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Contents of this Issue

In this, relatively short, issue we have two very interesting articles. The first by Chris Tofallis, Thomas Dunk and Neil Spencer from Hertfordshire, after a forensic analysis of what MPs should be doing, focuses on constructing a 'League Table' of MPs performance in Parliament based on speeches made, written questions submitted and votes attended. The second by Manjinder Jagdev is another forensic examination of how racism permeated the national curricula for primary and secondary schools and how to get rid of it.

Because of a an internal mix-up, we have to profusely apologise to both sets of authors, as these articles should have been in RSN 132. Nevertheless, we think that both articles, and especially the first, will have increased interest because of the current chaos in the British government.

Prospects for RSN 134

We are in the very rare position of having two papers already for RSN 134 which will come out before the Sheffield Conference in February, one of them following on from the virtual conference that was hosted by the **Literary and Philosophical Society of Newcastle upon Tyne** on the theme of 'Taxing Wealth, Reducing Inequality', held on Saturday 26th February. We- the editors - will be pursuing the other presenters at that conference relentlessly in the next couple of weeks. Our new Review Editor, Irina Motoc <irinamotoc@gmx.com> also has several books for review, and is looking for volunteers.

Administrative Issues

Please make sure you have updated your subscription, *or make a donation!* - by going to www.radstats.org.uk/membership/ where you can pay by cheque, standing order, PayPal – see p.47.

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A Multidimensional Ranking of Members of Parliament

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Abstract

There has been a growing trend for public accountability of those who represent or act on behalf of the general public. Whilst politicians are forever appearing in the media to justify their actions, what has been lacking has been a broad objective measure of the amount of activity that they perform whilst in Parliament itself.

We present a first attempt at a multi-dimensional scoring and ranking of British Members of Parliament. Three criteria are included in the score: the number of speeches made, the number of votes attended, and the number of written questions submitted. We use the resulting scores to place MPs into four quartiles and then show how the political parties are distributed amongst these four 'divisions'. We also present the 'Top 30 MPs' according to our aggregate performance measure.

Introduction

There is an increasing recognition that League tables and rankings have become part of our society. This normalisation has occurred through performance ranking of everything from schools (www.compare-school-performance.service.gov.uk) to universities (www.thecompleteuniversityguide.co.uk/league-tables/rankings), Members of the European Parliament (www.mepranking.eu) to the level of development of entire nations (Human Development Index – datacatalog.worldbank.org/dataset/gdp-ranking).

Nonetheless, until now, Members of the UK Parliament have evaded having their performance ranked. An attempt to provide tables of individual measures ended up having considerable impact, with MPs changing behaviour, including attending votes, and speaking in debates, in order to increase their statistical performance. The work of ranking website theyworkforyou.com even found itself being discussed in the House of Commons with its impact being debated amongst

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members (HC Deb 28 June 2006, HC Deb 23 October 2008) and one MP describing the website as:

“Chief among the villains is a well-meaning website, www.theyworkforyou.com, which provides numerical rankings of MPs' parliamentary activity, referred to as "performance data".” (HC Deb 28 June 2006)

However, as a result of these debates, over a period of time the methodology was changed by theyworkforyou.com to take away the ranking element, instead focusing on whether an MP voted in favour of particular issues (Hogge, 2016).

However, the invaluable work of sites including theyworkforyou.com and publicwhip.com provide an insight into how MPs are performing certain tasks within Parliament now.

Our ranking index and resulting placements of MPs is only intended to be taken as a guide for the performance of an MP over the course of the last Parliament. Certain elements of an MP's role are impossible to quantify and measure. Examples include the excellent work of MPs in the community (Norton, 1994), advocating on behalf of constituents directly to ministers, being a local dignitary to an area and working on the various select committees within Parliament. These are to name a few of the roles that add to the rich work done by our MPs but are impossible to add into the ranking index. This league table intends to provide a review of MP's behaviour and performance within the last Parliament. The league table focuses on different elements of being an MP and different ways in which the job can be accomplished, focusing on four key areas of the role including votes attended, number of oral and written questions and rebellions from the party. This index doesn't seek to make any apology for ranking MPs and the potential for impact on their future behaviour. While recognising the limitations of ranking MPs on these metrics it seeks to explore behaviour in key areas over the course of the last Parliament running from 21st June 2017 to the dissolution of Parliament on 6th November 2019.

This league table follows on from a trial league table that considered the previous parliament, which ran from 27th May 2015 to 3rd May 2017 and had been available to the public on the University of Hertfordshire website. As a result of this trial league table, improvements have been made within the ranking methodology to reflect one of the most challenging parliaments in living memory.

The purpose of this article is to explore our identified useable metrics for a league table of UK Members of Parliament, a methodology for ranking MPs, and highlight some initial conclusions from the league table.

What is the Role of an MP?

It is well established that there is no complete job description for being a Member of Parliament (Norton, 1994, 2007). However, being able to define the position is important in determining how to rank MPs, and a clearer understanding of the function and role of a Member of Parliament is key to doing this. Former Prime Minister Harold Macmillan reportedly said that, “there were only four good reasons to be in the House of Commons – to become Prime Minister, Chancellor of the Exchequer, Foreign Secretary, or Home Secretary” (Searing, 1994). This rather cynical approach to the role of being an MP perhaps says more about the political ambitions of the former Prime Minister than the average MP. Yet, even MPs are unclear on what they should be doing, with one study which asked MPs about the role stating:

“If you ask me to define the job... I would say it is a cross between a barrister, a solicitor, a vicar, a doctor, a personnel manager of a large works ... so many things to do.” And so much choice. No wonder backbenchers say that they make their own roles.”

(Searing, 1994)

These initial insights are not especially enlightening in terms of understanding the role of an MP, yet critically do signify how varied the role is.

In Walter Bagehot’s *The English Constitution* (Bagehot, 2009) he evaluates the role of the House of Commons, where MPs serve. He sets out five functions of the house: an elective function, expressive function, teaching function, informing function, and function of legislation. Bagehot is definitively of the Burkean view that our MPs are representatives over delegates; that MPs following the instructions of constituents is needless and would create more problems than obeying their own judgements. In order to appreciate Bagehot’s argument, a consideration of Edmund Burke’s theory is required. Burke’s work set out his trustee theory of representation that MPs are elected to act in the national interest, even if this means going against the constituency in matters. In essence, MPs are elected on trust to do what is best:

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“If the local Constituent should have an interest, or should form an hasty opinion, evidently opposite to the real good of the rest of the Community, the Member for that place ought to be as far, as any other, from any endeavour to give it effect.” (Burke, 1774)

As Norton argues, “When Burke generated his trustee theory, it was in order to justify MPs acting independently of the views of constituents” (Norton, 2007). This is where Burke’s ideas split with modern thought on the role of an MP as to a greater or lesser degree, to interact with and take note of the needs of constituents. Norton states that, “An MP is expected to defend and further the interests of his constituents, collectively and individually.” (Norton, 1982). However, Judge (1999) maintains the ghost of Burke is still hanging around our politics, and “this reflects the fact that ‘trusteeship’ encapsulates the basic principles of representation: consent, authorisation, accountability and responsibility.” Pitkin gives an analysis of the modern representative in the final chapter of her work (Pitkin, 1967) arguing that within the modern political system the representative is required to act independently in using their discretion and judgment, while those being represented must also be capable of independent action and judgement, not merely being taken care of by the representative. What can be pulled out of this is that the MP is a representative of the constituency, elected for their judgment in the best interests of the nation, the constituency, and its individual members. This requires considerable interaction with the constituency members, but importantly not taking instructions from them. It also means working in their best interests in Parliament to further the interests of those that are represented. It is the tools that MPs have to use in order to undertake this representation that provides an interesting aspect of the role of the MP.

Having considered the representative role of the MP, it is time to look beyond and instead at the closer work of MPs within Parliament. In Searing’s critical work on backbenchers in Parliament, he identifies four roles that MPs take up and choose how to perform; these being Policy Advocates, Ministerial Aspirants, Constituency Members, and Parliament Men (Searing, 1994). Rush, on the other hand, takes a different approach to Searing and argues that the system of Parliamentary government imposes three major roles on MPs. These are a: “partisan role – supporting the party under whose label he or she was elected, particularly as a support of the government or the official

opposition; a constituency role – looking after the collective and individual interests of those they represent; and a scrutiny role – acting as a parliamentary watchdog not on behalf of their constituents in particular but of the people in general.” (Rush, 2001). In addition Rush also recognises that a growing number of MPs have also taken on roles of Ministers or on the opposition frontbenches (Rush, 2001). These two insightful and detailed studies on the role of MPs give an understanding of the different dimensions to the roles of MPs, but also unlock some commons themes running through the different approaches.

Notably, the *Speaker’s Conference (on Parliamentary Representation)* (2010) looked into considering the main areas of responsibility of an MP dividing the role between being a “legislator” and an “advocate for the constituency”. This role can also be enhanced by taking on additional areas of responsibility including as a government minister, formal role within parliament, or with a formal role within a political party. Finally, it is expected that a good MP will make a positive difference to the community they represent, while also recognising that the place of the modern MP is both within their constituency and at Westminster.

