Systematic review

What are the impacts of approaches to increase the accessibility to education for people with a disability across developed and developing countries and what is known about the cost-effectiveness of different approaches?

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Contents

List of abbreviations

AAC	Augmentative and alternative communication
DfID	Department for International Development (UK)
DPOs	Disabled people's organisations
EENET	Enabling Education Network
EFA	Education for All
GL	Grey literature
HIC	High-income country
ICF	International Classification of Functioning, Disability and Health
IE	Inclusive education
ISCED	International standard classification of education
LCDIDC	Leonard Cheshire Disability and Inclusive Development Centre
LIC/LMIC	Low-income/Low- and middle-income country
RCT	Randomised controlled trial
SEN	Special needs education (sometimes written as SNE)
UNCRC	United Nations Convention on the Rights of the Child
UNCRPD	United Nations Convention on the Rights of Persons with Disabilities
WG	Washington Group
WHO	World Health Organization

Summary

What do we want to know?

We want to map existing evidence that provides information about the impact of initiatives that provide education for children with disabilities. We also want to identify any studies that provide an analysis about the cost-effectiveness of existing initiatives.

Who wants to know and why?

Potential users of this study include policy makers who aim to deepen and strengthen their programmes and funding. This study presents a picture of the types of evidence that exist, but also identifies avenues for further analysis that can be pursued according to the priorities of various stakeholders. This study can also be used by researchers working in the field of education for children with disabilities and/or impact evaluations, for example to assist practitioners in determining the impact of their interventions. Finally, it is hoped that the review may also provide information to parents of children with disabilities and the children themselves.

What did we find?

A majority of the studies were carried out in higher-income countries (mostly North America and the UK). Moreover, a large proportion of the studies focused on intellectual disabilities and autism. The nature of the studies was often based on testing of cognitive/metacognitive techniques that aimed to improve classroom outcomes (especially related to reading skills). Finally, although some studies provided estimates of the expenditures, we did not identify any cost-analyses that compare various approaches to educating children with disabilities.

What are the implications?

Firstly, the geography of policy and programming dynamics are extremely different in high, middle- or low-income countries. Secondly, it is evident that the typology of disability needs to be determined in order to define appropriate interventions. Thirdly, there is a need to strengthen mechanisms for evaluating impact of interventions beyond the achievement of learning outcomes. Finally, the majority of studies did not provide discussions that feed into policy considerations. The question of approaches to increase the access to education of children with disabilities needs to be more specific, for example, or cover more of the key approaches (inclusive education, special needs education etc.) in order to carry out a more targeted and in-depth analysis.

How did we get these results?

Ten databases were keyword searched for academic resources. Studies published between January 2000 and January 2012 were included. This yielded a body of evidence of 2044 articles that were screened on title and abstract. After full-text screening, 100 studies were retained for the keywording phase: 11 were unavailable and 89 were profiled; these consisted of 14 reviews and 75 studies. Our review also carried out a first screening of the grey literature by identifying 19 potential websites and doing various word searches on these (3,900 documents were identified). We make recommendations on how to move forward to screen this diverse body of literature in follow-up reviews.

1. Background

1.1 Aims and rationale for the review

The aim of this systematic review is to describe the literature evaluating educational initiatives and delivery mechanisms of education for children with disabilities and to identify impact in terms of completion of school, participation and social change. Currently, there are a variety of different methods and approaches being undertaken globally to ensure that children with disabilities can access and attain education, as well as ways to evaluate the outcomes of these approaches. However, to date there has been very little evidence produced to demonstrate the most effective approach (or the most cost-effective), in particular comparing different approaches in high-, medium- and low-income countries ('developed' and 'developing' countries). This review is an attempt to systematically gather this evidence.

It is worth noting that the review question is very broad and complex, given that education for children with disabilities is influenced by a variety of factors in developing and developed countries, and as a result, follows very diverse policies and outcomes. In order to try to provide useful policy guidance to donors as well as other potential users of this review, we have tried to map this diverse body of work, and present future avenues for further research and analysis.

1.2 Definitional and conceptual issues

A battery of international conventions and frameworks (UNESCO 1994, 2010) have contributed to the complexity of definitions of the policy arena of education in general, and for children with disabilities in particular – though national legislations and policy play a major role in shaping what education of children with disabilities looks like in each country.

