as much data as possible to establish what we already know and what remains to be
187 learned (Wilkinson, Littlefair & Barlow-Meade, 2013). The latter position informs
188 this literature review. Central to our analysis, is the conviction that the way in which
189 'ability' is conceived and applied in decisions about setting may be notably limited
190 and narrow. We point to a need to deconstruct and consider critically the ways in
191 which inherently inequitable and exclusionary categories of 'ability' are generated
192 (e.g. through testing mechanisms) and endorsed through the practices and processes of
193 setting (Evans, Davies & Wright, 2004).

194

195 **Critical review**

196 *Allocation to Groups and Movement between Groups*

197 One aspect of setting that surprisingly, has received very little research attention is the
198 basis upon which students are allocated to sets. We specifically highlight this issue
199 here because of the indication that follows, that there is a lack of student mobility
200 between sets. This points to the significance of students' initial allocation to a set in
201 relation to how they are positioned within the school system and the sorts of learning
202 opportunities that they will have access to, and thus, to the need for critical

203 investigations of the criteria and processes associated with setting decisions. Notably,
204 Davies, Hallam and Ireson (2003) and Macintyre and Ireson's (2002) studies revealed
205 that children are in many instances allocated to sets on somewhat arbitrary
206 characteristics including behaviour and motivation. As Hallam and Ireson (2007, 28)
207 acknowledge; "given that set placement can have profound and potentially damaging
208 consequences for an individual" including placing a maximum grade on what a
209 student can achieve "it is of great concern that allocation to sets is not based entirely
210 on academic achievement or perceived 'ability'". It is clear that 'some' students could
211 have their educational and achievement possibilities unjustly inhibited through
212 incorrect set placement that places them in a "markedly disadvantaged position in
213 relation to their final tier of entry into General Certificate of Secondary Education¹
214 (GCSE) exams" (Gillborn & Youdell, 2000, 113).

215 The importance of students being able to move sets has been stressed for the
216 successful operation of structured grouping systems (Ireson & Hallam, 1999).
217 However, although flexibility is emphasised in assumptions about setting, evidence
218 emerged in Macintyre and Ireson's (2002), Hallam and Ireson's (2006) and Hallam's
219 and Ireson's (2007) research that once allocated movement between sets is rare. Their
220 research reveals a absence of systems in place to facilitate the re-grouping of students
221 to sets and the lack of regular reconsideration of children's achievement as a basis for
222 correct placement in sets (Macintyre & Ireson, 2002; Hallam & Ireson, 2006). Hallam
223 and Ireson (2007) discovered that even when teachers are aware that students are
224 wrongly allocated to sets the students may not be assigned to another group. Teachers
225 in Macintyre and Ireson's (2002) and Hallam and Ireson's (2007) studies cited a lack
226 of flexibility, time pressures and differences in content covered in low, middle and
227 high 'ability' sets for a lack of vertical mobility between sets. The inferior instruction

228 received by students in lower sets, a slower pace of working and exposure to different
229 curricula serves to progressively widen the achievement gap between students in low
230 and high ‘ability’ sets (Gillborn & Youdell, 2000). Amelioration from low ‘ability’
231 sets is thus highly unlikely as a student transferring up will not have covered the
232 equivalent material required for the class they are joining (Boaler, Wiliam & Brown,
233 2000). As Gillborn and Youdell (2000, 126) contend “it may be, therefore that even
234 when movement does occur, the likeliest destination is downwards”. The practices of
235 setting thus appear to create fixed boundaries where developing capacity seems to
236 have a very limited relevance or utility (Wright & Burrows, 2006). Although
237 subsumed under the guise of setting as opposed to streaming, and signalled as a
238 radical departure from its predecessor streaming, it appears that setting as enacted in
239 schools embodies one of the most harmful features of streaming - its inflexibility.
240 This makes the initial selection of students to sets decisive in relation to their
241 ‘learning futures’. This point is reaffirmed by Gamoran’s (1986) finding that ‘ability’
242 grouping in primary schools constituted a consideration in placing students in
243 secondary school sets. Given the lack of movement between sets discussed above, it is
244 conceivable that students placed into a low set at an early age and characterised as
245 lacking ‘ability’ will continue to be placed in low sets throughout their school
246 existence. As Miah and Rich (2002) cogently argue, however, there are serious issues
247 of premature distinction and stratifications taking place in that some abilities might be
248 missed that may later develop in young people. We might reasonably assume
249 therefore that a student’s initial group placement will have considerable implications
250 for their eventual levels of achievement (Gilborn & Youdell, 2000). Further
251 longitudinal studies are however, needed to establish the cumulative effects of setting
252 over the years of schooling.

