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A Blueprint for Evidence-Based Practice? Assessing the Warnock Inquiry's Proposals for Research and Development in Special Education 40 Years On

Rob Webster*

Centre for Inclusive Education, UCL Institute of Education, London, United Kingdom

In just seven of its almost 400 pages, the Warnock Report set out an ambitious programme for research and development in special education. The Committee not only identified areas in need of further investigation, revealed via the Inquiry process, but went beyond this, with recommendations designed to improve teachers' involvement in and engagement with research, and the processes of translating research into practical tools and strategies for practitioners in schools and classrooms. Warnock's vision reimagined academic roles as being more applied and in-touch with practice on the ground, created spaces for teachers to contribute to and conduct research, and suggested an elementary architecture for a coordinated, and more democratized approach to research in special education. This paper explores the development of some of the Warnock Inquiry's key proposals on research and development in special education. In the first half of this paper, we consider how the progress made to improving teachers' relationship with research and usage of research findings. It is suggested that much of what has emerged in the UK in recent years regarding the principles and mechanisms for moving the mainstream teaching profession to adopting evidence-based practices are prefigured in the Inquiry report. The second half of the paper revisits the Committee's research priorities and describes how the specific proposals relating to improving school-based research were addressed. We then consider the research priorities of today, and in particular, how "big data" might be harnessed to improve our understanding and knowledge of the impacts of the more inclusive, less segregated, approaches to schooling that the Warnock Committee precipitated.

Keywords: special educational needs (SEN), inclusion, knowledge mobilization, research, evidence-based practice

INTRODUCTION

Forty years ago, government in the UK at the national and local level regarded research in and of education as "a fairly unimportant activity" (Tizard, 1978). Indeed, compared with medicine, education has a poorer research tradition. Since the turn of century, however, there has been a growing international trend in the use of research to inform and improve teaching and learning for all children and young people. This movement, commonly referred to as evidence-based (or evidence-informed) practice (EBP), draws on research from a range of disciplines, including education, psychology, and neuroscience. Additionally, EBP incorporates efforts to translate findings from empirical research into practical strategies and tools that teachers can use to improve pupils' classroom experiences and academic outcomes.

Within this wider context, there has been significant growth and interest in the field of research in special educational needs (SEN). In the UK, the role and importance of research in SEN was catalyzed by the Inquiry into the Education of Handicapped Children and Young People. One of the underpinning justifications for both the Inquiry itself, and the comprehensive set of recommendations it presented to government, was founded on the basis of results from epidemiological studies that showed the prevalence of those with SEN in the general school-aged population was greater than previously envisaged. The Inquiry chair, Baroness Mary Warnock, concluded that up to one in five children at some time during their school career will require some form of special educational provision' (Department of Education and Science, 1978). The "one in five" figure has since assumed educational, political and administrative significance, and continues to inform and justify government efforts to improve provision and teaching for those with SEN (Department for Education, 2018a).

The final thematic section (chapter 18) of the Inquiry's final report addresses the function of research and development in special education. In a little over 3,300 words, and across just seven of its 394 pages, the Warnock Report makes the case for improving the promotion and coordination of research in special education, and its "translation of the results into successful practice" (Department of Education and Science, 1978). The rationale, based in part on the first-hand experience of the Committee members who conducted the Inquiry, was to marshal the "very richness and variety" of different research and research-informed initiatives and specialist interests (Department of Education and Science, 1978). The principal beneficiaries were to be the professionals and practitioners working directly with children and young people with SEN, for whom the "piecemeal nature of research in special education" (Tizard, 1978) was "often a source of confusion" (Department of Education and Science, 1978).

The proposals in chapter 18 concern the reorganization, expansion, and translation of research in special education under the three headings: (i) promotion and coordination of research in special education; (ii) the translation of research into practice; and (iii) areas in which research is needed. In this paper, I will explore the key recommendations under each of these headings, and assess the progress made toward their realization since 1978. I will consider some of the factors that have enabled and hindered progress, and argue which of the proposals still have relevance in today's contemporary education system, how they might be updated, and how they could be operationalized.