Most of these frameworks stress the fact that the principles for teaching children with disabilities are the same as those for *all* students and rely on programme design at the very onset. In practice, however, the policies and implementation of educational programmes have to tackle very diverse factors. In developed (higher-income) countries, 'education of children with disabilities' relates to very different realities compared to developing (low- and middle-income) countries, where chronic poverty, conflict, political instability and a consistent lack of resources often relegate disability to the side-lines of mainstream programmes (Trani et al. 2011). In some countries, particularly the United States, the United Kingdom, Australia and some European countries, public policies have been addressing these issues for decades and have the resources to pursue a coherent learning process. In other countries, international conventions, paired with local initiatives, have led to improvements and increased enrolment and retention rates for children with disabilities. However, this is not uniform, and a number of barriers continue to hinder progress. This is evidenced by the lack of evaluations of the impact of educational approaches, which seem unable to move beyond considerations of physical access/non-access and rates of attendance/non-attendance. As a consequence, despite laudable intentions, education continues to be regarded merely as a service to be delivered, rather than a right. Therefore, in practice, the notion of inclusion and equity become secondary to service delivery. As a result, access - which only constitutes the first step - is often perceived as the objective of education programmes for disabled children.

1.2.1 Disability: an evolving concept

Current debates around what constitutes a 'disability' reflect how broad or narrow the term can be (World Health Organization/World Bank 2011). However, it is crucial to understand the various means of defining the concept, and to choose a working definition for this review. The concept of disability is shaped by cultural and social understandings, and more recently by political and rights-based inputs from civil society, in particular disabled people's organisations (DPOs). There are also a range of international conventions and frameworks that seek to promote the human rights, inclusion and mainstreaming of persons with a wide range of impairments. This systematic review will mainly refer to the definition of the United Nations Convention on the Rights of Persons with Disabilities (UNCRPD 2008) (United Nations 2006), which, besides being the most universal (with 155 countries as signatories to date), goes beyond the medical approach to incorporate the social model and the International Classification of Functioning, Disability and Health (ICF) (World Health Organization 2001). Article One of the UNCRPD states:

> *Persons with disabilities include those who have long-term physical, mental, intellectual or sensory impairments which in interaction with various barriers may hinder their full and effective participation in society on an equal basis with others.*

The Convention shifts away from more traditional definitions of disability using the medical or the social model of disability. The medical model focuses on the individuals' impairment as a physical or mental 'problem' that a person has (Amundson 2000), while the social model puts forward the argument that persons are 'disabled' because of the structure of the society in which they live, which does not accommodate their impairment – they are disabled by the physical, social and attitudinal environments surrounding them (Shakespeare 2001).

However, a large majority of researchers, activists, policy makers and practitioners have agreed on the need to move beyond this dichotomous approach to look at the interaction between an individual impairment and the social barriers that lead to a disabling situation. The WHO *International Classification of Functioning, Disability and Health* (ICF) aims to provide guidelines for collecting data and other information by looking at disability as a combination of individual, institutional and societal factors that define the environment within which a person with impairment lives. In the ICF, the term 'functioning' refers to all the 'body functions, activities and participation, while disability is similarly an umbrella term for impairments, activity limitations and participation restrictions' (World Health Organization 2001). In line with this, the recent *World Report on Disability* uses the ICF as its conceptual framework. This definition:

> *understands functioning and disability as a dynamic interaction between health conditions and contextual factors, both personal and environmental … Promoted as a 'bio-psycho-social model', it represents a workable compromise between medical and social models. Disability is the umbrella term for impairments, activity limitations and participation restrictions, referring to the negative aspects of the interaction between an individual (with a health condition) and that individual's contextual factors (environmental and personal factors) (World Health Organization and World Bank 2011: 4)*

Another approach, though not specific to the field of disability but more prominent in the field of human development, is Amartya Sen's Capability Approach (CA). This approach has gained importance for designing programmes and even more so for assessing impact, as it focuses not solely on what a person actually does (functioning) but the range of possibilities that s/he chooses that specific

functioning from – the capabilities set (Sen 1999). The implications of the CA for the field of disability are wide-ranging: firstly, rather than trying to 'label' a person as disabled or not, it focuses on whether a given impairment leads to vulnerability and difficulty in functioning; secondly, it has the potential to look at the impact of disability on the family and community (in terms of coping strategies, resources and burden), which is crucial in developing countries; and finally, it focuses on the agency of individuals, and their ability to take decisions that they have reason to value.