253

254 *Setting and pedagogy*

255 Given the apparent lack of rigor and reliability in mechanisms for allocating students
256 to particular sets it is possible that, within even the narrowest setting system, a set will
257 contain students with considerable variations in attainment as well as learning style
258 (Boaler et al. 2000). It is therefore highly problematic to assume and treat setted
259 students as intellectually homogenous (Ireson, et al. 2002). Nonetheless, Boaler,
260 (1997a; 1997b) in observations of teachers in Mathematics found that setted lessons
261 were conducted as though students were not merely similar, but identical, in terms of
262 learning style, pace of and preferred ways of working. Teachers in Boaler's, (1997a;
263 1997b) study overlooked the individual needs and abilities of students preferring to
264 pitch the lesson to an "imaginary average pupil" (Boaler, 1997a, 593) who works at a
265 certain pace and in a certain way (Boaler, 1997b). Teachers responded to setting by
266 embracing a 'one size fits all' approach to teaching in terms of both content and pace.
267 All students within a set were given identical work to complete at the same time and
268 at the same speed whether or not they found it easy or difficult (Boaler, et al. 2000).
269 In this way, students were not required to complete work at their own pace but rather
270 complete work at the pace of the set in which they were placed (Boaler, 1997a;
271 1997b; Hallam, Ireson & Davies, 2004).

272 The problems of setting associated with a lack of differentiation within any specific
273 setted class group are exacerbated further by virtue of the tendency for teachers'
274 expectations about pace and level of work appropriate to the learning capacities of
275 students in high and low sets to be stereotypical and fixed (Boaler et al. 2000;
276 Macintyre & Ireson, 2002). In Boaler et al.'s research top set students were regarded
277 as a group who did not experience problems or mistakes and did not need help or time

278 to think; “you are set 1 you shouldn’t be finding this difficult” (p. 641). In Boaler’s
279 (1997b) earlier work, some top set students reported that their mathematical learning
280 experiences were so stressful that they were unable to learn any mathematics. As such
281 the top set classroom environment in Boaler’s, (1997b) study was characterised by a
282 fast pace where students were expected to rush through learning materials without
283 necessarily achieving understanding. The prescriptive pedagogy exposes students to
284 rote learning orientations and surface learning where students only acquire sufficient
285 knowledge to complete tasks. Such teaching methods further preclude the
286 development of thinking, problem solving and a deep understanding of the learning
287 materials. Indeed in observations of Mathematics classroom teaching Boaler, (1997b)
288 discovered that students learned a method without an understanding of how it might
289 be used.

290 In contrast to the heightened expectations for students located in high sets, Boaler
291 and colleagues’ research (Boaler, 1997a; Boaler et al. 2000) found that teachers had
292 limited expectations for work and learning in low sets. The students in the low set
293 were perceived to be incapable of independent thought and were reduced to copying
294 off the board or textbooks for the majority of lessons. The fixed pace of the lesson
295 was also a significant problem as many students in the low set who had completed
296 work in the first five minutes of the lesson sat and waited with nothing to do for the
297 remainder (Boaler, et al. 2000). Indeed, the undifferentiated approach had important
298 implications for the learning of students across the ‘ability’ spectrum. With a small
299 number of students serving as reference points for the speed of the class (Boaler, et al.
300 2000) some students were frustrated at having to wait for slower students to catch up,
301 many found the pace of the class anxiety provoking and confusing, and others in the

302 same set found the pace of working and high expectations motivating (Hallam &
303 Ireson, 2006).