Norton further argues that from a rational choice perspective an MP is returned for an individual constituency but is running on the ticket for a particular party, therefore it is “in their self-interest to maintain the position of their party. It is also in their self-interest to be constituency active.” (Norton, 2007). This line of argument is extended in that the constituency activity may not change votes but it may help prevent supporting switching their votes if the party becomes unpopular, therefore, “the interests of the party and the MP coincide in terms of being active and being seen in the constituency.” Birch and Allen expressed that the public’s trust in their own MP tends to be higher than their levels of trust in MPs more generally (Birch & Allen, 2010), while Flinders and Kelso argue that there is an expectation gap that exists between what the public expects and those levels of services, behaviour, relationship that can realistically be provided by politics (Flinders & Kelso, 2011). However, they conclude by suggesting that this gap isn’t as wide as normally suggested by many commentators. Norton has also considered this area stating: “What constituents appear to expect of their Member of Parliament and what the Member has done over the years in response to the demands, or perceived needs, of the constituency have varied.” (Norton, 1994). Therefore it appears that MPs have changed and developed their roles in response to what their

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constituents have created demand for. While the above internal factors of role of the MP within Parliament has been considered, Norton identifies seven key constituency roles of an MP: “(1) safety valve, (2) information provider, (3) local dignitary, (4) advocate, (5) benefactor, (6) powerful friend, and (7) promoter of constituency interests. The first three roles are primarily, but not exclusively, internal to the constituency. The rest normally involve the MP taking some action beyond the borders of the constituency, usually, but not always, in relation to some public body. The first six are essentially roles pursued on the basis of approaches made to the MP. The seventh is frequently pursued by the MP on the basis of such requests but may also be undertaken by the MP without specific prompting. Some MPs may undertake other tasks without prompting, but the generalisation holds.” (Norton, 1994). These constituency factors also have a bearing on the role that an MP takes within Parliament and how they wield the tools available to them within the Commons.

While it is not always possible to define what is inside the role of the MP, it can be possible to rule out what is outside the scope of an MP. With the expenses scandal in 2009, it was clear from revelations regarding those expenses that MPs’ had taken a cavalier manner towards them, with many submitting claims that were clearly unrelated to their roles within parliament (Birch & Allen, 2010). Evidently, moat cleaning, dubious mortgage payments, the fitting of mock Tudor beams, new boilers and items of furniture are outside the expected operating procedures of MPs.

The role of the MP can never be fully defined as it changes with society and the needs of the people, and it should reflect the changing nature of politics and the interrelationship between individuals and Parliament. It is possible to pull out several key aspects of the role of MPs in Parliament. Firstly an MP is clearly a representative, and they should, to a certain extent, work with and take on board the views of constituents. Further, deeper roles can be extracted:

- An ability to push forward concerns of constituents and in the national interest, in writing to ministers and asking oral questions in Parliament
- An ability to scrutinise and influence legislation during its passage through the Commons, in both the national and constituency interest

-
- An independence of thought from party and constituents to act in the best interest of the nation
 - The opportunity to take on further responsibility within government.

The Metrics Used

This project therefore seeks to assess the performance of MPs in four critical areas, which are directly related to the key performance indicators roles identified in the previous section. These areas are: 1. Number of Speeches made within the House of Commons 2. Number of Written Questions 3. Number of Times Voted. Finally, we have also included the data for Rebellions against the Party as a point of information rather than as a metric on the league table. As the ranking index is considering the work of MPs over the course of the last Parliament, all data is for the period 21st June 2017 to 6th November 2019. We will explore these metrics and set out the arguments as to why they are reliable performance indicators. ‘Written questions’ set out to consider the number of written questions that an MP has asked over the course of the last Parliament. The metrics aim is to seek how often an MP has sought a more in-depth answer to a question than an oral question in the House of Commons would normally allow for. The source of the data is supplied from www.theyworkforyou.com which takes open data from the UK Parliament. *TheyWorkForYou* is run by *mySociety*, a UK charity. The data from *theyworkforyou* looks at exactly how many questions have been asked by an MP and exactly how many have been responded to over the course of the Parliament. The higher the score the more questions that the MP has asked over the course of the Parliament. Ministers do not ask written questions, and so may be disadvantaged on this metric, however they have the ability to make oral ministerial statements, which are included in another metric that we use.

This was considered an effective performance indicator as written questions give MPs the tools to undertake both a Scrutiny and Constituency role, two of three roles that Rush (2001) identified. The advantage of the written question as a tool for MPs is that whereas there is no guarantee that an MP will get to ask oral questions at any particular ministerial session in the commons, the use of written questions can ensure that an MP can ask that question and have the answer recorded. The use of the written question is an opportunity for MPs to pressure Ministers into revealing information about the work, policy, and activity of their department which they otherwise wouldn't

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wish to disclose. Written questions also offer “an opportunity to extract information from the government at minimal cost to the Member”. Searing, within his study of MP behaviour in the 1970s, found an enormous range in the number of questions that an MP set down: anything from zero questions to over a 1000. He points to an “industrialisation” of Parliament with twenty-two written questions asked per day in 1960-1961 with that figure increasing to ninety-eight per day in 1971-72 (Searing, 1994). This increase demonstrates that MPs are increasingly using this tool as an effective means in undertaking their roles. Norton in an article looking at written letters to ministers makes the observation that “Whereas questions and adjournment debates are limited in content because of time constraints, letters (and ministers' replies) can be as lengthy as the writers wish” (Norton, 1982). This observation could equally apply to written questions, being no limit to the number of questions that a single MP could ask in any given parliamentary session. From a survey conducted by Franklin and Norton in the early 90s on questions in Parliament, they concluded that written questions were very useful for promotion of constituency interests (Franklin & Norton, 1993) and also supported the idea of using written questions to extract detailed information from Ministers. Written questions are a useful tool supporting the MP’s ability to undertake their role in holding ministers to account and pushing forward constituency concerns to the relevant minister.

The second metric sets out to consider the number of speeches that an MP has made within the House of Commons over the course of the Parliament. Over hundreds of years, the Commons have witnessed some truly magnificent speeches. Speaking in the Commons is the role that MPs are expected to undertake, with maiden speeches usually remembered for the rest of their lives. The metric doesn’t seek to consider the quality nor the length of the speech, but merely how often any given MP has spoken. The source of the data is Hansard (the official record of the proceedings of Parliament) [hansard.parliament.uk], and the more speeches that an MP has made within the Commons, the higher the score. Speeches in the house can include asking questions, answering questions, making statements on important matters of the day, in essence all oral activity that takes place within the house. They support as a significant tool for MPs, all three of the roles identified by Rush. This activity goes to the traditional heart of being a Member of

Parliament and verbal communication in the chamber (Norton, 2007). It is also directly connected to Bagehot's expressive function of the House of Commons, where it "is its office to express the mind of the English people on all matters which come before it." (Bagehot, 2009) Making speeches is one of those fundamental roles that connects directly into the heart, history, and constitutional roles of the Palace of Westminster.

Having such a pivotal role within the commons, Norton and Franklin's survey finds that oral questions are most used by MPs in 'holding ministers accountable', 'defending or promoting constituency interests', 'influencing government policy and actions', and 'publicising government failures, successes, etc.' (Franklin & Norton, 1993). All of these questions requiring an 'on the spot' ministerial response in order to satisfy MPs across the house. While Rush finds the number of oral questions in the commons has grown exponentially between 1847 and 1997 (Rush, 2001). Searing puts forward that oral questions give backbenchers the platform to put forward "a point of view, an opinion, an idea, a suggestion" (Searing, 1994). Certainly, the oral question provides an excellent opportunity to attempt to embarrass the government of the day. Yet, speeches in the Commons can also be used to support government and ministers, "not least with the device of the "planted Question"" (Rush, 2001). The use of questions and answers reflects on the traditional narrative of the Commons as the grand debating chamber of the nation, as such a pivotal insight into the role of the MP.

The third metric sets out to measure the voting record of MPs taking part in divisions of the House of Commons over the course of the last Parliament. The source data for this metric comes from www.publicwhip.org.uk, and can be used under an open data commons licence. The *publicwhip* works using a computer program which reads Hansard and separates out the voting records. The metric works with the more votes an MP has attended and participated in, the higher the score.

This metric is seen as a pillar of the league table as an MP taking part in votes is a fundamental role that all MPs should be doing, and as such requires little explanation. Bagehot notes the importance of this function stating:

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“there is the function of legislation, of which of course it would be preposterous to deny the great importance, and which I only deny being as important as the executive management of the whole state, or the political education given by Parliament to the whole nation.” (Bagehot, 2009)

This role of taking part in the creation of laws, either in favour or not, is also part of the scrutiny role of MPs acting as a watchdog on what laws are being created by Parliament in the interest of the people generally (Rush, 2001). Of course it should be noted that just because an MP is taking part in a division, doesn't mean that they have attended the preceding debates, but it does demonstrate basic attendance within Parliament.

Attending votes in the Commons is fundamental to the role of the MP; in certain circumstances an MP's score in this metric may be reduced due to circumstances beyond their control. First, MPs may miss certain votes due to the “English Votes for English Laws” rules coming into effect as they historically did in January 2016 when MPs voted on parts of the Housing Bill that only affected England and Wales. Second, one important area to note when considering the voting record of MPs is to keep in mind the pairing system. This informal system is where MPs from opposite party's pair together and agree not to vote, thus allowing them to miss the occasional vote with the agreement of the Whips office, but not affect the overall result of any particular division. Despite these minor drawbacks, MPs taking part in the creation of laws is fundamental to the role of an MP that it provides an essential metric to judge performance.

The final metric considers the number of times that an MP has rebelled against their party. We did not include this as part of the score to produce the ranking but we felt it worth considering separately. The metric seeks to establish a score for times that an MP has gone against the wishes of the party they are associated with over the course of the last Parliament. The metric data was again provided by the publicwhip.org. As the Office of the Whips keep information regarding which way MPs should vote secret the *publicwhip* has defined Rebellions as:

“a vote against the majority vote by members of the MP's party. Unfortunately, this will indicate that many members have rebelled in a free

vote. Until precise data on when and how strongly each party has whipped is made available, there is no true way of identifying a "rebellion". We know of no heuristics which can reliably detect free votes."

(www.publicwhip.org.uk/faq.php#clarify)

We have therefore taken on board the same definition to use the data effectively. It is simply unfortunate, and part of Westminster politics, that there is not an official and reliable way to obtain true identification of a rebellion and its numbers. We have also included those MPs who are whips within the table, instead of excluding them like the speaker, as this is an official role within the executive and not a neutral role within parliament.

