

# Inclusion, learning and teaching: beliefs and values



Ollerton, edited by Gates (2001) raises many issues in relation to beliefs and values of both educator and pupil in mathematics, giving examples of issues and solutions throughout the article. The main topics raised work around three main areas: opportunities through inclusion, the social and political aspects of teaching mathematics and the complexity of teaching mathematics. Within each topic, Ollerton refers to a number of contributing issues which will be discussed to some detail throughout. This essay will explain and critically analyse Ollerton's key points within the article and defining the main terms used. It will then progress to analyse the various pedagogical approaches suggested by Ollerton as well as setting and personalised learning. To conclude, the strength of Ollerton's argument will be assessed based on alternative research and educationalists theories.

### **Key Issues.**

The foundation of Ollerton's article is based on his the notions that " equality of education is embodied by inclusion ... learning and teaching mathematics are exceptionally complex ... teaching mathematics is a socially and politically charged business."

but some would argue that this is a naive view and that mathematics is much more complex than this (Mason and Johnston-Wilder, 2004). When looking deeper into Ollerton's first notion it becomes evident that we cannot have inclusion without equality, and looking into the second notion, that mathematics is indeed an extremely complex and intricate area of teaching and learning.

Ollerton suggests there is a severe lack of active learning taking place in mathematics and that there is a huge dependence on textbooks and written work. Ollerton suggests that reasons for the over dependence on learning through textbooks could be due to a lack of practical equipment for children and due to poor communication between staff about mathematical practise. In accordance with Ollerton's ideas on active learning, a Curriculum for Excellence (CfE) is promoting active learning, meaning that emphasis on textbook work in schools is becoming less prominent and the active engagement in mathematics is becoming more so (Scottish Government, 2009). Like Ollerton, the Scottish Government also identify that through effective implementation of active learning, interdisciplinary links can be easily established allowing for more inclusive practice as learning can be differentiated and taught at individual paces. Ollerton suggests that by teaching in this holistic way, learners can deepen and widen their knowledge and understanding of mathematics, coinciding once more with CfE (Scottish Government, 2009).

Throughout the article Ollerton refers to equality in learning and teaching noting that every child brings individual strengths in learning, not only in mathematics but in each curricular area. He shows enthusiasm in developing these strengths, irrespective of each child's ability and recognises the importance of pupil individuality and diversity. He also refers to the Cockcroft report (1982) which states that individuals needs can be catered for through use of effective differentiation and abilities developed and strengthened through extension work.

Ollerton conveys extremely negative views towards ability grouping and suggests that children's self-efficacy is heavily effected by the group they are put into, and that their subconscious ability is impacted by this also (Bandura, and Locke, 2003). McCormick and Pressley (1997) carried out a study that strengthens Ollerton's claims further, showing that children's self-efficacy impacts heavily on the group they are placed into. Ollerton further strengthens his argument by quoting Dixon (1999 : 1) who states that, "...a child's chance of remaining in its initial grouping for the rest of its school career are 88-89%"

In order to back up his evident personal opinion, Ollerton cites those who share the same view as him and fails to recognise that there are positive aspects to ability grouping. As he does not over-ride conflicting views within his article and brings the reader to question whether ability setting does indeed restrict and discourage children, or challenge and therefore encourage them within mathematics as there are many theorist and educationalist researchers who do have views that conflict with Ollerton (2001) and Dixon (1999) (Love and Mason, 1992, Boaler, William and Brown, 2000).

Key Terms: The Definitions.

Throughout the article Ollerton refers to " Mixed Ability Grouping" and " Setting by Ability". So what is meant by each? Whitburn (2001) cited in Hallam (2003) describes mixed ability grouping as children of varying abilities working within the same class where work is differentiated, collaborative and set at a pace and stage achievable by all. Mixed ability <https://assignbuster.com/inclusion-learning-and-teaching-beliefs-and-values/>

grouping is most predominant in primary education (Blatchford, et al., 2008), where children with varying abilities work in the same class, but work is differentiated accordingly. Setting by ability on the other hand is children are put into classes based on their perceived or measured ability – some children sit tests and are placed according to the scores they achieve (Blatchford, et al., 2008).

Mixed Ability vs. Ability setting: Which works better for who?

Ollerton discretely reinforces his negative opinion about ability setting consistently. In accordance to McCormick and Pressleys findings from their study “ Pygmalion in the Classroom”, Ollerton suggests that setting children by ability predetermines their future and can restrict children from reaching their full mathematical abilities. Linchevski and Kutscher (1998) again reinforce Ollerton and McCormick and Pressleys arguments by stating that if two pupils with the same ability get placed into two different sets then the one in the higher set will achieve more (pp 534). This raises further questions of social justice, inclusion and equality. Boaler, William and Brown (2000) and Gamoran (2002) suggest that socially disadvantages children are most likely to be low attainers, not only in mathematics but in other key curricular areas. Bearing in mind that these children are already socially disadvantaged, is it fair to restrict them through ability settings and disadvantage them further? For low attainers, it seems clear from this article, and other research that mixed ability settings are more suitable and provide more opportunity. But what about those gifted and talented in mathematics?