Although these theoretical frameworks and conventions have helped move forward the ways in which disability is understood, they do not provide tangible ways of measurement. The main problem in the field of measuring and assessment is that there is no clear universal agreement on the definition of what constitutes a disability. As a result, prevalence rates (e.g. in national censuses) can vary enormously, making comparability impossible. To bridge this gap, a global group of experts – known as the Washington Group (WG) - was set up in 2001 to establish an international standard for measurement of disability which can be used in censuses, and allows national relevance and international comparisons.[1] The WG has defined a set of questions, similar to the ICF, which attempt to determine activity and participation limitations, and can look not just at the type of disability, but the intensity or degree of limitation within a given social, cultural and economic context. However, there is no internationally agreed consensus about these questions, and as a result, a number of national censuses continue to screen disability through very limited criteria (for example, the India Census 2011).

Inevitably, these different approaches have had an effect on the type of research undertaken, which, in turn, impacts on the results available. For example, viewing disability as a medical condition – as is often the case with healthcare professionals – has created a large body of work that explores issues around disability from an impairment-based perspective, while work that examines disability from the social perspective may ignore health conditions (Shakespeare 2006). As a result, comparison between these two bodies of literature is very difficult, as they have no common basis of understanding.

1.2.2 Education
In the past two decades, understanding of education has moved from programmes that focus on functional literacy towards *quality* education that makes a real difference in the lives of children and adults. However, despite the considerable amount of funding being made available for education programmes for children with disabilities, evidence of tangible results is still rare.

Article 24 (Education) of the UNCRPD states that:

> States Parties recognize the right of persons with disabilities to education. With a view to realising this right without discrimination and on the basis of equal opportunity, States Parties shall ensure an inclusive education system at all levels and lifelong learning directed to: (a) The full development of human potential and sense of dignity and self-worth, and the strengthening of respect for human rights, fundamental freedoms and human diversity; (b) The development by persons with disabilities of their personality, talents and creativity, as well as their mental and physical abilities, to their fullest

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[1] http://unstats.un.org/unsd/methods/citygroup/washington.htm

potential; (c) Enabling persons with disabilities to participate effectively in a free society.

More specifically, the Convention lays the five grounding principles for the realisation of this right:

> States Parties shall ensure that: (a) Persons with disabilities are not excluded from the general education system on the basis of disability, and that children with disabilities are not excluded from free and compulsory primary education, or from secondary education, on the basis of disability; (b) Persons with disabilities can access an inclusive, quality and free primary education and secondary education on an equal basis with others in the communities in which they live; (c) Reasonable accommodation of the individual's requirements is provided; (d) Persons with disabilities receive the support required, within the general education system, to facilitate their effective education; (e) Effective individualized support measures are provided in environments that maximize academic and social development, consistent with the goal of full inclusion. (Article 24)

The UNCRPD recognises the contribution of various educational approaches to meet the very diverse needs of children with different types and levels of disabilities, including the importance of 'social integration', with reference to social responsibilities. The importance of access to all basic services for children with disabilities is also promoted, as well as respect for differences. The need to develop a child's 'active participation' is also encouraged. These principles – social inclusion, access and participation - form the basis of what our review looks for in terms of the impact and outcomes of programmes and policies.

Inevitably, these different approaches and ideologies have had an effect on the type of research – and practices – undertaken (Armstrong et al. 2011; de Boer et al. 2011; Ravet 2011). Jackie Ravet argues that, in the UK at least, there is:

> no single, coherent, inclusion discourse that could be said to have dominated the evolution of inclusive practice in our schools … At the risk of some over-simplification, at least two dominant and contradictory perspectives can be identified within the inclusion literature … The first might be designated a 'rights-based' perspective that argues for an end to all educational segregation and calls for the inclusion of all children and young people in mainstream schools … The right of children to wide academic and social inclusion, and the importance of changing schools to accommodate this, are prioritised within this perspective. The second might be designated a 'needs-based' perspective that draws attention to the lack of research evidence in support of mainstreaming and the dangers of exclusion that can arise from it. The preservation of a range of educational provision to meet the distinctive group needs of learners with additional support needs is prioritised within this perspective (Ravet 2011: 668).

1.2.3 Accessibility: a broader view than mere presence in class

The notion of *access* encompasses a myriad of factors, which are directly or indirectly linked to the education process. These include physical accessibility (including transport, building access, water and sanitation) as well as: genuinely inclusive modes of learning that can be adapted to the needs of the child; the ability of teachers and school staff to adapt information and processes; the attitudes of children and their parents, as well as communities and decision makers; the beliefs of the family; and policies and state incentives that encourage social inclusion and cohesion. However, often - especially in developing and fragile contexts - the inability to overcome crucial challenges is reflected in the fact that

What are the impacts of approaches to increase the accessibility to education for people with a disability across developed and developing countries and what is known about the cost-effectiveness of different approaches?

programming and evaluation seems unable to move beyond considerations of physical access/non-access and attendance/non-attendance (see Trani et al. 2011). Access also requires a change in perceptions and attitudes that are prevalent within a given community, towards children with disabilities. This review attempts to consider 'access' within this broad definition, paying specific attention to factors that both enable and maintain access.