The primary reason for including the data for rebellions, but not using this as a metric is due to the significant number of Independent MPs in parliament. During the last parliament there was a growing trend, first seen within the previous parliament, of MPs resigning, or the whip being withdrawn, yet still staying within the House as an Independent MP. In the 2015-2017 Parliament there were three Independent MPs, albeit two of them were former SNP MPs who had the whip withdrawn. By the end of the 2017-2019 Parliament 25 MPs were sitting as independents after either leaving a party, having the whip withdrawn, or being excluded from their parliamentary party

] . In the case of the 21 MPs who voted against the Prime Minister's Brexit Bill, however, all but 10 had been re-admitted by the end of the Parliament. During the 2019 general election not a single independent MP was re-elected to the Commons. This demonstrates the exceptional circumstances of when Martin Bell was elected in 1997, this being the first independent candidate to be elected for Parliament since 1945 (Rush, 2001). The Independent MP is a rare occurrence and one that shouldn't be a significant driver in creating the table. Further, within the Parliament a previously rare phenomenon became an almost regular occurrence, with MPs crossing the floor to leave one political party and join another. The most significant event was the foundation of *Change UK – The Independent Group*, which formed on the 18th February 2019 and was dissolved on the 19th December 2019. At its peak, the party had 11 MPs, eight from labour and three from the Conservatives. On the 4th June 2019, six members resigned from Change UK, with five joining the Liberal Democrats.

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As with the other metrics the higher the score, the more often the MP has rebelled against the party. This is a controversial way to consider the rebellions metric, in that we are rewarding MPs for not following the party's instructions. As Bagehot identifies:

“The principle of Parliament is obedience to leaders. Change your leader if you will, take another if you will, but obey No. 1 while you serve No. 2 when you have gone over to No. 2. The penalty of not doing so, is the penalty of importance. It is not that you will not be able to do any good, but you will not be able to do anything at all. If everybody does what he thinks right, there will be 657 amendments to every motion, and none of them will be carried or the motion either.” (Bagehot, 2009)

However, Bagehot is once more considering the national interest and the principle of good governance that requires Parliament to be able to govern effectively as the overall imperative. It is also hoped that candidates are selected by local party groupings because they share the same ideology and policy aims for government. Rush argues the reality is more complex: an MP, Party or local party grouping may change position to appear more appealing to voters. Therefore, an act of rebellion may be a single instance or a series of instances in order to align a particular vote to an MPs or local party grouping policy position (Rush, 2001). Further, the two major parties are very broad churches in order to gain sufficient support at the polls, therefore individual MPs can reflect within the Conservative Party anything from a centre left position, to a moderate right position, while the Labour Party accommodates anything from a centre right to a, far left position. Consequently, for an MP to act against the party is reflective of the need for an MP to be acting in the national and constituents' interest as they see the world from the political spectrum. The leadership and direction of political parties also changes over time; therefore, an MP may be selected under one ideology, but also serve as an MP under a different ideology. This therefore makes them more inclined to rebel.

Further, again as Rush argues, the logic of expecting MPs to always vote with the party is undermined when a party withdraws the whip for a disciplinary offence or refuses the candidate's reselection, therefore depriving the local party grouping of their party representative at Westminster (Rush, 2001). Additionally, when a candidate is 'parachuted' into a constituency by the Parties leadership, the link

between local grouping and MP is weakened as they haven't been selected by the local groupings, and therefore they may not share the same policy objectives, causing tension. Consequently, MPs may rebel to satisfy the local party due to the fear of local deselection.

Finally, the national and constituency interest may collide forcing an MP to decide between following the party in the national interest and the interests of the constituency. In the last few years this can be seen within Zac Goldsmith's resignation as an MP and from the Conservative Party over the proposed building of a third runway at Heathrow airport. Again, this can be seen not just with MPs, but also Ministers' rebellion in votes against HS2 (the proposed high-speed English railway line). The argument for rewarding MPs with a positive metric score for rebelling is overwhelming as it allows MPs to be representatives acting in the national or local interest, not the party.

MPs Not Ranked

Under our ranking criteria and ranking methodology certain MPs who sit in the house could not be ranked effectively and are therefore excluded from the league table. This was a particular challenge in the 2017-2019 parliament as it was one of the most eventful in living memory, as Parliament tried to enact the EU referendum result. The most notable absences from the table include the Speaker and Deputy Speakers who have significantly different roles within parliament to other MPs. Therefore these roles mean that ranking these MPs on our metrics would give a distorted view and introduce an anomaly into the table. The other significant non-ranked group are Sinn Fein and Independent members who practice abstentionism and refuse to recognise the Rights of Parliament to legislate for any part of Ireland. There is also a refusal to take the parliamentary oath that MPs must take, swearing allegiance to the Queen as Head of State.

In total five by-elections have taken place over the course of the Parliament, one due to an MP passing away, two due to resignation of the MP, and the other two due to recall petitions. This relatively new occurrence with the operation of the Recall of MPs Act 2015 was successfully used for the first time in this Parliament, with Fiona Onasanya being recalled by her constituents after a custodial sentence of less than a year, this was followed by Christopher Davies recall after his conviction for providing false or misleading expenses claims. As neither served a full term of office they have been excluded from the

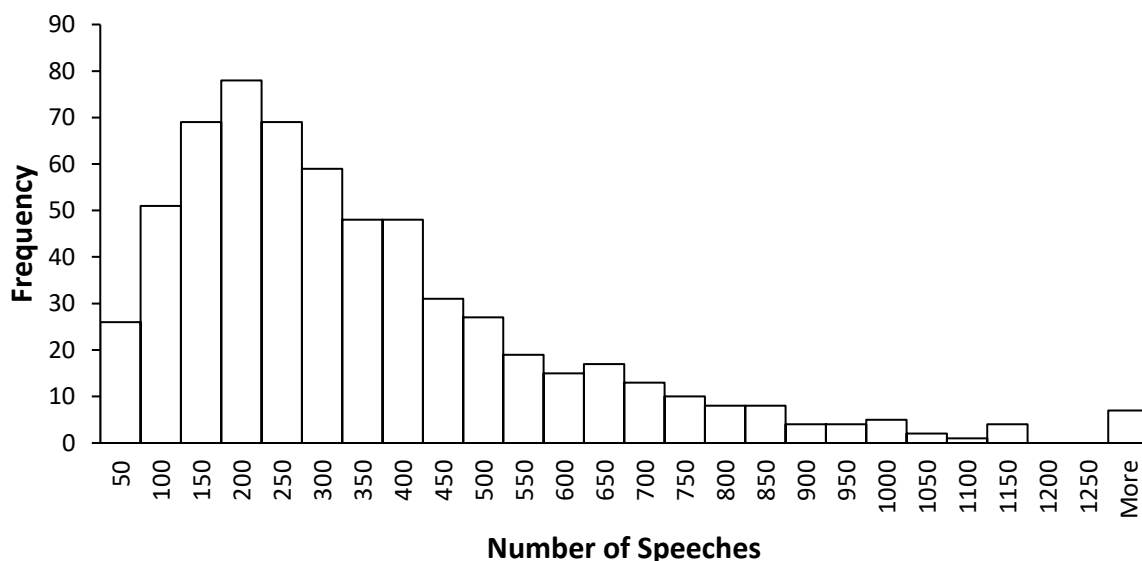
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table, alongside those who replaced them in by-elections. The final two groups not ranked include any MP that won their seat in a by-election during the Parliament. Due to these MPs not serving the full parliament they have not been ranked. Finally, any MP that was away from Parliament due to extended illness, or parental leave have been excluded based on fairness. Research into each MP has been conducted to find all those MPs unable to sit during the Parliament. While a proxy voting system was piloted from January 2018, and extended in January 2020, this was not available for all members over the whole Parliament and therefore these members who may have used this system have been removed from the league table. This still left us with data on more than 600 MPs. We apologise for any omissions.

Data Analysis

We begin by looking at the individual variables. Figure 1 is a histogram showing the distribution of the number of speeches made by MPs. The median number of speeches made during the parliament was 266. The distribution is seen to be positively skewed with a long tail; it is unimodal with the modal category (i.e. the peak) being 150-200 speeches.

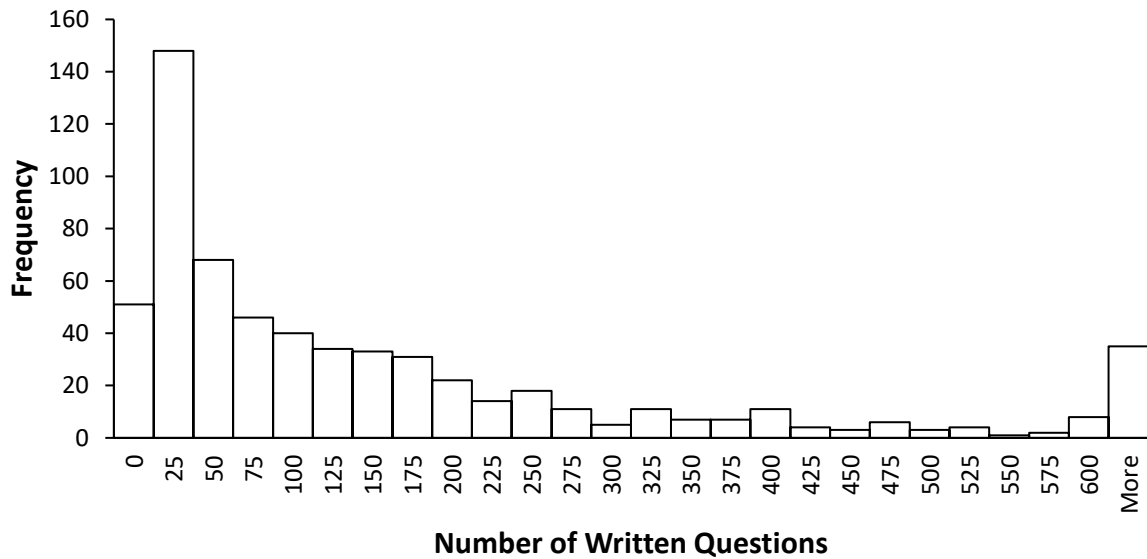
Figure 1. Distribution of the number of speeches made by MPs



N.B. The figures on the horizontal axis (for this and subsequent figures) are the upper limits for each vertical bar, thus the first bar on the left indicates there were 26 MPs who gave between 0 and 50 speeches.