304 Contrary to the theory that the students most advantaged by setting are those most
305 able, the data from which this literature review is based suggests that those students
306 most advantaged are those who can assimilate material at a sustained high pace
307 (Boaler, et al. 2000). Accordingly, any student who deviates from the “prototype
308 model student” (Boaler, 1997b: 173) is disadvantaged. Setting in this regard can be
309 seen to support the learning experiences of a few students (e.g. those who learn at a
310 fast pace and/or whose learning preference aligns with the teaching approach being
311 used ‘for the set’) at the expense of the many others (e.g. students who learn at a
312 different pace and/or have preferences for other approaches). This finding is
313 consistent with Hallam and Ireson (2006) who similarly observed that a great number
314 of students were allocated to groups incompatible with their learning needs. Indeed, as
315 Sukhnandan and Lee (1998) argue setting ignores the fact that students’ rates and
316 styles of learning differ regardless of their levels of ‘ability’. In Boaler’s (1997a)
317 research, a student’s success (or failure) in the setted system had more to do with their
318 preferred learning style, pace of learning and their ‘ability’ to adapt to the demands of
319 the set in which they were placed than their ‘ability’ or effort. Thus, there is research
320 evidence to support a proposition that it may be more appropriate to group students by
321 learning style and pace of working than their perceived ‘abilities’.

322

323 *Stigmatisation*

324 Research has also revealed the stigmatisation arising in conjunction with setting.
325 Teachers are identified as proffering views that top set students are bright, hard
326 working and interested (Ireson & Hallam, 2005), while those in low sets are

327 pigeonholed as behaviour problems (Macintyre & Ireson, 2002), lazy and lacking
328 appropriate work ethic (Ireson & Hallam, 2005), and thus of limited ‘ability’.
329 However, had teachers stopped to reflect on these categories the demonstration of a
330 lack of motivation in low sets is perhaps not a reflection of a student’s personality or
331 preferred ways of being or acting (Hart, 1998) but rather a result of their despondency
332 as a corollary of low teacher expectations and the powerful and harmful restrictions
333 on their potential achievement. Contrary to the proposition evident in much of the
334 literature that top set students are advantaged by ‘ability’ grouping and the bottom set
335 students are harmed, there is therefore a range of evidence that links ‘ability’ grouping
336 to harmful learning experiences across the ‘ability’ spectrum for students in low and
337 high ‘ability’ groups (Boaler, et al. 2000). As we discuss below, the main purpose of
338 setting has also been found to be a major source of student disaffection (Boaler, et al.
339 2000).

340 Despite the fundamental principles upon which justifications for setting are based,
341 and specifically the rhetoric of ‘raising student attainment’ (DfEE, 1997); it seems
342 highly plausible to suggest that ‘ability’ grouping engenders low achievement,
343 resulting in a “situation where a majority of students achieve well below their
344 potential” (Boaler, et al. 2000, 646). Indeed, students in Boalers’, (1997b) study
345 explicitly linked their setting restrictions to their own disillusionment, demotivation
346 and underachievement. The implication is that many students wanted to do well but
347 were unwilling to exert effort as their lowly set placement deprived them of access to
348 the highest and higher achievement grades. A continued commitment to setting by
349 primary and secondary schools is thus questioned in light of extensive evidence that
350 has exposed the inadequacies of setting for a pronounced range of learners.
351 Contemporary practices of setting do not seem to have been informed by or grounded

352 in what we know from systematic research and practice (Boaler, 1997b). Why then, as
353 Boaler (1997b) asks, do these organisational strategies and processes persist in UK
354 schools? And why have politicians, education policy-makers and practitioners
355 invariably uncritically accepted and/or ignored the limitations of setting without
356 questioning the veracity of the process or its implications for students' affective
357 and/or academic outcomes? There are several possible answers to these questions.

