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Ability Grouping

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Introduction

Grouping students on the basis of some estimate or judgment of their academic ability is a widely used approach in many countries to the organisation of pupils for instructional purposes, though its exact nature varies between and within countries. This review examines the nature and rationale for the use of ability grouping; it also summarises findings relating to academic achievement and explanatory processes.

Organising pupils in groups on the basis of ability provokes strong debates amongst educators, politicians, and parents. Its use is based on a belief that all students' attainment can be increased if instruction, learning support, the curriculum, resources, teacher expertise, and so on, are targeted at students according to similar ability level. However, many concerns are expressed about the potentially negative effects of ability grouping, particularly in relation to equality of opportunity, and access to curriculum, resources, and instructional expertise. Homogenous ability grouping tends to also organize students by socioeconomic background (SEB) and across racial lines (Oakes, 2005). As such many argue that it exacerbates and sustains existing societal divisions (Archer et al., 2018).

It is important to acknowledge that the notion of 'ability' as something that can be measured with reliability is questionable (Ireson & Hallam, 2001) and we know that schools rarely base decisions about ability grouping placement solely on measures of aptitude or attainment but also on other factors relating to the students concerned. The term ability grouping is thus something of a misnomer and many researchers prefer alternatives such as 'attainment grouping' or a specific term for the particular nature of the grouping, e.g., 'streaming'.

Homogenous ability grouping can take different forms and be present at different organisational levels within the school system. Students may be grouped by ability *within* classrooms (within-class ability grouping) and may receive differentiated instruction. Tracking or streaming refers to the allocation of students to different classes on the basis of similar ability levels for all academic subjects. The curriculum offered may differ between tracks/streams to match the perceived student

level. Another form of ability grouping, known as setting or regrouping, is similar to tracking but is particular to the curriculum area studied and therefore allows students to be in different ability group levels for different academic subjects. In these circumstances the same curriculum is usually accessed by all students. The opposite of ability grouping is heterogeneous ability grouping, sometimes known as mixed ability grouping, in which group composition reflects the school intake (although even here there are complexities as schools can also be selective). This review will only consider literature relating to ability grouping within schools and classes. Readers interested in other forms of ability grouping, should refer elsewhere (e.g., Chmielewski, 2014; Schoffield, 2010).

Research Evidence

There is a long history of research on ability grouping, including several meta-analyses and literature reviews. Findings from recent international studies, particularly the ongoing triennial PISA research, indicate consistent effects of ability grouping in relation to performance in reading, mathematics, and science assessments. The PISA studies involved data collections from 15-year-old students and their schools across up to 65 countries. This research compared the academic performance of students that had experienced homogenous ability grouping for all curricula, with those that experienced some ability grouping or none at all, and found that the more schools grouped by ability the lower the overall performance. Findings also indicate that the earlier that differentiation starts the greater the gap in achievement becomes by SEB, without any improvement in achievement overall. After controlling for student and school SEB, recent PISA studies found no independent relation between the grouping of students by ability and performance in reading or in mathematics. The PISA research concludes that “school systems that seek to cater to different students’ needs through a high level of differentiation in the institutions, grade levels and classes have not succeeded in producing superior overall results, and in some respects they have lower-than-average and more socially unequal performance” (Organisation for Economic Co-operation and Development [OECD], 2010, p. 13; see also OECD, 2012).

Another international study of students (aged 9-10 years) in 40 countries utilized data from the 2006 Progress in International Reading Literacy Study (PIRLS) to examine the effects of ability grouping on reading achievement (Chiu, Chow & Joh, 2017). This research utilized parental ratings of past literacy skills as well as measures of SEB, classmates family characteristics and school and teacher characteristics. Tracking was associated with lower reading achievement, whereas mixing within classes was connected to higher reading achievement. In particular, higher reading achievement was apparent when a student’s classmates were reported (by parents) to have had stronger literacy skills in the past or very weak skills, had a higher SEB or where there was more diversity in SEB and when classmates had higher reading attitudes or when there was diversity in reading attitudes. The authors explain that the mixing of students in classes enables sharing of attitudes to reading leading to positive consequences and enables positive help giving and seeking opportunities where both more able and less able students benefit.

However international comparison studies are often limited by their cross-sectional and correlational nature and are unable to offer causal explanations. Analyses are constrained to

making crude comparisons of types/levels of ability grouping and are unable to determine the effects of more flexible or informal systems as used in many schools or of uncontrolled variables (e.g. curriculum coverage, student composition, teacher expertise/experience and so on).

Meta-analyses of experimental and correlational studies examining the effect of homogenous ability grouping on achievement also show little overall benefit for the achievement of all students and where trends are reported, effect sizes are small (Kulik & Kulik, 1982; Slavin, 1987, 1990). Studies of tracked systems and comparisons of the achievement performance of high, middle, and low ability students show inconsistencies in reported effect sizes, though most are generally small (Hattie, 2002). A recent second order meta-analysis reviewed 13 previous meta-analyses involving 172 unique primary studies (Steenbergen-Hu, Makel & Olszewski-Kubilius, 2016) and found no evidence of a significant effect of between class ability grouping on academic performance both overall and in relation to prior attainment level. However, the majority of studies on ability grouping tend to involve the different groups undertaking broadly the same curriculum yet part of the purpose of ability grouping is to enable differentiation. Research that focuses on the co-occurrence of tracking and a differentiated curriculum shows more marked effects, which suggests that gifted and high attaining students tend to perform better in homogeneous ability classes, whereas those in the low ability range tend to fare worse in ability groups than in heterogeneous classes (Hallinan & Kubitschek, 1999; Schoffield, 2010).