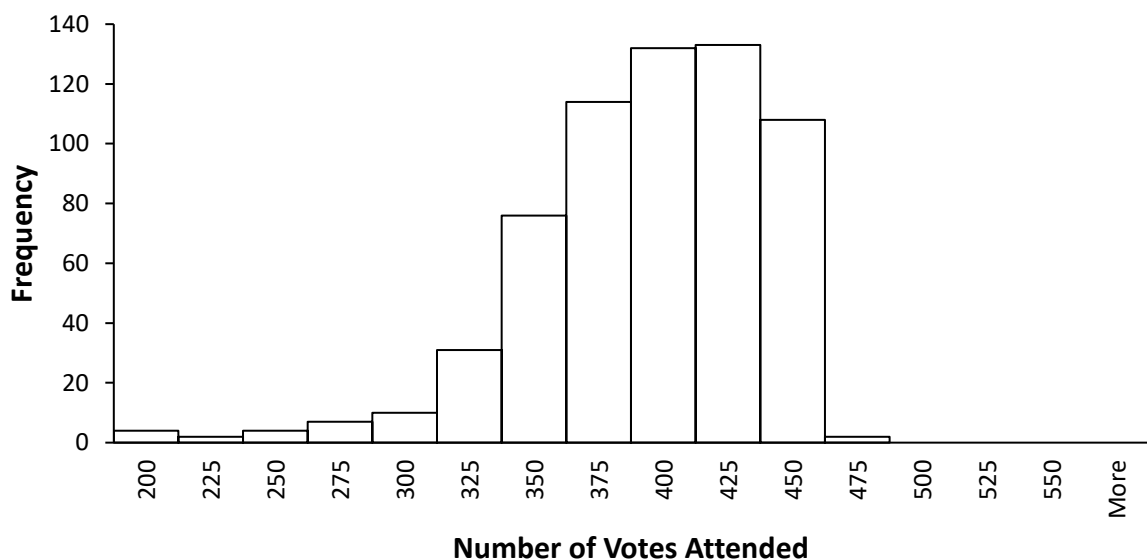
If we look at the number of written questions histogram, Figure 2, we again find a positively skewed distribution. The median number of written questions was 72. There were 51 MPs who did not submit any written questions. The biggest frequency was for the 1 to 25 speeches, which consisted of 148 MPs.

Figure 2. Distribution of the number of speeches made by MPs



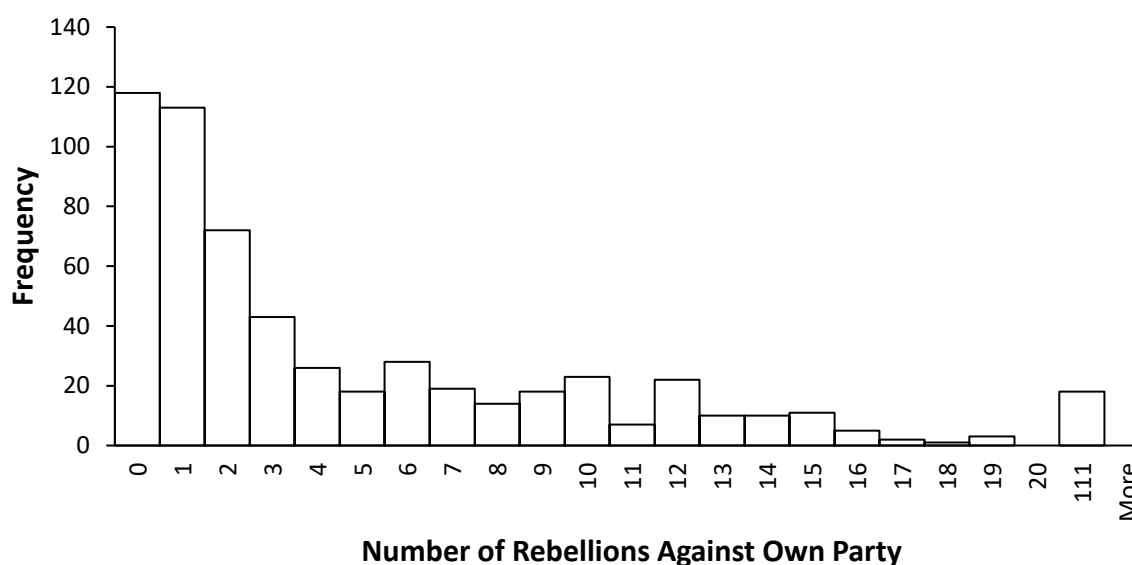
In Figure 3 we show the distribution for the number of votes attended. Here we see a different shape: it is negatively skewed with a narrow spread. The vast majority of MPs attended between 300 and 450 votes, with the median at 385 votes.

Figure 3. Distribution of votes attended by MPs



Finally, in Figure 4 we display the distribution for the number of times that MPs rebelled against their own party when voting. There were 118 MPs who were extremely loyal to the party line, and never voted against it, with 117 only rebelling once during the parliament. The median number of rebellious votes was 2, with a mean of 5. The distribution is positively skewed.

Figure 4. Distribution of the number of times MPs voted against their own party



One might hypothesise that there might be consistency in the behaviour of MPs in the sense that those who get up to speak often will also attend most votes and submit many written questions. In fact the table of correlations, Table 1, shows this is not the case, with correlations being close to zero. The correlation with the largest magnitude is a negative one (-0.266) between number of votes attended and number of written questions, meaning that there is a slight tendency for those who submit many questions to not attend votes. We also present scatterplots of pairs of variables (Figures 5, 6, 7) to look for any nonlinear relationship, which correlation would not identify – none are apparent.

Table 1. Correlations between the variables

	Speeches	Written Questions	Votes
Written Questions	0.004		
Votes	0.025	-0.266	
Rebellions	-0.052	-0.150	0.119

Figure 5. Plot of number of speeches against number of votes

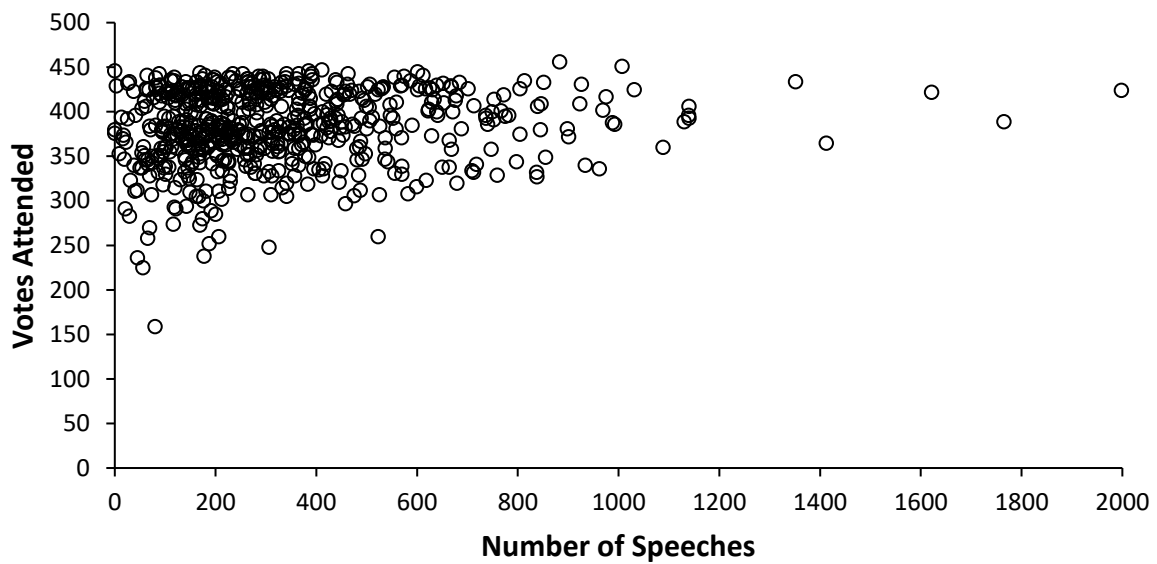


Figure 6. Plot of number of speeches against number of written questions submitted