1.2.4 Impact and cost-effectiveness

Impact evaluation has been 'defined ... as analyses that measure the net change in outcomes for a particular group of people that can be attributed to a specific programme using the best methodology available, feasible and appropriate to the evaluation question that is being investigated and to the specific context' (International Institute for Impact Evaluation 2010). For our review, we have retained items that: clearly state an educational intervention (policy, programme, or project); specify a specific methodology (qualitative or quantitative); and refer to specific educational outcomes (numeric or qualitative).

1.3 Policy and practice background

The main aim of this review is to map the evidence available to understand the impact of projects, programmes and policies that claim to improve access of children with disabilities to education.

1.3.1 Education for children with disabilities

There are a number of approaches that aim to enable children with disabilities by promoting access to education. These vary according to country, context, funding available, policy and legislations. We outline here the key approaches used in the review.

Inclusive education (IE)

Inclusive education promotes the inclusion of children with disabilities within formal mainstream school systems, beyond just making room for children with disabilities, by truly ensuring that all elements are in place to ensure that they benefit from learning and realise their potential. The Enabling Education Network (EENET) defines IE as a process that:

> acknowledges that all children can learn; acknowledges and respects differences (for example, age, gender, ethnicity, language, disability, and HIV status); enables education structures, systems and methodologies to meet the needs of all children; is part of a wider strategy to promote an inclusive society; is a dynamic process which is constantly evolving; need not be restricted by large class sizes or shortage of material resources. (Enabling Education Network 1998)

However, IE programmes can struggle between these theoretical expectations and practical realities. Certain definitions attempt to reconcile these two aspects by introducing nuances into the definitions. According to UNESCO:

> Inclusive education is a system of education in which all the pupils with special educational needs are enrolled in ordinary classes in their district schools, and are provided with support services and an education based on their forces and needs. Inclusive schools are based on the basic principle that all schoolchildren in a given community should learn together, so far as is practicable, regardless of their handicaps or difficulties. They should recognize and take into account the diverse needs of their pupils, adapt to different styles and rhythm of teaching and provide quality education through the appropriate use of resources, school organisation and study plans as well

as partnership with the community. There is need to ensure that the services provided correspond exactly to the special needs, regardless of their grades. (UNESCO 2002)

Despite the difficulties faced with implementation, IE constitutes a relevant policy and advocacy tool with its strong grounding in human rights (Peters 2004). It brings issues of social justice and cohesion into sharp focus and constitutes a major impetus for more efficiently addressing the needs of children with disabilities, especially in formal education settings. However, as may be clear from the definitions given above, the concept remains unclear at the theoretical level, which results in difficulties in implementing coherent and sustainable programmes. Many developing countries have initiated mechanisms to ensure that children with disabilities are included in mainstream education programmes; however, this has not been universally successful, and schools do not always mainstream all impairment groups. This leads to a 'hierarchy of the excluded', with some impairment groups being further marginalised and excluded (Kalyanpur 2008). Furthermore, initiatives that are sometimes well-defined at the policy level are often ineffectively implemented for myriad reasons, including lack of resources, teacher training and expectations, and expertise, as well as persistence of negative social attitudes leading to discrimination and exclusion (Eleweke and Rodda 2002). As a result, IE programmes have often been reduced to simply having children with disabilities present in class, rather than genuinely included and learning (Law et al. 2004). Finally, one of the main challenges of IE today is that if it attempts to reach out to all vulnerable groups (including for example, children with HIV and transient populations), there is a risk that the framework may lead to children with disabilities, and children with non-physical disabilities such as hearing impairments or intellectual disabilities in particular, not having their specific needs addressed.

Special education needs (SEN)

Special needs education – is defined as 'educational intervention and support designed to address special educational needs' (OECD 2005). SEN (or special education as it was previously known) has been the major framework through which many educational programmes have been designed over the past few decades. Special education was often used to refer to the education of children with disabilities which took place in segregated (special) schools or institutions; however, in many countries now children with disabilities attend regular schools and other institutions (OECD, 2005).