358 According to Boaler (1997b) the fact that schools are largely prepared to disregard
359 the limitations of setting can be linked to a conviction across the educational
360 community that setting raises academic standards, at least for those high attaining
361 students. Boaler, (1997b) further suggested that by placing this notion within a
362 climate in the UK in which schools are exhibiting a concern for those students who
363 can gain them market place GCSE grades A, B or C a commitment to setting becomes
364 easier to comprehend. We present another explanation, citing how 'common sense'
365 assumptions about 'ability' confer legitimacy on the institutional practices of schools
366 that lead to student failure and inequities in the acquisition of educational
367 qualifications (Evans, 1993).

368

369 *An alternative interpretation of 'ability'*

370 As a notion that characterises contemporary education policy and practice 'ability', as
371 Evans and Davies (2004, 6) remark, "has come to be understood by policy makers,
372 politicians and practitioners" as "proxy for common sense notions of intelligence"
373 (Demaine, 2001, 2). Indeed, Hay (2005, 44) suggested that the prevailing view of
374 'ability' circulating in schools appears to be rooted in the "positive eugenic
375 perspective". An assumption of this perspective is that 'ability' is an inherent and
376 relatively immutable capacity, amendable to varying degrees by interventions such as

377 education (Hay, 2011), and which can be measured reasonably accurately through (for
378 example) written examinations (Gillborn & Youdell, 2000). However, as Hay (2005)
379 comments this way of thinking about ‘ability’ implicitly presupposes that poor
380 achievement in an assessment task reflects the learners predisposed ‘ability’ and
381 therefore is an indication of limited talent or lack of motivation or effort.. Differences
382 in achievement are therefore likely to be justified as an inevitable consequence of
383 natural variations in ‘ability’ or in terms of a students’ incompetence’s and/or
384 personal limitations (Wellard, 2007). According to Hay (2011, 97) these enduring
385 understandings about ‘ability’ and assessment are exclusionary because “the
386 differences in a young person’s potential, progress and performance in schools are
387 largely assumed and uncritically accepted to be the outcome of natural and largely
388 measurable factors”. One of the most crucial limitations of this perspective is that it
389 abstracts the analysis of the educational and organisational processes (e.g. grouping
390 policies) and the mechanisms (e.g. the assessment processes) that generate,
391 differentiate and in some cases constrain the achievement opportunities available to
392 students in schools (Hart, 1998; Wilkinson et al. 2013). In an educational climate
393 which validates educational achievement and/or underachievement by recourse to
394 natural and inevitable variations in predisposed ‘ability’ (as opposed to the inequitable
395 effects of educational practice), it becomes easier to understand why the
396 discriminatory and exclusionary effects of prevailing orthodoxies in schools (such as
397 setting) remain unquestioned and unremarked (Gillborn & Youdell, 2001).

398 In studying the relationship between ‘ability’ grouping and social inequalities
399 researchers have tended to limit their inquiry to highly formalised grouping processes
400 whereby students are allocated to sets on the basis of their results in tests and exams.
401 Although Hallam, et al. (2008) found that placement in practically based subjects (e.g.

402 arts and sport) are invariably based on classifications derived from academic subject
403 groupings, evidence also indicates that in subjects where there are no requisite exams,
404 student grouping arrangements becomes the responsibility of individual teachers.
405 Further, the tiering of exams² requires teachers to make firm and informal judgements
406 about students' abilities, set placement, predicted grades, and ultimately examination
407 entries (Gillborn & Youdell, 2001). What 'counts as 'ability'' in the minds of teachers
408 is therefore likely to play a critical role in the differentiating processes of students
409 within schools. Assessment is thus likely to include subjective appraisals of students
410 against standards and criteria (Hay, 2008), inherent in which are embedded (and
411 invariably narrow) views about 'what signifies "ability"' (Penney & Evans, 2004). To
412 quote Gillborn and Youdell (2000, 140):

413 The apparently concrete nature of each predicted grade when presented in written
414 form belies the uncertain and subjective nature of the processes that lie behind its
415 production. There is considerable scope for racialized interpretations of 'ability',
416 motivation and effort inadvertently to influence the kinds of grades produced.
417 This infuses the process with additional possibilities for predictions that are
418 inequitable or even discriminatory.