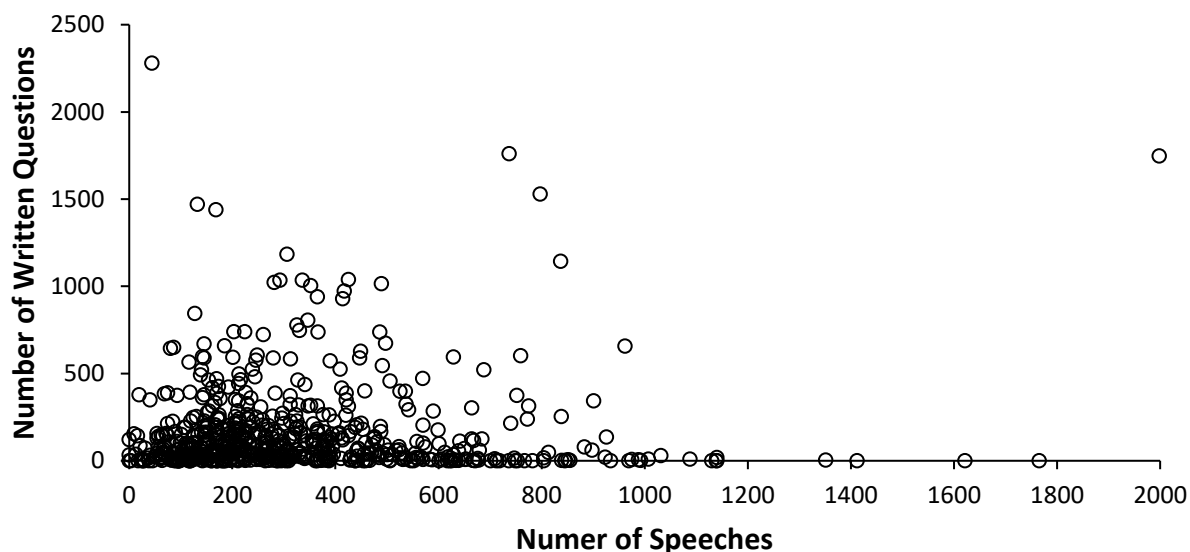
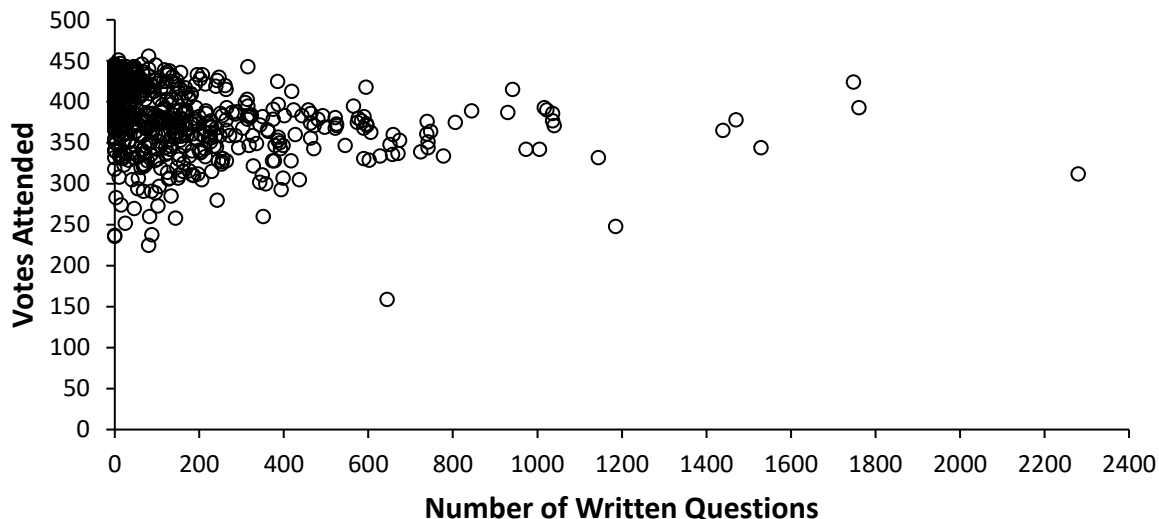


Figure 7. Plot of number of votes attended against number of written questions submitted



Methodology

Standardisation using z-scores

As league tables are commonly found in the ranking of educational institutions, especially universities (www.thecompleteuniversityguide.co.uk/league-tables/rankings, www.theguardian.com/education/ng-

[interactive/2019/jun/07/university-league-tables-2020,](https://www.timeshighereducation.com/student/best-universities/best-universities-uk)
www.timeshighereducation.com/student/best-universities/best-universities-uk) it seemed reasonable to begin by using that methodology. The methodologies used by such league tables (www.thecompleteuniversityguide.co.uk/sector/insights/university-and-subject-league-tables-methodology) generally employ standardised scores (z-scores), followed by a normalisation to make the numbers more comprehensible. This therefore formed the initial basis of the approach in this project.

We now describe the steps in detail. It should be borne in mind that the aim is to have a set of values for the various metrics which are in some sense ‘numerically comparable’, in order that they can then be aggregated. To obtain z-scores for a particular metric involves two steps. The first step subtracts the arithmetic mean of that metric from the observations; this has the effect of re-setting the mean to zero, and so all metrics will have the same average value. A second step is needed because one metric may have a much larger scatter than another e.g. there may be many very large values which would swamp the values of another metric when added together; this would cause the first metric to dominate the other one. This is avoided by dividing by the degree of scatter, as measured by the standard deviation (the second step). The advantages of using z-scores to judge MPs performance are that z-scores convert all indicators to a common scale where they all have the same average of zero and the same degree of scatter (standard deviation equal to one).

The z-scores can now be added together or averaged to obtain an overall score for each MP. (This would imply equal weighting, although weights could be applied prior to aggregation.)

Second stage normalisation for presentation purposes

The overall scores will be negative for those which are below average, and positive for those above average. There is no simple upper limit for these scores which would provide a convenient reference point. Compilers of rankings take the view that negative scores and a range which lacks a simple upper limit (such as 100%) are difficult for the general public to comprehend. They therefore proceed to an additional transformation of the numbers to make them easier to digest. The Guardian University Guide states that “the total Standardised-scores

are re-scaled so that the institution with the best S-score receives 100 points and all others get a lower (but positive) point score". Likewise, the Complete University Guide's methodology web-page explains that "total z-scores were transformed to a scale where the top score was set at 1,000 with the remainder being a proportion of the top score. This scaling does not affect the overall ranking but it avoids giving any university a negative overall score". Personal communication with the compiler of that Guide revealed how this was done: the overall z-scores are summed, one then adds twice the lowest sum to make all the scores positive, this is then scaled to make 1000 the maximum. This strikes us as somewhat ad-hoc or arbitrary, so we have developed the following simpler approach: Associate a figure of 100 with the biggest overall score and associate a figure of 50 with the average score. These two 'fixed points' create a linear scale enabling all other overall z-scores to be converted to their final form.

We stress that this step is cosmetic, making the total scores more readily digestible; it does not affect the rank order.

Analysis of the League Table

The league table provides an assessment of MP performance within the House of Commons, with a good mix of MPs from various parties scattered throughout the table.

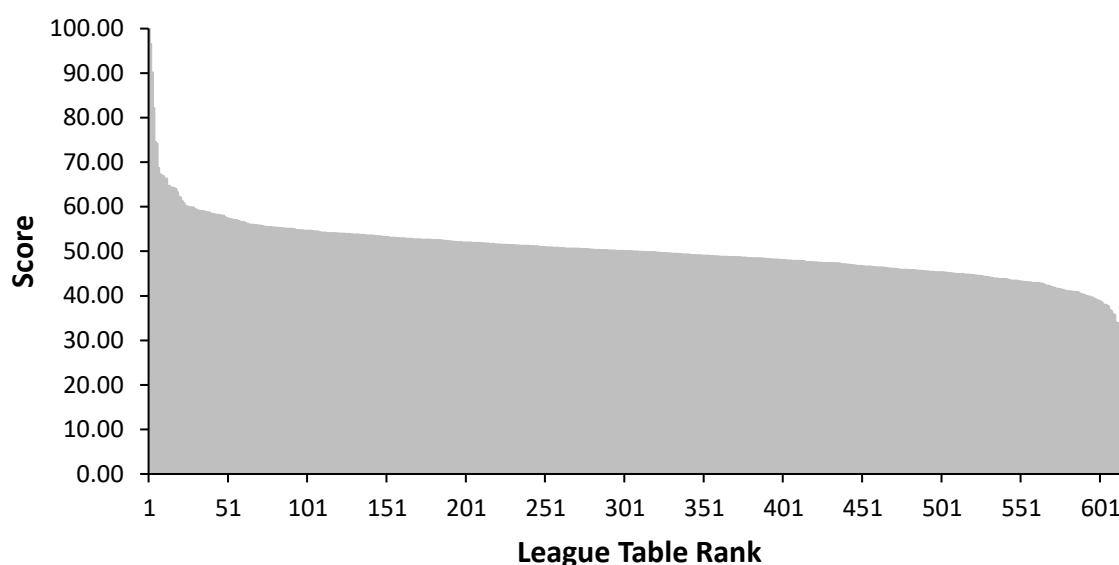
Table 2 displays the top 30 MPs according to our approach. Theresa May was the prime minister for part of the time of this Parliament and, not surprisingly, is highly ranked as a result of the large number of times she got up to speak- she appears in second position. It should be noted though, that as prime minister, she does not submit written questions. Almost half of the top 30 places are held by Labour members, and ten are held by Conservatives.

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Table 1: Ranking of top 30 MPs based on the average of standardised scores relating to number of speeches made, written questions and votes attended

Name	Affiliation	Speeches	Written Questions	Voted	Overall Score
Jim Shannon	DUP	1998	1748	424	100.00
Theresa May	C	5726	0	237	96.53
Andrea Leadsom	C	3704	38	407	90.11
Jim Cunningham	Lab	737	1761	393	82.19
Jon Trickett	Lab	44	2280	312	74.54
David Drew	Lab	797	1529	344	74.17
Richard Burgon	Lab	132	1470	378	68.69
Chris Ruane	Lab	168	1439	365	67.30
Tom Brake	LD	837	1144	332	67.05
Justin Madders	Lab	489	1016	393	66.86
Caroline Lucas	GP	365	941	415	66.34
Mel Stride	C	1621	0	422	66.28
Sajid Javid	C	1765	0	389	64.70
Liz Saville-Roberts	PC	336	1036	386	64.69
Victoria Atkins	C	1351	4	434	64.34
Catherine West	Lab	425	1040	371	64.32
Jo Stevens	Lab	281	1022	390	64.20
Stephen Timms	Lab	414	930	387	63.95
Jon Ashworth	Lab	292	1036	377	63.27
Philip Hollobone	C	883	80	456	62.25
Kevin Foster	C	1007	9	451	62.04
Stephen Kerr	C	926	137	431	61.22
Alan Brown	SNP	962	657	336	60.83
Kevan Jones	Lab	417	973	342	60.22
George Eustice	C	1031	29	425	60.07
Layla Moran	LD	352	1005	342	59.98
John Hayes	C	772	239	419	59.89
Grahame Morris	Lab	346	806	375	59.89
Peter Dowd	Lab	688	522	381	59.82
Anneliese Dodds	Lab	629	596	373	59.55

Key: C= Conservative, DUP = Democratic Unionist Party, GP = Green Party, Lab = Labour, LD = Liberal Democrat, PC = Plaid Cymru, SNP = Scottish Nationalist Party.