Based on McClure (2001), ability settings prove more rewarding for gifted and talented children as it provides children with a broader range of knowledge and they can learning can be broadened and deepened.

Supporting this, DfES (2006) conclude that ability grouping can “ help to build motivation, social skills and independence; and most importantly can raise standards because pupils are better engaged in their own learning”.

Not only this but Koshy (2001) states that ability grouping allows for better teaching and learning as teachers are able to determine children’s learning styles, strengths and weaknesses more easily. Linchevski and Kutscher (1998) and Gamoran (2002) both identify that mixed ability teaching can be detrimental to those more able in mathematics as the work may prove less challenging and so discourage and bore the able children.

So which should be implemented? Skemp (1987) identifies that pupil confidence is key when teaching and learning mathematics and found that those who had high self-efficacy in mathematics were more likely to achieve as oppose to those with low self-efficacy and self-belief who quickly gave up. Boaler, William and Brown (2000) alongside Mason and Johnston-Wilder (2004) state that if children are placed in a low ability group within ability settings, and know that they are in the lowest group, they will be more likely to give up and according to McCormick and Pressley, not achieve as highly as they possibly could. As Ollerton fails to acknowledge both sides of the argument in his article, it can only be concluded from alternative literature that mixed ability settings have more advantages for less able children, but ability settings has more advantages for able, gifted and talented children. With this in mind, a compromise of mixed ability setting as a whole school

approach, with ability setting within a class may be most beneficial and provide more opportunities for all learners.

#### Personalised Learning to Increase Self-efficacy.

When discussing ability grouping, Ollerton cites Dixon (1999) who claims that a mere 10% of students placed in ability groups will move up a group(s) from the one in which they were initially placed. If this is the case then by placing children into ability grouping, are teachers complying with the Scottish Government (2008) who note that it is the responsibility of the teacher to provide children with educational opportunities that will help them reach their full potential? In order to maximise children's self-beliefs, self-confidences and self-efficacies, an environment where every bodies personal strengths are respected and welcomed needs to be adopted to allow for development and progression through creating new opportunities for learning to occur (Bandura and Locke, 2003). Ollerton believes that as children develop and progress at different rates, then it is not possible to group by ability as it does hinder learning and lessen educational opportunities not only for less able but also for able students. If teacher's can effectively set stage appropriate, achievable goals for each individual child then learning can be personalised and will be more effective for the child (DCSF, 2008). When set by ability, Ollerton recognises that even the most able children can struggle as individuals possess very different learning styles and have strengths and weaknesses in different areas. For example one child might be very able at maths, but a poor reader and unable to read maths questions. One question raised from this is that of whether this can be realistically dealt with an ability set class? If the above problem were to

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occur it would bring with it issues of equality, social justice and educational opportunities. With this in mind, mixed ability grouping seems to yet again provide more advantages than disadvantages when looking at maths education holistically.

### Teacher Strategies and Approaches in Mathematics.

As mentioned previously, Ollerton heavily emphasises the importance of active learning as a pedagogy that helps to develop and progress children's mathematical understanding and attainment. The Scottish Government (2008) published "Building the Curriculum 3" which was then the next step in the construction of CfE, placed heavy emphasis on active learning, further developing studies by the Scottish Executive Education Department (SEED) (2004). As the Scottish Government and SEED began to collaborate in developing a new Curriculum, Scottish Education started to see a move from the very heavily textbook dependent 5-14 Curriculum toward a more practical, activity based CfE. CfE's Review of Research Literature however does still rely on textbooks not as a main resource for learning, but moreover as a resource to help support learning which clashes with Ollerton's approaches and strategies which are dependent on problem solving, discussions, presentations and group work.

### Conclusions.

Based on Ollerton's paper, it can be concluded that the argument he puts forward at a glance is very straight forward and succinct. However, after partaking in further reading and research there are many areas within this paper that should have been explored further in order to create a more

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informed argument. Ollerton does manage to successfully portray his ideas of inclusive education and the impact that it, alongside teaching, has on learning within mathematics specifically, though he does display recognition of other curricular areas throughout his paper. Mixed ability setting and ability setting lends itself to have been developed more as the reader is left not only unsure of what exactly mixed ability grouping is, but also uncertain about which one is most effective in the classroom. Harlen and Malcolm (1999) provide research that claims there is no evidence that ability setting has an impact on attainment, but does identify that within a mixed ability classroom, ability grouping proves to be beneficial to children's heightened attainment.

In conclusion, and with reference to Ollerton's article as well as Harlen and Malcolm (1999) a suggestion can be made: in order to maximise inclusive education, social justice and equality and to heighten the possibility of educational opportunities, classes should not be set according to ability. Instead, classes should comprise children of mixed abilities that hold ability set groups.

Overall, Ollerton delivers a sound, though one sided argument and provides solutions to the problems and issues he raises.