419 Given that there is a body of evidence which suggests that categories of 'ability' and
420 predicted grades can reflect inferences based on students' gender, class and ethnic
421 origin it is concerning that research on 'ability' grouping in the UK and
422 internationally has raised so few questions about the nature of 'ability' (itself), how
423 the recognition of and for abilities are established and conferred, through, for
424 example, testing mechanisms and teachers' predicted grades (Wright & Burrows,
425 2006; Penney & Hay, 2008), and the potentially limited/flawed conception of 'ability'
426 that is informing these measures/judgements. The work of Gillborn and Youdell

427 (2000; 2001) is a notable exception in research on setting. Consequently little is
428 known at present about how extraneous factors, such as social and personal
429 characteristics of the student, and social criteria, such as teachers' values and
430 assumptions about the nature of 'ability' enter into processes of selection and
431 differentiation in school curriculum contexts (Kelly, 1978; Evans, 1993); how race,
432 gender, social class and disability co-mingle in this process; and how testing
433 processes themselves encode and endorse particular expressions of 'ability' (Miah
434 and Rich, 2006). By questioning the socially and artificially determined practices of
435 teachers, including, for example, how they group or stratify students by 'ability' in a
436 range of subjects we can develop a more nuanced understanding of how and why the
437 abilities of certain students and groups of students are benefited and/or disbenefited in
438 setting decisions (Evans & Davies, 2004).

439 It is important to note that assessment procedures themselves construct "realities
440 around how we understand "ability"" (Miah & Rich, 2006, 267). For example, formal
441 tests (e.g. written examinations); purportedly used to gauge an apparently unequivocal
442 and objective measure of 'ability'; and the devices upon which selection decisions are
443 conventionally based only measure a finite range of abilities (Gillborn & Youdell,
444 2001). As Hay and Penney (2013) have emphasised, no such range is neutral and all
445 measures need to be recognised as value laden and by definition, destined to privilege
446 some 'abilities' over others. Thus, an important point to consider is that assessing
447 students against broader definitions of 'ability' and evaluative criteria (e.g. the ability
448 to think rationally and insightfully) may well result in 'more' or 'different' students
449 being considered 'able' which might not have been the case had the focus of
450 assessment been upon the ability to recall information in formal examinations
451 (Theodoulides, 2012). Hay and Penney's (2013) emphasis that the pedagogy of

452 assessment need to also be acknowledged as integral to assessment operating as a
453 message system that advantages some students over others, prompts critical
454 engagement with both the content and mode of assessment associated with the setting
455 process. Their work points to the need to deconstruct all aspects of assessment in
456 relation to the learning opportunities that are either enabled or denied amidst setting as
457 a pedagogical event and process, and the merit in foregrounding a socio-cultural
458 perspective in our analyses.

459 The latter directs attention specifically to assessment and setting as fundamentally
460 tied to the reproduction of established educational and social divisions and
461 hierarchies, and in this regard from the research reviewed, it seems reasonable to
462 suggest that the shortcomings of systems for allocating students to particular sets
463 could lead to a disjunction between a student's 'ability/ies' per se, their location
464 within a set, and thus their final tier of entry into GCSE exams. As Hay and Penney
465 (2009; 2013) identify, the shortcomings are not merely matters of reliability. Rather,
466 they are arguably better conceived in terms of efficacy, with that bringing to the fore a
467 need for a focus on learning, together with issues of authenticity, validity and social
468 justice in assessment (Hay & Penney, 2009; 2013). From this perspective the uses of
469 standardised tests do not necessarily signify a students' 'ability', nor necessarily
470 enable many students to effectively demonstrate their abilities. The results of such
471 tests provide a measure which gives some insight about a child's present development
472 level and previous learning. In this regard 'ability' tends to be conceived more in
473 terms of current achievement than the potential to achieve (Bailey, Morley &
474 Dismore, 2009). Thus, we echo the views expressed by Gillborn and Youdell (2000)
475 and Hallam, et al. (2008) who vividly point out that both the testing mechanisms and
476 the practices of setting seem to have been based on common sense notions of