PROMOTION AND COORDINATION OF RESEARCH IN SPECIAL EDUCATION

The Role of Higher Education

The first recommendation under this heading called for higher education institutions (HEIs) to create more senior academic posts in special education, and to ensure there was at least one university department of special education in each region of the country (Paragraph 18.3). At the time the report was published, there was just one such position in Britain at the University of Birmingham, held by Ronald Gulliford. Writing 3 years after the publication of the Warnock Report, Prof. Gulliford (1981) reported that just three universities had established "separate departments or professorial appointments concerned with teaching and research in special education"; while in many HEIs, he claimed, "the special education tutor is a one-man band." Recognizing that it was still early days and that special education was a growth area, Gulliford concluded that this was a positive basis for expanding HEIs' research and teacher training in special education.

The second recommendation was to link the functions of research and practice by encouraging HEIs to set up dual appointments: "some of the senior academic posts in special education proposed above should be linked to part-time work with children with special needs from an educational, a medical, a psychological or a social standpoint" (Paragraph 18.4). The proposal was an attempt to replicate the model found in healthcare, with the closer integration of research, teacher training and classroom practice leading to the development, piloting, testing and dissemination of empirically-grounded theory, and effectively applied practices. Educational psychologists (EPs) were singled out as a profession that could benefit and contribute to the increased development and deployment of their research skills, and an additional proposal was set forward welcoming the growth of appointments shared between local education authorities (LEAs) and HEIs (Paragraph 18.6).

Resource Centers and Research

The Committee expressed the "hope" that sufficiently motivated special schools establish themselves as "resource centers" (Paragraph 18.7). It was "highly desirable" that these centers developed close links between special schools and education departments in HEIs (Paragraph 18.9). This language of desirability, coupled with the absence of a solid recommendation, meant that this section of the report (Paragraphs 18.7 to 18.9) comes across as relatively underdeveloped. The labels "resource centers" and "research centers" are used interchangeably, and while talking of special schools being "designated" as centers, it does not specify the organization or body that would oversee

this. Nonetheless, the vision of creating collaborative spaces for professional, inter-disciplinary learning was imaginative and novel for education in the late 1970s. The hubs were to be "centers not only of support for teachers and for parents, but also of research in special education" (Paragraph 18.7). For Warnock, "the part which teachers can play in research and development is often under-valued and far more encouragement and support needs to be given to them to carry out systematic research" (Paragraph 18.7). Furthermore, the centers would have provided opportunities for professionals (namely, teachers, EPs, social workers and nurses) "to work together on projects in which a range of skills is required" (Paragraph 18.8).

Perhaps one reason why this proposal reads as somewhat hesitant and non-committal is connected the difficulty the Committee experienced in bringing together practitioners from the different professions to discuss the needs of children and young people with SEN. While education, health, and social care professionals had much to contribute, Warnock claimed that during the Inquiry "it was the most difficult thing in the world just to bring them together." In a 2018 interview (transcribed and published in Webster, 2019), Warnock recalled a typical effort to convene social workers and teachers to talk with one another:

"We got them together for a weekend so that they could thrash out, try to produce a sort of plan, by which they could automatically talk to one another and trust one another, and so on. What happened was, the minute we entered the hotel, the social workers went into one room and the teachers went into another room. And they never talked to one another at all except in formal meetings. And we simply never found a way that we could ensure that they always passed on what was relevant information. In fact, they were very unwilling to do so."

A forum or mechanism for convening senior professionals was a problem the Inquiry was unable to solve; however, Warnock did set forward in the 1978 report a recommendation to create a professional college that might be capable of facilitating and supporting multiagency working, which we shall come to shortly.