Figure 8. Distribution of scores for all MPs included in the study

Looking at the distribution of scores for the full data set (Figure 8), we see that there is a steep drop in scores at the top end, with 25 MPs scoring above 60. These people are clearly way ahead of the pack. There then follows a very gradual, almost linear decline in scores, which includes the vast majority of members. Finally, the scores decline more rapidly at the end with 28 MPs scoring less than 40.

We compare the parties in Table 4, where we show how many MPs appeared in each of the four quartiles. If the performance of a party is uniformly distributed across the full range then we would expect roughly equal numbers in each quartile, for example the DUP. The Conservatives have 196 MPs scoring above the median versus 97 below. Whilst Labour have 83 above the median versus 154 below. When considering the performance of the SNP MPs in the lowest quartile within the league table a key question that is thrown up, is the English Votes for English Laws (EVEL) parliamentary rules having an impact on their league table performance, and therefore the EVEL rules hindering Scottish MPs in comparison to their English colleagues. In answering that an analysis of only Scottish MPs demonstrates a fairly wide distribution of MPs over the whole league table for instance Alan Brown (SNP), Kilmarnock and Loudoun, is ranked 20th while Stephen Kerr (Conservative), Stirling, is ranked 25th, while Jamie Stone (Liberal

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Democrats) is ranked 547th. In the upper two quartiles of the table we can see Scottish MPs from all major parties in Scotland. This draws the conclusion that English Votes for English laws is not have a significant effect on the performance of Scottish MPs and another reason is behind the performance of the SNP

Table 3. Number of MPs of each party in each quartile of league table

Party	GOLD	SILVER	BRONZE	
	Top quartile	Second quartile	Third quartile	Lowest quartile
Conservative (293)	91	111	66	25
Change UK (5)	0	0	3	2
DUP (10)	3	2	3	2
Green (1)	1	0	0	0
Labour (234)	48	32	65	89
Lib Dem (15)	3	1	4	7
Plaid Cymru (4)	2	2	0	0
SNP (35)	3	3	8	21
Independents (22)	4	4	6	8
Total	155	155	155	154

'Independents' is not a party but refers to those MPs without a party affiliation.

Future of the Project

This version of the league table covered events within the truncated Parliament of 2017-2019, which built on a pilot project looking at the 2015-2017 parliament. The authors wish to continue to develop the league table to provide an on-going updated and report of MPs performance within the Palace of Westminster. The future plans include releasing a yearly performance league table, which would culminate

with a parliament league table for the whole duration of the parliament released every five years.

Conclusion

This is the story of a project to construct a ‘league table’, or ranking, of British Members of Parliament based on multiple measures. Remarkably, this has never been done before. Data from the last Parliament was collected and analysed. Our choice of which measures should be included was influenced by considerations of the functions and roles of a Member of Parliament. All multi-dimensional rankings, in every field, suffer from incompleteness – there is always some aspect that is not covered. Ours is no different, and especially so, as it is the first of its kind. We recognise that any multi-dimensional index of performance will be limited by the fact that data is not currently available for some of the work that MPs carry out, such as helping individual constituents, community work, and time spent in select committees etc. Nevertheless, this is not a reason for ignoring the data that is available, since MPs, as public representatives, need to be accountable. Indeed, publication of a league table may eventually lead to the collection of additional data which would make the index more comprehensive.

There is great deal of scope for carrying out such a ranking exercise for future parliaments and for making historical comparisons. It may also lead to interest in the media, among the public, as well as in the corridors of power.

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Decolonising the curriculum in schools

Manjinder K. Jagdev

Abstract

The focus for this paper is anti-racist work in the national curriculum at primary and secondary school phases based on the context of English schooling. Anti-racism is defined as action steps whereby racial discrimination is minimised in the process of inclusion (Brown, 2021). Collaboration and exchange in Science, Technology, Engineering and Mathematics (STEM) developments, native and indigenous peoples' struggles against socio-environmental impacts can be discussed with children, with links made between racial and climate injustices. Critical Race Theory stresses that positive action since racial equity is most likely to happen when there the interests of those in power converges with those with less power. Through discussions with colleagues, student teachers, class teachers and children, I aim to tell the truth in these speech situations, communicative and dialogical acts. This highlights the undistorted and transformative potential of praxis which links theory and action within reciprocal relationships. From an anti-racist lens, critical race theory highlights that surface level meanings hide deep structural conflicts.

Tate captures well the dynamic of Critical race theory (CRT) when he describes it as “an iterative project of scholarship and social justice” (1997, p. 235). CRT emerged among a group of North American legal scholars, to explain how racial subordination persists within a system of ‘equal rights.’ They objected to the dominant academic and popular conception of racism. CRT accepts that within the context of the West, there is a dominant, mainstream view that places white people and whiteness at the centre. “*The heart and soul of the anti-CRT outburst is this anxiety of the changing protagonists in the story of American history*” Laats (2021). Critical theories are shaped by beliefs and values, privileging some over others. Reflexivity is essential here and as a teacher educator in this research, I challenge and question the established narrow and prescriptive UK national curriculum and

encourage a re-thinking of content. Using the theory of interpretivism and critical race theory's storytelling tool, a historical and cross-cultural model of mathematics aims to have positive outcomes of my work. We need to move away from an industrial view of mathematics and education, towards one based on helping children address the global challenges we face including inequalities, inequities, poverty, racial, social and climate justice issues. Wilson (2020) states: "*A real challenge is ...balancing the teachers' role in raising awareness of social justice issues through maths with empowering learners to be able to do something about these injustices.*"

Introduction

The relevance of this research is situated in my professional journey. After ten years as a secondary school mathematics teacher, in city comprehensives in Nottingham, Bristol and Norwich, I moved into university teaching where I have worked with primary and secondary school student teachers. During my work in schools, I noticed how engaged pupils became when learning about the historical and cross-cultural roots of mathematics. As a result, over the last 15 years, I always include a session on 'historical and cross-cultural roots of mathematics' for PGCE secondary mathematics student teachers.

In Summer 2020, my PGCE mathematics students collaboratively wrote lesson plans on topics such as 'Tower of Hanoi', 'Sudoku', 'Game AYO', 'Yoruba numbers' and 'Chinese Tangrams'. In addition to this session and following the death of George Floyd and the global protests, I shared 'White Privilege' (McIntosh, 1989) and Smith and Lander (2011) on student teacher's views of ethnicity. My students discussed issues of diversity, racism, the national curricular and reflected on ideas for their own classroom practice. I was impressed by the rich discussion and their knowledges of the history of the civil rights movement, the Native American experience and history of colonialism.

The importance of this research stems from my parental influences in childhood which prioritised education. My father, Bhag Singh, graduated in mathematics from Punjab University in India, arrived in UK in the late 1960s, and worked as engineer for 58 years. His high expectations for me to go to university have been a key to my

professional journey. My mother, Surinder Kaur, was a clever woman despite being denied schooling in a rural Indian village in the 1950s. In the UK, she worked for almost 40 years, with a strong Sikh faith and belief in service (Punjabi word - 'seva'). My parents worked multiple shifts and had a strong work ethic. My mother worked multiple shifts and was paid the minimum (paltry) wage. Despite the setbacks and barriers, she remained a strong Asian immigrant woman who was resolute in her mission to do the best for her children. I am dedicated to equal opportunities for all, making society fairer, and celebrating diversity as a strength.

Relevant literature on the issues

Singh (2021) focuses on Fanon's emphasis on the industrial hierarchy of 'intelligence' and its' dehumanisation, with an education system producing inferiority and superiority. In school mathematics, there is a focus on instrumental reasoning which underpins management, corporate and governmental thinking. Following the murder of Stephen Lawrence and the MacPherson Report which highlighted institutional racism, Dr. Ajegbo provided a foreword to the 'Curriculum Review: Diversity and Citizenship'. This DfES (2007) publication included a list of 24 recommendations of 'Education for diversity' in English schools.

Bhambra et al. (2018, p. 2-3) refute that there is one definition of 'decolonising' and that it is inherently pluralistic with 'contested... and multiple character'. There are common elements, one of which is to "offer alternative ways of thinking about the world". The decolonising the curriculum movement has fostered support and action for change in schools and universities but has also met with pushback from the UK government. Decolonising the curriculum is about seeing and appreciating the world by ensuring that the views and voices of marginalised groups are heard and appreciated. Such an approach benefits all members of society.

The language of education policy reinforces the notion that 'mathematics is performative' through the repetitive use of the word 'rehearsal' in the recent government publication 'Research Review series: mathematics' (Ofsted, 2021). This places emphasis on a test-

culture of education and one in which children 'perform' on assessments. This review has been criticised by The Association of Mathematics Educator and Teachers (AMET) for inaccuracies, leading to a complaint against Ofsted (ATM, 2021). The joint ATM (Association of Teachers of Mathematics) and MA (Mathematical Association) Primary Group have produced a practical guide for the classroom practitioner in responding to the 2021 Mathematics Ofsted Research Review (2021, p. 3):

“In writing this response, we have engaged with the review and considered how the recommendations might translate into positive mathematical experiences for early-years and primary-aged children. Our hope is that this document stimulates thinking by educators and leaders about the nature of mathematics learning and teaching in their settings, and can act as a springboard for further practitioner research.”