However, whilst often used as an umbrella term within countries, SEN usually has a specific definition attached to it, with implications for provision of and access to education for children defined as having such needs. It is important to note that the concept of SEN (like disability) can mean different things in different countries, and the OECD definition is based on the need to extend the definition to incorporate the diverse needs of children with disadvantages (e.g. language, cultural, social economic backgrounds); learning difficulties (including dyslexia); as well as disabilities. The OECD definition therefore encompasses the range of children who are understood as having special educational needs and may need additional resources to support their education, depending on the ability of their school to adapt to these needs:

> 'those with special educational needs are defined by the additional public and/or private resources provided to support their education. The use of this definition in a consistent manner calls for agreement about the term "additional" and an appreciation of the various kinds of possible 'resources provided' which should be considered' (OECD 2007).

What are the impacts of approaches to increase the accessibility to education for people with a disability across developed and developing countries and what is known about the cost-effectiveness of different approaches?

It is important to gauge the effectiveness of SEN as an approach, as it has been argued that it is of value for children with certain impairments (e.g. autism) who require specific expertise (Lynch and Irvine 2009; Ravet 2011). On the other hand, where resources are more restricted, there are limitations to what is provided under the umbrella term 'SEN' and it is often provided through segregated institutions which, it is argued, are not cost-efficient, can change along with political priorities, and hold a view of disability that is rigid and sometimes outdated (Department for International Development 2010). Moreover, such programmes maintain segregation between children and are not always in line with a rights-based perspective.

Integrated education

This term is used to refer to a variety of educational systems in different countries; in the field of disability, some countries (for example, India) offer integrated special needs classes for children with severe impairments within formal systems.[2] These are segregated units within mainstream schools, though all children interact outside the classroom. This can be a first step towards increasing the visibility of children with disabilities, but to date there is limited evidence on its effectiveness as an approach.

Non-formal education and informal education: outside the classroom

Finally, while most of the literature concentrates on classroom-based education, education for children with disabilities not in school, and for adolescents and adults who were not able to attend school, is also an area of considerable interest. UNESCO defines non-formal education as:

> any organized and sustained educational activities that do not correspond exactly to the above definition of formal education. Non-formal education may therefore take place both within and outside educational institutions, and cater to persons of all ages. Depending on country contexts, it may cover educational programmes to impart adult literacy, basic education for out-of-school children, life-skills, work-skills, and general culture. Non-formal education programmes do not necessarily follow the 'ladder' system, and may have differing duration. (UNESCO 1997)

Studies of non-formal and informal education are only included in the review if they fit the inclusion criteria defined in Section 2.1.2.

Home-based education

There are a number of countries where parents opt for home-based education (or home schooling) for children with disabilities. In developing country contexts, a number of home-based interventions that include education are carried out through community-based rehabilitation programmes by various organisations. Studies that pertain to these types of intervention are included in the review if they fit the inclusion criteria defined in Section 2.1.2.

Adult education

A recent review of illiteracy among disabled adults undertaken by Groce and Bakhshi (2011) drew attention to the limited literature regarding education for persons with disabilities outside the classroom; however, as we are focusing on

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[2] In Northern Ireland, the term 'integrated education' is used to refer to the movement to educate Protestant and Catholic children, who have traditionally been segregated, together. See for example: http://www.ief.org.uk/.

children between the ages of 4 and 18 years old,[3] literature on this subject will be excluded from the review.

In sum, this review includes literature that encompasses primary school level and above and not early years or pre-school education. The articles selected for the review include those that focus on formal education (defined as either following a nationally prescribed curriculum or within a system which gets government funding, including mainstream schools, inclusive education (IE), SEN or integrated forms of education). Non-formal education is not included as part of this review; however, in some countries, SEN is defined as 'non-formal education'. In this case, such articles are identified through the search criteria (see Section 1.7.2). Finally, in view of the time and resource restrictions, it was not feasible to include home-based education programmes.

1.3.2 Impact and cost-effectiveness
Cost-effectiveness remains a major concern for policy makers and development actors working in the international arena. It is increasingly argued that IE structures are more cost-effective when compared with SEN structures. However, in contexts where the groundwork for inclusion has not been laid and where education structures are overburdened and understaffed, the cost of including children with disabilities may be higher. Although cost-effectiveness analyses in these contexts are often included in programme evaluations, this often equates to an estimation of cost per number of beneficiaries per programmes, rather than cost-*effectiveness*. Analysis of cost-effectiveness uses various resources in order to define the best means of achieving an impact through a defined action.