A Special Education Research Group

The Committee's third key recommendation was to set up a body to coordinate and systematize disjointed research activities in and related to special education. The Inquiry found that the responsibility for determining priorities for research in special education was "widely diffused." The research activities of government departments responsible for education and health were uncoordinated, while individual proposals for research were considered by separate agencies, "often in isolation and with insufficient regard to other work in related fields" (Paragraph 18.11).

The Committee were convinced of the need for a Special Education Research Group (SERG), which was "able to take a synoptic view of what is going on and offer guidance on priorities for future research" (Paragraph 18.11). The SERG's role would be: "indicating priorities for research in special education, for identifying programmes and projects to be initiated, for awarding some research grants and for commenting, if requested to do so, on applications for research central to its concerns, which are submitted to other research bodies" (Paragraph 18.11).

Warnock envisaged that the SERG's membership represent, and its activities reflect, the interests and priorities of each home nation. It would report directly to the Department of Education and Science (England), the Scottish Education Department and the Welsh Office, and link with research liaison groups in other government departments (e.g., Health and Social Security) (Paragraph 18.12). Working with existing research bodies, voluntary organizations and foundations, the SERG would additionally act as a national recorder and archivist of existing and completed research projects and outputs pertaining to special education (Paragraph 18.13), and would hold conferences for professionals across related disciplines (Paragraph 18.14).

Commentating just a few months after the Warnock Report was published, Tizard (1978) described the composition of the SERG as problematic, as it virtually handed the government the monopoly on research in special education. He highlighted the absence of proposals to include academic research bodies among its membership, or representatives from the schools sector. While, as Tizard (1978) put it, the SERG would be "a useful in-house operational research organization" for the Department of Education and Science, looser ties to government, "a substantial representation from the educational research community on its management," plus "a measure of autonomy comparable with that of a research council" were, in his view, all necessary for ensuring the integrity, breadth, and quality of research.

Tizard's critique in fact pinpoints a more basic reason why the proposal to establish the SERG was not followed up: the lack of detail in the final report about its operating costs [A feature of the Inquiry was that the Committee decided against costing its proposals because, as Warnock explained, "we knew they'd be expensive and we knew that the costs won't stand still" (Webster, 2019)]. Nonetheless, the principle that future developments in special education to be based on sound principles and research-informed practices was clear. Rose (2018) notes that since the Warnock Inquiry, whilst there have been "attempts to create an organizational structure that would encompass such a group, these have rarely gained the support of national [UK] policymakers."

In 1982, for example, the Voluntary Council for Handicapped Children (VCHC), which predated the Warnock Inquiry, persuaded the government to fund a working party (chaired by George Cooke, the vice-chair of the Committee) to explore the possible role and function of the Inquiry's recommendation for a National Advisory Committee to "advise ministers on the provision of educational services for children and young people with special educational needs and their coordination with other services" (Paragraph 16.47). The working group reasserted the need to "discern the emergence of new demands and develop new ideas and practices," but again the government turned down this recommendation (Voluntary Council for Handicapped Children, 1984).

Amid concerns about the fragmented nature of the current education system, and the extent and complexity of difficulties facing schools, Klaus Wedell, a member of the VCHC working party, argues that the need for a SERG persists. He suggests that "instituting a SERG could offer a crucial strategy for recognizing

the urgency of a paradigm shift in thinking about an education system to match children's SEN" (Wedell, 2019). A SERG for the 2020s could coordinate and perform a range of important functions to raise the profile of SEN and help advance the inclusive education agenda, and would have the added advantage of being able to utilize the promotional and coordination power of digital technology and communications that were unavailable 40 years ago. It would also link in to, and bridge between, national and local organizations and networks, both general and SEN-specific. Rose (2018) cites the National Council for Special Education in Ireland as an example of where "the value of organizations focused upon the funding and evaluation of research into special and inclusive education has been recognized and endorsed," and the outputs used to inform policy and support teachers.