The prescriptive curriculum disempowers teachers and undermines their professionalism. The product is a narrowing of the curriculum and instrumentalism (Welch, 2009). The new reforms of the Core Content Framework (DfE, 2019) for initial teacher education courses, reinforce the transmission approach to pedagogy by its use of language. We can see this is the plethora of statements, for example: ‘Students should learn that...’ and ‘Students learn how to...’. Teachers and higher education providers are currently being urged to respond, through a public consultation, to the governments’ ITT Market Review (DfE, 2021) that views education as a business model rather than a life-long development. The current UK national curriculum for mathematics aims to ensure that all pupils:

...become fluent in the fundamentals of mathematics, including through varied and frequent practice with increasingly complex problems over time, so that pupils develop conceptual understanding and the ability to recall and apply knowledge rapidly and accurately.

DfE (2021, p.99)

The national curriculum states that all students should have ‘memorised their multiplication tables up to and including the 12s by the age of 9’. Boaler (2015, p. 1) states:

“...many classrooms focus on math facts in unproductive ways, giving students the impression that math facts are the essence of mathematics, and, even worse that the fast recall of math facts is what it means to be a strong mathematics student...these ideas are wrong and it is critical that we remove them from classrooms, as they play a large role in the production of math anxious and disaffected students.”

When taking mathematics questions under time pressure, stressed students cannot access facts they know (Beilock, 2011). The poet Michael Rosen, has formed a group in the UK to highlight the damage of policies in schools and the numbers of primary age children who now walk to school crying, caused by over-testing (Garner, The Independent, 2014). Mathematics anxiety has now been recorded in students as young as five years old (Ramirez, et al., 2013). When students are stressed, such as when they are taking mathematics questions under time pressure, the working memory becomes blocked and students cannot access math facts they know (Beilock, 2011; Ramirez, et al., 2013). Such experiences may turn students away from mathematics. Boaler (2015) remembers her own daughter starting the times three table memorisation and testing at age five in England, coming home and crying about mathematics. If we pressurise students to recall facts at speed, we will not erase the widespread anxiety and dislike of the subject that pervades the US and UK (Silva & White, 2013).

To reform mathematics teaching, we need to put less emphasis on examinations. I use a critical mathematics education lens (Ernest, 2021) to theorise a central idea of governmental policy driving a top-down approach to whole-school leadership, which in turn, has a rippling and hierarchical effect on departmental ethos. The consequences are a current system of education that embodies a business-like approach. Most people use algorithms in ICT and media without need for technical understanding and so mathematics serves as a social filtration device (Ernest, 2021).

Mathematics tests are a critical filter for entry to almost all higher education and professions. Ernest (2021) likens school mathematics as distillation process where children go into the assessment system and come out as either professionals (the mathematical elite), skilled, unskilled or the unemployed underclass. Those who are successful at mathematics are viewed to have overall success through improved life

chances. Numeracy is taught through primary school mathematics. Ollerton (2012) addresses the importance of teaching the interconnectedness of mathematics topics and the benefits of collaborative problem-solving for pupils. In my own experience, mentors have discussed the disconnect between school problem solving which is assessed individually in examinations compared to that in work environments where employees are expected to find solutions in teams.

Outlining, explaining and justifying the research design

I have applied for ethical approval for a qualitative research project. It is anticipated that the research design will involve a partnership state school, initial teacher education university colleagues, student teachers, school-based class teachers, pupils, and parents in Yorkshire, aiming to address the following questions:

- 1. How can mathematics teachers decolonise mathematics national curriculum in England?**
- 2. What are the implications, for student teachers and partnership school colleagues, embedding anti-racist and decolonial practices in teaching?**
- 3. Why is it important to bring decolonial practices and anti-racist perspectives to children's learning of mathematics?**

In terms of context and participants, student teachers and school-based colleagues will be invited to participate due to interest in broadening their practice in the school curriculum since they may have not had any prior training in anti-racist practices. The development and implementation of our collaboratively created anti-racist curriculum with their pupils will require ethical clearance from school, university and written consent from student teachers, school-based colleagues, pupils, and their parents / guardians / carers. In the next section of this paper, I address the epistemological, theoretical and methodological issues of this study.

Through an anti-racist lens, participants will have ownership of innovative approaches and a practical enterprise of an inclusive

curriculum. More recently, Brooks (2021) highlights Scottish teachers given guidance on decolonising the curriculum, including a package with advice on how to discuss race and normalise diversity within lesson subjects. Further, Adebisi (2021) discusses the demand from students for different types of curricula in the context of decolonising university law.

As Ollerton (2012) notes that as teachers we must connections between mathematics topics, when teaching children. This makes mathematics an ideal focus for decolonial approaches in terms of highlighting the interconnectedness of humanity. Possible national curriculum topics include:

- a. **Number** – origins of number, number systems around the world (Yoruba - African, Indian, Egyptian, Roman, Urdu and Arabic), Hindu and Chinese derivation of zero, base 20, Fibonacci and other mathematicians
- b. **Algebra** – Arabic origins, trade, finance – money, currency, taxes
- c. **Shape, Space and Measure** – art, tessellations, symmetry, Rangoli patterns, cathedral and Islamic designs, geometry, Celtic knots, Roman Mosaics, Egyptian pyramids and 3D, Vedic square and design, African patterns, Chinese tangrams, mazes
- d. **Data and Statistics** – critical maths education, gender inequality, literacy rates around the world, world statistics, population census, probability games around the globe – origins of chess, Towers of Hanoi
- e. **Problem-solving** – global warming, climate change, economy, politics, biodiversity and extinction, environment, natural resources, deforestation, recycling, technology
chemistry, science and geography, sea levels and floods, forced migration, mining precious metals, STEM, ethics, ecosystems, pesticides, agriculture and farming, animal testing and pandemics.

Through planning of these topics, we can see links to critical mathematics education (Ernest, 2021) and realistic mathematics education (Kathotia, O'Brien & Solomon, 2021), for cultural and social

justice reasons. As Ernest (2021) states, we should discuss the ethics of teaching mathematics by using real world examples such as Covid, global warming, pollution of the environment, health, and mortality figures from around the world, statistics on gender and race inequalities.

Two sets of online resources created by staff and students at York St. John encompass ideas for films, books, podcasts, videos and research from a wide variety of school subjects were shared with Primary undergraduates in November 2021, and Secondary postgraduates in December 2021 as part as part of two Diversity conferences and a workshop on decolonial practice in education. Student feedback from these two conferences include the following comments:

A lot of strategies and information regarding children from different ethnic minorities.

I have come away with a lot of strategies that I would implement in my teaching.

It has given me a deeper understanding of each group of people/children, and this has enabled me to think of ways to support them more effectively

...very useful and formative session, we are always aware of these topics but we need to push this and educate our students so they can carry it on in their journeys

In Music, we did a lesson on the slave trade to give context and an introduction to the origin of blues. I try to say "enslaved people/persons" rather than "slaves". thinking about the language I use. Advice on this told me that slave isn't an identity, rather a circumstance

This is showing me that I'm definitely not doing enough! I don't think diversity is really addressed in my lesson plans at all

Thank you Manjinder, loads to think about and packed full with excellent resources.

Working with the schoolteachers and leaders, we will challenge the top-down and colonial approach that knowledge is transmitted in one direction. By providing children with opportunities to do their own research, facilitated by teachers, they create poetry and stories in a mutually beneficial learning experience. Cross-curricular links can be made to travel and geography. Also, using questions on, for example, the topic of Symmetry in the mathematics national curriculum, we can teach Roman mosaics to make connections to the history curriculum, enabling consolidation and a deeper level of understanding:

There is a plethora of resources available for primary and secondary school children on relating to Black History on, for example, BBC Bitesize website. The mutual enrichment of different knowledges and cultures is an important side of decolonising the curriculum so exploring more culturally diverse examples is key to the project. In STEM developments, the 'ecology of knowledges' (Santos, 2018, p. 371) is intrinsic to a holistic view with contributions from Black and minority ethnic people, such as Katherine Johnson and Ramanujan, to support classroom conversations.

The development of mathematical ideas, practices, concepts, and content from around the world will be a process of creating narratives about topics and planning lessons. For example, mathematical mazes are ancient and appear many times in history. According to ancient legend, Daedalus constructed the so called "Cretan Labyrinth" in Knossos, to house the legendary Minotaur. The Minotaur was a fearsome creature, half man and half bull killed by Theseus in the famous legend in which he escapes using a ball of string provided by Ariadne. Such stories and contexts can act as a 'hook' for children's learning, making connections between mathematics and history.

The decolonial approach is linked to critical mathematics education in terms of the holistic engagement with the social and cultural aspects of topics. As teachers, we do not need to rely on hammering drills and principles because children learn through stories and discussions about mathematicians and their work. By teaching world history from international perspectives, we will provide a western-based curriculum that is diverse and benefits all learners. We will tackle the myth of

'learning loads of new content' since the process of deconstructing and reframing the national curriculum will give teachers the confidence as knower of complexities behind STEM developments to be more innovative and to take ownership of their own classes.

In Sikhism, a person is involved in human problems and society. Such a person lives with a mission and works for the emancipation of all. A true Sikh works for individual human rights, the environment, and justice for all (ARC, 1995). We are entering a new age, the rainbow is made of an infinite set of colours (Khela, 2021) and social justice should be at the heart of any university (Bhopal, 2021) By addressing social justice issues, we give mathematics education a holistic and global approach. For mathematics, this is crucial as we live in cultures as the subject is feared by many, causing anxiety (Boaler, 2015). Contributions from Black and minority ethnic peoples enriches the curriculum, across school subjects, to make learning interesting and engaging. Through this global approach we can teach people not to judge others by their skin but by their achievements. For example, Fibonacci numbers are named after the Italian mathematician Leonardo of Pisa, In his 1202 book, he introduced the sequence to Western European mathematics, although it had been described as early as 200 BC in Indian mathematics work by [Pingala \(3rd / 2nd century BCE\)](#) on patterns of Sanskrit poetry formed from syllables of two lengths.