1.4 Research background
Since the Salamanca Conference (1994); the entry into force of the UNCRDP 2008 (United Nations 2006) and the UNESCO Education For All (EFA) framework that has been prominent since 2000, issues of accessibility to education have been brought into sharp focus. However, education of children with disabilities has not yet attained the universal levels desired due to various theoretical and practical concerns, in particular around programme implementation and assessment. These concerns stem from the lack of a coherent view of what constitutes access to education and what works best to achieve such initiatives. As a result, the education of children with disabilities demonstrates glaringly different realities in high-income countries in comparison to low- and middle-income countries or fragile states. The aim of this review is to provide information regarding the impact of education for children with disabilities in the development field, where policy makers will need to address some crucial overarching questions. The focus of this review is primarily to understand how these concepts are now being understood and utilised, and how their impact is being evaluated.

1.4.1 Disability: moving beyond the labels?
The process of labelling who should be included is a political one which inevitably leads to certain - often the most stigmatised - sections of society being left aside (Eyben and Moncrieffe 2006). Labelling is also a way of simplifying the approach to programming for humanitarian and development actors who often do not have the resources to adequately evaluate appropriately the needs of the population they are targeting. It is undeniable that in certain contexts (mostly high-income countries), policies are moving from a very restricted view of impairments to take into account conditions that may lead to long- or short-term disability. As a result,

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[3] This was determined in order to encompass the range of ages from primary through to the end of secondary education.

What are the impacts of approaches to increase the accessibility to education for people with a disability across developed and developing countries and what is known about the cost-effectiveness of different approaches?

social policies are not inherently linked to prevalence rates and there are attempts to set up mechanisms that cut across the various ministries to address the needs and requirements of persons with disabilities in a more comprehensive manner. In other contexts, where resources are often more limited, social policies are defined in terms of who and how many persons with disabilities there are: prevalence rates are then paramount and definitions of disabilities are often based on restricted models, viewing this as a permanent state and focusing mainly on impairments that are more socially and culturally accepted and thus more visible.

1.4.2 Education and disability
The discussion above draws attention to the methodological and ideological approaches to education for children with disabilities, and how the education field has discussed inclusion, segregation and special needs. However, to date there has been little in the way of formal review or evaluation of this work in low-income – or developing – countries. There has been a lot of work done describing programmes being undertaken in a range of countries and situations, but this has primarily been produced through service delivery agencies, organisations or others involved in such programmes. It is therefore not based on research or academic evaluation, and may be subject to the specific interests of those who produced or funded it. This extensive body of literature has, in turn, affected the types of research and the debates about inclusion. However, this is not without criticism: in their article *Inclusion: by choice or by chance?* Derrick Armstrong and colleagues (2011) argue that the language of inclusion 'masks many sins' (2011: 30). Moreover, they go on to argue that:

> The weaknesses of the 'inclusive perspective' are characterised by the theoretical vacuum in which inclusive education sits and by the lack of critical engagement with the realities of education and schools that the early movement for inclusive education had promised. (Armstrong et al. 2011: 37)

In sum, there is a lack of evidence to substantiate any argument as to which approach is the most effective, or indeed cost-effective. This is not the same as saying that the principles behind the approaches (in particular inclusive education) are not valid, but rather that there is a lack of evidence on effectiveness – what works and what doesn't, and how cost-effective a given approach is.

1.4.3 Output-outcomes-impact
The inability to overcome certain crucial challenges is reflected in the fact that current evaluations of education for children with disabilities are overly focused on considerations of access/non-access and attendance/non-attendance. As a consequence, despite theoretical advances and policy breakthroughs, education continues to be a service to be delivered, rather than a fundamental right. Access, which only constitutes a first step, is therefore often perceived as the objective of educational programmes for children with disabilities. But what efforts are made to look at processes, delivery or even completion of school? Beyond this, are there any attempts to assess qualitative outcomes and impact in terms of social change?

1.4.4 Previous systematic reviews
Recent reviews that have been carried out since 2000 with regard to the education of children with disabilities have differed in nature from the present study in terms of the framing of the research question. Some of the reviews focused on a specific type of disability, a specific level of intervention or a specific type of initiative. A review carried out in 2002 focused on 'the effectiveness of school-level actions for promoting participation by all students' (Dyson et al. 2002). Another review looked specifically at the 'impact of paid adult support on participation and learning in mainstream schools' (Howes et al. 2003). One review was carried out in two stages:

the first stage was a more general review to be used by various practitioners (Hall and Harding 2003), whereas a second review looked specifically at the evidence that could be of use to teachers (Harden et al. 2003). Some reviews aimed to analyse evidence pertaining to a pedagogical approach (Rix et al. 2006) or a specific subject (Bennett et al. 2005); whereas others focused on a specific form of disability that posed challenges in the classroom (Harden et al. 2003; Law and Plunkett 2009).