Brahm Norwich takes the notion of a collaborative approach to debating and establishing research priorities a step further, by proposing an ambitious Education Framework Commission (EFC), of which SEN would be an integrated element. Like the SERG, the EFC would seek to "break down unnecessary polarizations through adopting a position about the role of academic and professional research and evaluation in informing policy and practice" (Norwich, 2019). But unlike the SERG, the EFC would be composed of and reflect the needs, interests and views of a wide range of constituencies, including: "representatives from political parties; teachers and school leaders; parent/carers; pupils; local authorities and middle tier organizations; key bodies, such as Ofsted; third-sector and voluntary groups; employers and business; unions and professional associations" (Norwich, 2019). To ally the kinds of objections raised by Tizard, the EFC would be far more explicit in its independence from government (including in terms of its funding), and active its "public deliberation and consensus formation." Reflecting the contemporary context in which it would do its work, the EFC would attempt to immunize policymaking from the turbulence, short-termism, opportunism and "small-p" politics of general election cycles by establishing a longer-term (e.g., 10-year) "binding framework for future education legislation, along the lines of climate change legislation" (Norwich, 2019).

THE TRANSLATION OF RESEARCH INTO PRACTICE

Warnock set out aspirations for special education teachers to have not only greater involvement the research process, but also in the translation of research into practice. The Committee recommended that teachers play an active role in transmuting research findings into practical applications, and developing and disseminating the methods by which this happened. The report made specific proposals for setting up (i) numerous local centers for research and development, and (ii) a central body to oversee professional training.

Localizing Research and Development

Members of the Inquiry Committee reported favorably on special education teachers' centers set up by local education

authorities, "which have made a very effective contribution to increasing teachers" understanding of children's special needs' through involvement in workshops and research (Paragraph 18.17). Building on this, Warnock recommended that "each local education authority should have a center where research, development, and in-service training in special education are based and to which all the teachers in the area with responsibility for children with special needs can turn for help with their professional development" (Paragraph 18.17).

There has, since the early 2000s, been a distinctive and positive shift in the relationship between research and school-based practitioners in the UK and elsewhere. Teachers' and school leaders' awareness of and access to research, their engagement in and with research, and their active participation in research and evaluations have all increased markedly. SEN has though been a modest feature of an evidence-based practice movement dominated and overtaken by the needs of mainstream schools. The structures and processes relating to EBP are mainstream-centric; for example, in 2016, the first Research Schools were set up in England to promote the use of evidence to improve teaching practice. There are presently 22 Research Schools, which network with one another regionally and nationally, all of them sited in mainstream schools. Although generalist in nature, the creation and purpose of Research Schools mirrors the Warnock Committee's call for local hubs to provide training in special education. It would be a mark of progress and statement of intent going forward if several special schools joined the Research School network.

A Special Education Staff College

For Warnock, local training centers for classroom teachers were part of a bigger picture. She additionally identified a specific need for the professional skills bases of "experienced administrators, advisers, and teachers" to align with those of other professionals working with children and young people with SEN and their families—namely "psychologists, doctors, nurses, social workers, and careers officers." Unaware of any existing body able to coordinate multidisciplinary "high level conferences and courses in this complex field," Warnock recommended setting up "a body responsible for the further training of senior staff, which might be known as the Special Education Staff College" (Paragraph 18.18). It was also suggested that the Staff College "should have responsibilities for collecting and disseminating information about new research and developments" (Paragraph 18.21).

Like the SERG, the proposal for the Staff College was never actualized. However, as part of the awareness and growth of the EBP movement in education more generally, a number of partnerships have been established between schools and education departments in HEIs n the UK, alongside the growth in the availability and take-up of postgraduate programmes accessible to the teaching profession. Most recently, in 2017, the Chartered College of Teaching (CCT) was established with the aim of supporting teachers and leaders to work in a more effective, informed way. Following (perhaps unknowingly) a similar blueprint to the one set out by Warnock for the Staff College. Warnock suggested the Staff College "should receive an initial "pump-priming" grant from the Department

of Education and Science" (Paragraph 18.20) and "be self-supporting… [via] conferences and courses in different parts of the country" (Paragraph 20.19). CCT was established with kick-starter funding from the Department for Education and aims to be self-sustaining through income from membership fees and events.