Kodikara (2021) talks about her secondary schooling in the 1990s, where there was no learning about the British occupation, the British Empire slavery and colonisation. It is almost 500 years of the British colonising 23% of the world's population and those effects are still crippling today's societies. I learned about my own ancestral family's British history through conversations with relatives and self-study and therefore it is important that we make this compulsory education for all. Part of British history is slavery with Britain enslaving 3.1 million Africans; this education about slave traders is necessary, timely and relevant. We need to understand the justice issues between countries and why some are poor, having poor health systems and are in debt. Talent and creativity live everywhere, and we need to understand the background of these countries.

The University of York's seminar on anti-racism (Jayawickrama, 2021) highlighted the need to be equal partners in the Global South, previously colonised countries and in the Global North. Collaborative thinking is based on survival and human flourishing where teachers are curriculum makers and co-creators of knowledge. This links to Japanese lesson study ideas in mathematics teaching (Swan *et al.*, 2015). Collective effort comes from creative collaborative solutions from below (Mbembe, 2016). According to Ubuntu, racism and colonialism diminish the racist and the colonialist. There is no 'other' in Ubuntu. Instead, we see the 'other' as not a threat but as a thinking knowledge-producing subject for social, economic, and environmental justice.

Epistemological, theoretical and methodological issues

In this section, I align epistemologies, theories, approaches and strategies. Social constructivism is a theory of knowledge (epistemology). When teaching a Year 8 class, I was asked by a boy, "Miss, was mathematics discovered or invented?" My **philosophical assumptions** are that knowledge, including mathematics, is socially constructed. Mathematics has developed through time and is a language created by humans over thousands of years. I take a social constructivist approach, aligning with critical mathematics educators, viewing the subject as ethics- and value-laden (Ernest, 2021). Mathematics embodies aspects of the good, the ethical values of **openness** and **democracy**. We have ways of seeing theories, concepts and methodologies and represent the world through these tools. Truth is created by human acts. As a researcher, I view myself and other participants, as travellers on intersecting journeys rather than miners or extractors of knowledge.

This project is a historical and cross-cultural model of mathematics education which integrates different knowledges and practices together to develop the national curriculum. Content and curriculum where topics are grounded on a historical-epistemological stance which looks at mathematics as a dynamic and cultural development with knowledges and practices at national and global levels. Developments in STEM are epistemological. Social processes are central to the school topics in the primary and national curricular such as Number, Algebra,

Geometry and Statistics where children's mind maps can encourage connections between these areas.

Adebisi (2021) poses 'What world emerges from an epistemic project based on colonial matrices of power – racism, sexism and nature?' 'Answer: More control over land'. Coloniality of power allows us to think through how the colonized were subjected to exploitation of all their resources and to a hegemony of Eurocentric knowledge systems (Alcoff, 2008). The knowledges beyond epistemic European were disqualified (Dube, 2009). Thinking in terms of the Amerindian *Pachamama* - the Mother Earth is a living system - may open the gates to the return of suppressed epistemologies such as those inscribed in Mandarin, Arabic or Aymara that were relegated to tradition from the conception of time and culture - that culture and time only started at the beginning of a colonialism. As Attenborough (2021) states, humans are part of nature and thus must live in harmony with the natural life if we are to survive. He has highlighted the need for all nations to work together, without this border thinking. *We need to learn from and with the epistemic South to promote an ecology of knowledges.*

Structuralism ([Heydebrand, 2001](#)) is an intellectual tendency that seeks to understand and explain social reality in terms of social structures. We can challenge these underlying structures so those who are disadvantaged by power can be emancipated. We know that reality is shaped by social, political, cultural, and other beliefs and values, and from a critical race theory perspective, these beliefs and values privilege some views of reality whilst under-representing others. Views are influenced by race, gender, and class (Kandal, 1995) and the complex ways in which oppression and disadvantage run across intersections of these.

Micro-processes of everyday life are inhabited by power; knowledge and truth are an effect of this power. By taking a critical approach to research, we recognise the partial and situated nature of knowledge, language discourse and social affairs which shape institutional practices and identities. For example, Guttstein (2012) uncovers the relations of injustice under the surface of societal arrangements and practices through mathematics teaching using the **statistical**

correlations between race and stop and search by police. This transforms students' attitudes and achievements.

Decolonisation of school mathematics is a challenge which needs to be explored through the philosophy of mathematics education and the way the subject is portrayed. It is bound within the cultural contexts and values of its makers (Ernest, 1991a). The views of mathematics as a positivist subject are contradicted by critical mathematics educationalists. Ernest (2021) highlights mathematics as ethics-laden, for the betterment of students and democratic society. This affects mathematics and practice through the *professional ethics of mathematicians and mathematics teachers, ethics of mathematical applications and pure mathematics, and ethical impact of mathematics on society.*

For some mathematicians and philosophers, the claim that pure mathematics is ethics- or value-laden is problematic, however, from a social constructivist position, must be both as a human product. Pure mathematics embodies aspects of the good. Validity in mathematics requires display of means of verification (proof, calculation) publicly and openly. Mathematics grows through pure research based on a working mathematicians' virtuosity. *Growth of knowledge and culture improves human flourishing* and is thus intrinsically good. My philosophical stance is that this research is here to do good.

My values are promoted in this investigation through democracy and community. Since ethics is about justice, equality, fairness, law, and inclusivity, I shall need to gain Informed consent through the ethics application form. It is important to problematise everything, for example having a discussion on anonymity in the context of participants choosing their names and having no denial of their background and culture. This ethics approval will be a dialogical process, involving talking to a panel. I will require the cooperation of gatekeepers such as headteachers, governors, local authority, parents and carers and pupils and so seek permission from the community. Recording lessons has ethical implications of listening to and being sensitive to children's experiences. Hearing the voices of people from disadvantaged and

marginalised groups is part of the process of this anti-racist and decolonial practice in education.

There will be no coercion to make people take part and participants will be given choice for follow-up contact details and interviews. The rapport of harmonious relationships on the insider and outsider continuum is like a pendulum encompassing empathy and kindness. There may be participants who wish to contribute to the research off-the-record. As an insider in this cooperative enquiry, I also an outsider of the high school environment and so need to consider my positionality and associated challenges, in terms of being aware of relationships and my reflexivity.

I also draw from the related 'participatory action research' that Bradbury (2021) discusses as including 'powerful love', bringing the feminine into action research, considering how knowledge is created outside higher education / academia and how we need to bridge this gap by co-creating knowledge as a collective. Freire (1972) engages in participatory action research for social justice and community development, highlighting that collective knowledge and actions are necessary for transformation. Knowledge is created with people and not transmitted to them which is the shift towards a decolonial practice of bridging the dialogue between all participants, from the bottom-up. We raise conscious awareness of the masses to improve people's lives with human inquiry based on energy and practical opportunity for impacting practice.

Conceptual strategies in Critical Race Theory include storytelling and counter-narratives that challenge dominant narratives, empower marginalised groups and are central to informing action. Gillborn (2006) argues that such counter-narratives shift the grounds of debate and present analyses that turn dominant mainstream assumptions on their head. We can use storytelling in teaching mathematics with respect to the historical and cross curricular roots. This integrated strategy supports the planning of the mathematic topics in a story-telling nature, akin to critical race theory. We can learn through stories and discussions, with feedback from children, mentors / class teachers and student teachers to be analysed. I choose to tell rich and credible stories in the complexity of this social world (O'Reilly, 2012).

Concluding remarks

I aim to interpret and explain the complex and highly contextualised phenomena of decolonisation of the national curriculum for anti-racist teaching. Multiple analyses and resulting interpretations are integrated into a coherent, compelling, well-organised and adequately supported account provided by critical race theory and anti-racism in educational theory and praxis. Critical theory offers a flexible approach to enquiry with inter-and multi-methodological approaches which can be changeable and adaptable. We will interweave observations, interviewing, data and thematic analyses. Richly textured accounts of complex social phenomena and narrative techniques will be used to make arguments. By constantly revisiting my own preconceptions and interpretations around the experience, I shall consider reflexivity. I am more interested in being true, real, trustworthy, practical, genuine, and authentic rather than in the research's validity and generalisability.

Critical race theory puts racism at the centre of analyses by rejecting and deconstructing patterns of oppression and exclusion. Data analysis will be done through a descriptive-interpretative approach, looking for differences and connections within the curriculum work. We will plan, teach, learn, and reflect to inform a multi-layered understanding of how the development and implementation of this curriculum develops. The research design will involve exploring and interlinking data from different stages and from different perspectives of the participants. Data collated through one method will be linked to other sources, for example, lesson observation notes will be connected to conversations with participants. Exploration of different layers of experience will be linked through different school subjects.

By including broader and more global perspectives in schools, we can teach philosophical and social developments in science, technology, engineering, and mathematics for holistic engagement. By teaching pupils to see mathematics as ethical, we teach critical citizenship to future *politicians and business leaders* such that it socially and politically empowers students (Ernest, 2021). We can work towards curriculum content and topics which look at mathematics as a dynamic and cultural development. Mathematics has everything to do with a new revolutionary world order which is urgently needed as humanity faces

the existential crisis of climate change. Our hopes for the future depend on learning the lessons of the past, teaching ethnomathematics (Skovsmose, & Vathal, 1997), realistic mathematics (Kathotia, O'Brien & Solomon, 2021) and critical mathematics education practices.

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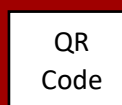
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