477 intelligence as an immutable potential and as such reveal little about a student's latent
478 learning potential or future academic achievement. In addition, as Ireson and Hallam,
479 (1999, 150) comment "the use of such testing mechanisms bases the allocation of
480 students to sets on an assumption that general intelligence is a single entity that
481 predicts achievement at school". Indeed it is now widely accepted that students do not
482 have a fixed 'ability' that is determined at an early age (Boaler, 1997b), rather an
483 individual's 'ability' varies across time and can be attenuated through learning and
484 effort.

485

486 *Setting and subjects*

487 Although contemporary UK theorising has posed challenging questions of students'
488 setted learning experiences, such analysis has, with very few exceptions been
489 confined to Mathematics (e.g. Boaler, 1997a; 1997b; Boaler, et al. 2000) or English,
490 Mathematics and Science research contexts (e.g. Hallam & Ireson, 2003; 2005).
491 While setting is most prevalent in the aforementioned subjects, there is some evidence
492 to suggest that stratification and 'ability' grouping, along with the labelling and
493 segregation of the 'gifted and talented' and 'low attainers' (Evans, 2004) are
494 increasingly features of Physical Education (PE) departments in secondary schools in
495 the UK (Penney & Houlihan, 2003). Such a finding contrasts with Hallam, et al
496 (2008) who argues that practically based subjects (e.g. PE, Art, Music) rarely utilise
497 grouping by 'ability'. By restricting theoretical and empirical attention to a 'few'
498 subjects in the curriculum there is a conspicuous and arguably significant absence of
499 research that explores students' setted experiences in for example, PE, Music and
500 Modern Languages. There are strong arguments for researchers to go beyond a single
501 subject focus to question the implications of thinking and practices in various

502 curriculum areas in relation to students' experiences of setting and to pursue for
503 example, how or whether the processes described in English, Mathematics and
504 Science classrooms are similarly evident in the subject areas of, for example, PE,
505 Modern Languages and Humanities, or whether processes in such subjects are
506 informed by and/or convey different messages about 'ability'. Thus, we see merit in
507 research that seeks to explore how the dominant culture of 'ability' grouping within
508 schools and contemporary educational systems impacts students engagement in and
509 experience of multiple subject domains, and similarly, how it influences teacher
510 pedagogy in subjects other than English, Mathematics and Science specifically with
511 regard to the criteria teachers routinely employ to measure 'ability' and select and
512 position students for teaching purposes. Such research in our view has an important
513 theoretical and empirical role to play in informing a deeper and more holistic
514 explication of the processes of 'ability' grouping in schools both in the UK and
515 internationally.

516

517 **Conclusion**

518 In spite of the rhetoric of standards, individualism and inclusivity (defined as
519 providing opportunities for all students) (Evans et al. 2007) that circulate within
520 contemporary education discourse, the evidence presented in this literature review
521 suggests that the practices of setting, in their effect and outcome, are a major factor in
522 hindering the achievement of these ideological intentions (Thomas, 1993). The
523 opportunities to receive high achievement grades are not the same for all students as
524 placement in low sets and a lack of mechanisms for re-allocation set impenetrable
525 restrictions on examination entry and access to A*-B grades (Gillborn & Youdell,
526 2001). In this regard a student's initial set (mis)placement is likely to have a critical