While indicative of an encouraging trend toward research engagement and dialogue and collaboration between educators and researchers, existing efforts to do this under the rubric of special education tend to be provincial (geographically) or niche, in terms of relating to a specific condition or type of SEN. In addition to the problem of convening the professions (as identified by Warnock above), the lack of coordination at the national level is perhaps another explanation for why the creation of a body or mechanism to bring together these professionals with research and practitioner colleagues from health, social, and education together, as envisaged by the 1978 report, has been so difficult to accomplish.

The Warnock Report does not comment on the relationship between them, but the Staff College had much in common with the strategic purpose and operational responsibilities of the proposed regional resource centers (Paragraph 18.7). The Inquiry missed an opportunity to bring greater coherence and coordination to these activities. If one considers that the teachers who would have been served by the dissemination and training activities of the resource centers, are the senior educators of the future, who would access professional learning via the Staff College, it may have been preferable to have had one overarching body.

Knowledge Mobilization

Throughout the sections in chapter 18 on (i) the promotion and coordination of research in special education, and (ii) the translation of research into practice, there is an acknowledgment of the importance of "knowledge mobilization" (KM)[1]. KM is the "relatively complex chain of activities, requiring distinct processes of research production, synthesis, distribution, transformation, and implementation" (Sharples, 2013). It is generally conceived as a bidirectional, collaborative process involving researchers, and practitioners.

The Warnock Committee made explicit recommendations about the organizational fora and physical spaces within which such collaboration could take place, but the Report had relatively little to say about how schools and HEIs might create the opportunities for KM-type work. Rose (2018) considers the path to "education as a research based profession" as dependent on winning over more researchers to the job of "working with teachers in setting the research agenda, involving them in the process and sharing in accessible dissemination of results." However, the more inhibiting factors are those affecting teachers. The accountability culture in education in England drives the behavior of school leaders and teachers, and even official analyses acknowledge how accountability processes are responsible for excessive workload (Department for Education, 2018b). The stakes for schools are so high, and the resources for improving educational outcomes for pupils with and without SEN are

presently so limited, that engaging more in research and adopting EBP are at risk of being easily dismissed as unnecessary risk-taking, as creating yet more workload, and/or as irrelevant to accountability demands.

The task of putting education research into practice has been aided over the last 10 years by the creation of organizations such as the CCT and the Education Endowment Foundation (EEF), both of which have school and classroom practitioners as their principle audience. It is interesting to note that these organizations (and others) are performing aspects of what was advocated in the Warnock Report chapter on research and development in special education over 40 years ago. What is also noteworthy is that this work is directed at children and young people *without* SEN, and that those *with* SEN have been somewhat left behind by these developments. For example, it was only after seven years of existence that the EEF established SEN as one of its strategic strands under which its activities are organized (Henderson, 2018).

Children and young people comprise 14.6% of the school population (Department for Education, 2018c). This is a substantial, disadvantaged constituency, who stand to benefit considerably from the greater application of evidence-based approaches in schools and classrooms. Encouragingly, around half the schools in England use the information and materials provided for free by the EEF to improve education effectiveness (Education Endowment Foundation, 2018). Even with this impressive reach, there is likely to be variability within schools; some teachers will be more research-engaged than others. The education system in England is, broadly speaking, in a promising position to push on with widening and deepening KM activities for SEN. However, policymakers will need to maintain efforts to address teacher workload alongside this to ensure the potential for EBP to transform pupils' experiences and outcomes is maximized.

AREAS IN WHICH RESEARCH IS NEEDED

Priorities for Research

On the basis of the activities that formed the Inquiry itself, the Warnock Committee concluded that further research was urgently needed in a range of areas. These are listed in a short 300-word section in chapter 18, though not in any order of priority (Paragraph 18.15). Five of the 13 areas related to the identification and assessment of specific types of SEN (i.e., maladjustment; specific difficulties with reading and writing) in specific groups of children and young people (i.e., pre-schoolers; post-16; those with English as an additional language). The Committee also recommended updating epidemiological studies, such as Rutter et al. (1970) Isle of Wight study "in order to obtain information about changes in the prevalence of different handicapping conditions, including regional differences" (Paragraph 18.15).