Some reviews were directly linked to the research question of our review, but these also had a focus on a certain approach towards education (e.g. Lindsay 2007), which explored the effectiveness of inclusive education, or a focus on certain types of intervention within schools (e.g. Effgen and McEwen 2007), which reviewed physical therapy interventions for school-age children with disabilities.

Overall, these reviews lacked a focus on overall education outcomes and their impact on long-term outcomes, and were not synthesised in ways that were comparable. There was little available that looked at the effectiveness of specific approaches to education, or indeed what could be considered as cost-effective. Our review attempts to provide an overall mapping of the evidence relating to all forms of disabilities (as defined below), all levels of intervention (child, school, national, etc.) and for all school-age children (between 4 and 18 years).

1.5 Purpose and rationale for the review

Increasing accessibility to education for children with disabilities is a complex amalgam of theoretical, developmental and human rights issues, and calls for a series of interventions in terms of policy design, service delivery and programming. However, there was a need to understand what these various initiatives had achieved, and to identify the gaps that exist within the body of knowledge pertaining to this field of work. This systematic review has attempted to tackle these interconnected concerns and provide a comprehensive picture of the impact of interventions by:

- mapping the evidence base relating to the impact of education programmes for children with disabilities;

- synthesising research that evaluates the impact of education initiatives for children with disabilities;

- systematically identifying knowledge gaps in this evidence base that hinder policy planning.

1.6 Authors, funders, and other users of the review

This review is relevant for donors and practitioners, as well as researchers. As noted above, there is a paucity of research on the impact or effectiveness of interventions within the disability arena, and education in particular. This is despite the variety of interventions used in different countries and contexts (outlined above). The review is also timely in so far as the UNCRPD calls for improved data on disability globally, a call reflected by a shift in donor policies and practices to be more inclusive, in particular in the UK Department for International Development and AusAID.

Authors
The Leonard Cheshire Disability and Inclusive Development Centre (LCDIDC) has a proven track record of analysing complex disability issues. Its strategic position between academia (University College, London) and practitioners (Leonard Cheshire Disability) reflects commitment to bridge the gap between knowledge and

practice. As a result, it can draw upon a range of experts, researchers and implementers worldwide.

- Parul Bakhshi, PhD, co-lead reviewer, a social psychologist, specialises in education programmes for persons with disabilities. She has conducted systematic reviews on questions of adult literacy programmes and mental health for LCDIDC. She has also carried out evaluations and assessments of education programmes for Save the Children-UK, as well as for UNICEF.

- Maria Kett, PhD, co-lead, has undertaken a range of policy-linked, qualitative, action-based reviews that analyse the social and political implications of policies for marginalised and excluded groups. She has also worked on access to education for children with disabilities in humanitarian contexts.

- Kathryn Oliver, PhD, University of Manchester, is an expert on systematic reviews and has experience of working on other reviews and with the EPPI-Centre.

Review Group members

- Professor Nora Groce (LCDIDC) has undertaken systematic reviews on disabled adolescents, women and violence against disabled children for UNICEF, the UN Secretary General's Office and the WHO.
- Dr Ray Lang (LCDIDC) has extensive experience in the comprehensive review of disability policies. He has carried reviews on disability policies and community based rehabilitation.
- Marcella Deluca (LCDIDC) is an Inclusive Education specialist, in particular the review and analysis of inclusive educational data through the OECD and related international organisations
- Sunanda Mavillapalli (LCD) has extensive experience in the field of implementation of inclusive education programmes for children with disabilities, in particular in low and middle income countries.
- Professor Tony Booth is Professor of Inclusive and International Education at Canterbury Christ Church University College

Shari Krishnaratne, Research Fellow, London School of Hygiene & Tropical Medicine; Evaluation Specialist at London School of Hygiene & Tropical Medicine/3ie

1.7 Review questions and approach

Initial review question:

> What are the impacts of measures to increase the accessibility to education for children with a disability across developed and developing countries and what is known about the cost-effectiveness of different approaches?

Revised review question:

> What are the impacts of *approaches* to increase the accessibility to education for children with a disability across developed and developing countries and what is known about the cost-effectiveness of different approaches?

1.7.1 The scope of the question

Focus on the education of children

In order to be comprehensive, the review focused on formal education delivered primarily through school-based settings; hence we have set the age limit between 4 and 18 years old.