527 effect on their potential attainment as a student placed in a low set is entered for an
528 examination which denies the possibility of attaining the higher grade passes
529 (Gillborn & Youdell, 2000). This is even more concerning in view of Davies et al.
530 (2003) and Hallam and Ireson's (2007) finding that students may be allocated to sets
531 on the basis of arbitrary aspects such as their behaviour (as opposed to measured
532 attainment or 'ability'). The misplacement of students to low 'ability' sets is a very
533 real problem with potentially severe long term deleterious effects including admission
534 to low tiered examination papers; papers which provide access to grades that have
535 little or no credence in the job and Higher Education Institution markets (Fitz, Davies
536 & Evans, 2006). We suggest that many students may be underachieving in schools not
537 because they lack 'ability' per se but rather because their achievement potential is
538 proscribed by systems of judgement that are not inclusive of diverse abilities, set
539 placements that lack reliability and efficacy (Hay & Penney, 2009; 2013) and a lack
540 of upward mobility. Collectively, these characteristics serve to explicitly preclude
541 many students from access to the learning opportunities and higher qualifications that
542 demarcate educational success and failure in schools. In this regard, although
543 established with the explicit agenda of raising standards, it appears conceivable from
544 the evidence presented in this paper that contemporary practices of setting in fact
545 engender low achievement at least for some students in schools in the UK.

546

547 **Notes**

548 1. The General Certificate of Secondary Education is an academic qualification
549 usually taken in a number of subjects by students aged 14-16 in secondary
550 education in England, Wales and Northern Ireland.

551 2. We use 'tiering' to denote the process whereby teachers allocate students to a
 552 particular difficulty level (tier) of a test. English and Science GCSE
 553 exams are formally examined in two tiers: foundation and higher. Students
 554 entered for the higher tiered exams have access to grades A*-D. However, any
 555 student who takes a higher exam and does not get at least a D attains a U
 556 grade. Those students entered for the foundation paper in GCSE Science and
 557 English have access to grades C-G. In 2006 GCSE Mathematics changed from
 558 a three tier system; foundation (D-G); intermediate (B-E); and higher (A*-C)
 559 to the standard two tiers outlined above. In the three tiered system students
 560 entered for the foundation Mathematics exams could not achieve a C grade.

561

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Article	Site of Intervention	Subject	Data collection	Participants: Teachers	Participants: Students	Sets
Boaler (1997a)	2 mixed 11-18 comprehensive schools	Mathematics	Observations Interviews Questionnaires	N/A	49 year 9 students who progressed to year 11	Top 4 sets and set 7 students
Boaler (1997b)	1 mixed 11-18 comprehensive school	Mathematics	Observations Interviews Questionnaires	8 mathematics teachers	Setted students as they moved from year 9 to year 11	Top set students
Boaler, William & Brown (2000)	6 secondary schools. 1 all-girls school and 5 mixed	Mathematics	Observations Questionnaires Interviews	N/A	Year 7, 8 and 9 male and female students	Top, middle and low set students
Davies, Hallam & Ireson (2003)	6 primary schools with different approaches to grouping	Core National Curriculum subjects: Maths and English	Semi-structured interviews	Key members of the teaching staff	Key stage 2 above, below and average 'ability' students	Streaming, mixed ability, setting
Hallam & Ireson (2006)	45 mixed gender secondary schools	N/A	Questionnaires	N/A	Year 9 students	Mixed ability, streaming, setting
Hallam & Ireson (2007)	45 mixed gender secondary schools	N/A	Questionnaires	N/A	Year 9 students	Mixed ability, streaming, setting
Hallam, Ireson & Davies (2004)	6 primary schools	Core National Curriculum subjects: Maths and English	Semi-structured Interviews	N/A	Key stage 2 above, below and average 'ability' students	Streaming, mixed ability, setting
Ireson & Hallam (2005)	45 mixed gender secondary schools	English, Mathematics and Science	Questionnaires	N/A	Year 9 students	Mixed ability, streaming, setting
Ireson et al (2002)	45 mixed gender secondary schools	English, Mathematics and Science	Interviews Key stage 2 test scores	N/A	Year 9 students	Mixed ability, streaming, setting
Macintyre & Ireson (2002)	Mainstream state primary school	Mathematics	Questionnaires Observations Interviews	N/A	Years 3-5 students	Within and between class ability grouping

Table 1