Four of the priority areas considered for investigation concern the administration and organization of provision for children and families (including residential schools and special needs services), and three of the areas invite further research into what goes on inside schools to meet the needs of those with

SEN. In the remainder of this the paper, we consider firstly the progress made in relation to this final set of research priorities (investigations at the school level), and secondly, propose some new priorities that build on Warnock's original suggestions and help address contemporary practice and policy challenges using contemporary methods.

School-Based Research on SEN

The publication of the Warnock Report catalyzed and gave fresh impetus to the research endeavor in special and inclusive education, greatly expanding the literature, and evidence base in a wealth of sub-disciplines (e.g., in relation to particular types of SEN). The progress made in the research relating to how schools accommodate and meet the needs of pupils with SEN deserves particular attention, as it can be seen as a subset of the wider advances made in research on mainstream education effectiveness and improvement.

Rose (2018) notes that much of the research in SEN published since the 1978 report is small-scale, which is perhaps not unexpected of empirical work involving heterogeneous populations. Rose does not discount the value or "local impact" of small-scale research at the school level, but his comments draw attention to the lack of large-scale studies, which have been relatively more common in the wider sphere of mainstream education research (i.e., research that involves or is primarily for the benefit of children and young people without SEN).

One exception was the seminal One in Five study, which investigated special needs in primary schools (Croll and Moses, 1985). One in Five was the first major survey of the nature of the difficulties that children with SEN experienced in the classroom context of mainstream primary schools. It responded directly to the Warnock Committee's call for new research on definition and assessment in special education, and the organizational factors that framed the everyday experiences of children with learning and behavioral difficulties. The One in Five study also captured teachers' views on integration during the period when the Education Act 1981 was being drawn up. Croll and Moses (2000) returned to the 50 schools that took part in the original study some 20 years later to collect follow-up data. Whilst this involved almost fresh cohort of teachers and leaders, it did provide valuable longitudinal data on how teachers' perceptions of and attitudes toward SEN and to those with SEN had developed over time.

Insights into how school organization has changed pre- and post-Warnock is provided by an analysis of the classroom experiences of 1,792 primary-aged pupils with and without SEN, between 1976 and 2012. Using results from the systematic observation component of the One in Five study and five other large systematic observation studies that produced comparable data, Webster (2015) found that results for the average pupil showed an increase over time in the proportion of time spent interacting with teachers and peers. In contrast, relative to their non-SEN peers, those with SEN experienced a more moderate increase in the proportion of time spent interacting with the teacher, and almost no change in the amount of time spent interacting with peers and in whole class teaching contexts. The increase in the number of teaching assistants (TAs) in

mainstream primary settings, employed, and deployed to assist the learning and inclusion of pupils with SEN, is identified as a key observable influence on the difference between the classroom experiences of pupils with and without SEN over time.

Relatedly, in a series of publications from their Making a Statement and SEN in Secondary Education studies, Webster and Blatchford provide longitudinal evidence of the school journeys of a cohort of 48 pupils with high-level SEN, from primary mainstream into secondary mainstream and specialist settings (see Webster and Blatchford, 2013, 2015, 2018; Blatchford and Webster, 2018). Efforts to coordinate separate investigations of the nature and quality of the school experiences of children and young people with SEN, in order to assess changes over time and in relation to the experiences of those without SEN, make useful contributions to the literature. However, such work, typically reliant on secondary data from multiple sources, are proxies for the kind of large-scale, longitudinal research that draw primary data from a consistent source. This, suggested Tizard (1978), shows the limitations of a special and inclusive education research agenda that instead prioritizes "a series of *ad hoc* projects each lasting on average 3 years and all inadequately followed up."