Few studies have focused on the practice of “setting” in schools, yet there are advantages to this approach over tracking, most notably a greater flexibility in reassignment and potentially a closer match between instruction and individuals’ level of ability. Slavin’s (1987) meta-analysis included seven studies comparing setting and heterogeneous grouping at elementary school level in terms of performance in reading or mathematics. Results were inconclusive. More recently a naturalistic longitudinal study of the impact of setting on 6,000 secondary school students, from 45 UK comprehensive schools, found that the strength of setting experienced within a curriculum (from entirely mixed ability to rigorous setting experiences across the 3 years examined) showed no effect on student’s performance in national English, mathematics, and science assessments at 13 to 14 years and in a follow-up at 15 to 16 years (Ireson & Hallam, 2001; Ireson, Hallam, & Hurley, 2005). Similarly there was little evidence of an increased achievement gap. However, at 13 to 14 years, low ability students in mathematics made slightly more progress in response to mixed ability grouping and high ability students benefited from a more rigorous setting. Analyses controlled for SEB, previous attainment, and other background variables.

Studies of the effects of within-class ability grouping on achievement are rare. The advantage of within-class grouping over between-class grouping is its closer relationship with learning and teaching purposes, greater flexibility in reassignment, and greater opportunity for sustained interaction with teachers and peers. Meta-analyses indicate that within-class ability grouping may have modest to marked effects on student achievement in comparison to nongrouping or heterogeneous grouping (Lou et al., 1996) and a secondary meta-analysis of 5 meta-analyses reports significant small positive effects of within-class grouping on academic attainment with students at all levels benefiting (Steenbergen-Hu et al., 2014). Consistent with other findings on ability grouping, a

number of studies suggest that low attaining students appear to benefit most from mixed ability grouping. With average effect sizes varying markedly between studies and within meta-analyses, the effects of within-class ability grouping are unclear. This may be due to variations in task, instruction and interaction type and the group sizes that students within these groups experience (Baines, Blatchford, & Kutnick, 2003). As within-class ability grouping can be utilized for a range of pedagogic purposes (e.g., group instruction, peer-interactive learning) and may be embedded within a lesson involving other pedagogic practices, it is difficult to identify effects on performance beyond small scale experimental designs (Blatchford, Kutnick, Baines, & Galton, 2003). Studies of within-class grouping with an enriched or accelerated curriculum (e.g., for use with ‘talented’ students) suggest more substantial effect sizes than heterogeneous grouping (Lou et al., 1996), though this may be due to the different curricula undertaken.

Potential Causal Mechanisms. Although there is some disagreement in quantitative analyses about the impact of ability grouping between classrooms on academic achievement, effect sizes seem uniformly small to absent, suggesting that there is little to be explained (Hattie, 2002; 2009). Interestingly though, qualitative studies have illustrated how student experiences vary between low, middle, high, and heterogeneous ability groups, thus providing insights into explanatory processes.

Qualitative studies suggest that teachers have higher expectations of students in higher ability groups and lower expectations of students in lower ability groups (Boaler, Wiliam, & Brown, 2000). These expectations are reflected in curriculum and examination demands and through teacher–pupil interaction. Expectations may have marked effects on student motivation with some students benefiting from the pressure of high expectations while others are turned off learning by low expectations. Interestingly, studies have found that when students are located in ability groups above their achievement level they tend to make better progress than students of equivalent ability in groups that are at approximately the right level (Ireson et al., 2005). Placement in a lower group depresses students’ academic progress regardless of attainment level.

Studies also indicate that teachers alter their pedagogic approach according to their expectations about the ability range of the classes they teach (Boaler et al., 2000). This, of course, is part of the point of homogeneous ability grouping, but when accompanied by low expectations it may function to lower the challenging and motivating nature of teaching and learning. Research conveys a depressing picture of the low level and fragmented nature of teaching and learning in low ability groups. By contrast higher ability classes experience more interactive, challenging, sustained, and responsive teaching. They may also have more highly experienced/qualified teachers (Oakes, 2005). Studies suggest that where setting is accompanied by didactic instruction there is a wider disparity in academic performance across sets than when within-class groups and individualised instruction are used alongside setting (e.g. Wiliam & Bartholomew, 2004). Varying pedagogic approaches may go some way to explaining the variable effects associated with ability grouping.

Summary and Recommendations

Although there are seemingly obvious advantages to homogenous ability grouping, the evidence is

less convincing. Some studies report marked variability between schools thus explaining inconsistent findings. Either way research suggests that it is not the activity of between-class ability grouping per se that leads to the observed small effects on achievement but rather its interaction with curriculum, classroom, and student social and demographic characteristics.

A key attraction to the use of between-class ability grouping is that it enables instruction at a single level and direct instruction. However, ability groups are never completely homogenous and treating them as such can be problematic. A one-size-fits-all approach to instruction will tend to meet the needs of some students in the class while either constraining the learning of others or making them struggle to keep up. Without efficient and flexible structures to allow students to change groups, students may become disenchanted with learning. Research suggests that more could be done to make strategic and flexible use of within-class grouping practices for learning purposes. This may mean sometimes strategically mixing abilities for particular activities (e.g., peer-interactive learning) and at other times sustaining a more homogenous ability range to enable differentiation and support for students of all ability levels (e.g., through small-group instruction). When enmeshed with other pedagogic practices, such an approach may provide motivating, challenging, and mutually reinforcing instructional contexts that enhance student learning whilst engaging constructively with student diversity.

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