The Power and Potential of Big Data

Tizard (1978) concluded that the Warnock Committee "missed an opportunity to bid for a really major research and development policy which could have important consequences not only for special education but for education as a whole." One could interpret this as a criticism that the Committee should have made a specific recommendation to institute at least one large-scale longitudinal cohort study capable of producing the kind of "big data" that helps address important social policy questions. Of course, the Warnock Committee was not tasked with predicting or preparing for advances in education research. However, any list of research priorities for SEN drawn up today must factor in the power and potential of big data.

The utilization of huge datasets, which can be analyzed to reveal patterns, trends, and associations is a relatively recent development in international research, made possible by significant technological advances in data processing and storage. Big data is changing decision-making in almost every sphere of policy (e.g., social, economic, environmental) and education—which produces vast amounts of information about schools and pupils—is no exception (Rabella, 2016).

An early example of using big data to answer research questions relating to inclusion comes from the UK context. Dyson et al. (2004) used national data on over 500,000 pupils in English mainstream schools to create variables related to local area and school-level inclusivity, and model "which might have an impact on pupils' measured attainments." Their results showed that there were "few if any negative impacts of inclusion on the attainments and achievements of pupils without SEN" (Dyson et al., 2004). The emergent international research evidence on this question is quite consistent with this. Szumski et al. (2017) conducted a meta-analysis of 47 individual studies from a number of jurisdictions, covering a total sample of almost 4,800,000 pupils, and found that the presence of pupils with SEN

in inclusive classrooms is positively, though weakly, associated with the academic achievement of pupils without SEN.

Robust and up-to-date evidence on the economic benefits of education (i.e., in terms of achieving qualifications) is critical to educational investment decisions. Evidence from such research is not only attractive to policymakers (Hayward et al., 2014), but increasingly, via activities such as the Research Excellence Framework, researchers have a greater incentive to demonstrate the impact of their work beyond academia, and also build it in from the start, by formulating research questions and designs that have public policy relevance.

There are good reasons policymakers should consider supporting system reform that would lead to more inclusive models of schooling. A maturing evidence base that suggests there are significant long-term economic and social costs involved in failing children and young people with SEN, as revealed in the correlations between SEN and exclusion; low attainment; being neither in education, employment or training; and youth crime (House of Commons Education Skills Committee, 2006). Early, sustained intervention not only saves money and lives, but also enriches society and the national economy. A review of the literature for the European Commission found evidence to suggest that young people with disabilities who attend an inclusive setting are more likely to gain employment and be financially independent on leaving education; whereas those who attend segregated settings are less likely to have friendships and social networks in their adult life (European Agency for Special Needs Inclusive Education, 2018). That including pupils with SEN in mainstream lessons has no detrimental effect on other pupils, in effect, kicks the legs out from one of the most persistent arguments against inclusion.

Warnock's case for the greater inclusion of children and young people with SEN in mainstream settings was argued mainly from a social justice and moral perspective. The Inquiry itself was set up to advise on appropriate environments for educating those whose were previously considered "ineducable," following changes in the law precipitated by the Education (Handicapped Children) Act 1970, which meant that every child and young person was required to attend school. Compelling though this was (and still is), the Committee's decision not to cost their proposals meant that the overall case for inclusion was missing an important economic angle, which would no doubt have been as interesting to policymakers 40 years ago as it would be today. On one hand, Warnock avoided raising the technical and politically-sensitive issues of how to fund the recommendations and where the money would come from. But on the other hand, the report lacked evidence of any potential cost-benefit. Caginess about the upfront financing of widespread reform meant that there was little discussion of the future savings to the public purse, in terms of young people with learning difficulties or disabilities contributing to the economy through paid employment, instead of subsisting on state benefits. The evolution of education research and policymaking, and the potential of big data, requires us to lose our shyness about advancing the economic case for inclusion.

It is important to note that existing big datasets in the UK may help assess the impacts of inclusion (i.e., in terms of social and economic effects); however, they tend not be sufficiently powered to address well-specified research and policy questions concerning children and young people with particular types of SEN. Variables relating to the SEN population in large-scale longitudinal datasets, such as the UK Millennium Cohort Study, are quite limited. An additional large dataset encompassing infants, children, young people, and young adults that reflects the heterogeneity of the SEN population is necessary for not only detecting trends relating to needs identification and assessment, achievement (academic and otherwise), and progression into adulthood and employment in a comprehensive and systematic way, but these data could also feed into robust analyses of the economic impact of inclusion.

Any national government or administration that lays claim to evidence-based education policymaking must have a large-scale longitudinal cohort study of children and young people with SEN near the top of its list of research priorities. However, worthwhile, correlational studies based using such data may be insufficient for moving debates about policy and practice unless there is an attendant effort to take account of what actually happens in schools and classrooms for learners with SEN. Pupil-level data on processes and experiences of teaching and learning are not as abundant as big data on outcomes, and so we know less about what might need to change in real-world schools and classrooms, and how, if improvements are to be made.

While researchers appear able to define the features and impacts of inclusive settings, the characteristics of teaching and curricula (the "how" and the "what") are less clear. Indeed, evidence from the systematic reviews of the impact of inclusive approaches (e.g., Kalambouka et al., 2005; Hehir et al., 2016) is reticent on the practical issues of implementation. Broad statements about success are worthy, but lack precision: it is not exclusively a matter of additional financial resources; more or better training; and teachers and other professionals needing to "regularly engage in collaborative problem-solving" (Hehir et al., 2016). Consequently, the active ingredients of effective "inclusive" classroom teaching and learning for pupils with (and without) SEN remain elusive. Identifying and validating these characteristics ought to be an additional priority for future research. This is important in view of KM efforts mentioned earlier, as it makes it more likely that the most appropriate and impactful research is translated into practice.

CONCLUSION

This paper considered the content of chapter 18 of the Warnock Inquiry report, which focused on the important and valuable role of research and development in special education. The Committee's recommendations represented an ambitious agenda for research and practice in special education, and expressed: (i) the need for high-level, applied academic posts, which required postholders to work with teachers and/or children with SEN; (ii) the creation of "major centers of influence" (Paragraph 18.22) capable of coordinating a range of research, dissemination and cross-disciplinary professional learning; and (iii) priority areas for research.

Forty years on, perhaps the most successful elements of these proposals concerns special and inclusive education as an academic discipline. Education departments in HEIs across the UK now have senior specialist appointments involved in teaching and research. The last four decades has produced a vast theoretical and empirical literature across the field. As a result, our education system is better informed and pupils with SEN are better served. There are, however, policymakers, practitioners, professionals, parents, and pupils, as well as researchers, who will take issue with this assessment, and point to the ways in which elements of the reform agenda never really got out of the starting blocks, and how children and young people with SEN and their families continue to be failed, in whole or in part, by the current education system.

Empirical research and the scholarly literature on SEN is forever a work in progress. A motivation for writing this paper was to highlight how one of the shortest chapters in the Warnock Report has provided one of its most enduring, though often overlooked, legacies. The Warnock Inquiry simultaneously cemented special and inclusive education into the broader discipline of education research, while putting forward an architecture to ensure its outputs are not locked up in a metaphorical ivory tower, but actively inform the everyday functions of teaching and school leadership. Four decades on, it remains a worthwhile blueprint for advancing research and development in special and inclusive education.

AUTHOR'S NOTE

There are subtle distinctions between knowledge mobilization (KM), knowledge transfer (KT), knowledge translation (also KT), knowledge exchange (KE), knowledge transfer and exchange (KTE), knowledge translation and transfer (KTT), and knowledge integration (KI). However, all of these terms essentially describe the same process of connecting research with practice and/or policy.

AUTHOR CONTRIBUTIONS

The author confirms being the sole contributor of this work and has approved it for publication.

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