Formal education is defined by UNESCO as:

> the hierarchically structured, chronologically graded education system, running from Primary school through the university and including, in addition to general academic studies, a variety of specialized programmes and institutions for full-time technical and professional training. (UNESCO 2002)

According to the *International Standard Classification of Education* (UNESCO 1997), this can be further defined as:

Level 1 - Primary education:

> Programmes at level 1 are normally designed on a unit or project basis to give students a sound basic education in reading, writing and mathematics along with an elementary understanding of other subjects such as history, geography, natural science, social science, art and music. In some cases religious instruction is featured. The core at this level consists of education provided for children, the customary or legal age of entrance being not younger than five years or older than seven years. This level covers in principle six years of full-time schooling. Throughout this level the programmes are organised in units or projects rather than by subjects. This is a principal characteristic differentiating programmes at this level in most countries from those at level 2 [secondary education]. (UNESCO 1997)

Level 2 – Secondary education:

> [T]ypically designed to complete the provision of basic education which began at ISCED level 1. In many, if not most countries, the educational aim is to lay the foundation for lifelong learning and human development on which countries may expand, systematically, further educational opportunities. The programmes at this level are usually on a more subject-oriented pattern using more specialized teachers and more often several teachers conducting classes in their field of specialization. The full implementation of basic skills occurs at this level. The end of this level often coincides with the end of compulsory education where it exists. (UNESCO 1997)

Due to the age range of most formal schooling we chose to include studies that referred to the education of children aged between 4 and 18 years.[4] Consequently this review does not include education and literacy of adults, nor pre-school and early education interventions, which would warrant a different question to be asked of the literature.

Various types of intervention – different impacts

The review includes a range of interventions - from international frameworks, national and regional policies and large-scale programmes to specific projects, large and small. However, in order to assess an impact, we require that the type of intervention be clearly outlined within the body of work considered.

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[4] Up to the age of 18 years old, as defined by international conventions and frameworks such as the UN Convention on the Rights of the Child

What are the impacts of approaches to increase the accessibility to education for people with a disability across developed and developing countries and what is known about the cost-effectiveness of different approaches?

In line with this, articles and papers were screened for types of research that allow the assessment of the impact. Where available, we included a range of research methodologies: quantitative and qualitative surveys, experimental studies and randomized control trials (RCTs), as well as small-scale case studies and qualitative data. Finally, we used a wide range of indicators to assess impact: qualitative rates as well as qualitative evaluations with regard to perceptions of education for children with disabilities, within schools, families and communities.

The definition of 'developed' and 'developing' countries were based on World Bank definitions.[5]

1.7.2 Search strategy

Disability

It was essential to define the types of disabilities to be included in our search. In order to answer the review questions in a coherent and systematic manner and based on the definition stated previously, and inputs from expert topic reviewers, users and funders of the study, we have included the following types of disabilities:

- physical disabilities;
- sensory disabilities;
- mental illness;[6]
- intellectual disabilities (learning/behavioural disabilities);
- epilepsy, fits and seizures.

We exclude conditions that describe a specific impairment and/or that constituted a very specific field of research and intervention. More specifically, we excluded all papers pertaining to:

- chronic illnesses and diseases (cancer, heart disease, diabetes, etc.);[7]
- communicable diseases;
- obesity and eating disorders;
- HIV/AIDS;
- gifted individuals;
- drug and alcohol related issues;
- broad mental health issues;[8]
- short-term disabling conditions.

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[5] http://data.worldbank.org/about/country-classifications
[6] Due to the often transitory and difficult nature of mental health diagnosis, particularly in children and adolescents, it was decided to only include those that had a specific category or label, though It is important to note that mental health diagnosis is often inexact and blurred (WHO 1992). We therefore included those broadly defined as: mental retardation (often used in the US for range of developmental and/or cognitive delays); disorders of psychological development (including speech and language delays, autism) and Behavioural and emotional disorders with onset usually occurring in childhood and adolescence (including ADHD and other conduct disorders). See World Health Organization (1994).
[7] Following discussion with the AUSAID review team, as inclusion of these categories in the search terms would elicit a very large number of health-focused papers for children.
[8] We excluded the common mental health conditions of anxiety, stress depression and other neurotic, stress-related and somatoform disorders; substance misuse, phobias, and adult-onset disorders (see World Health Organization 1994)

Outcomes[9]

In order to determine the impact of interventions, we have included studies that provided information on the impact of an identified intervention, programme or policy:

At least one primary educational outcome:

- direct educational indicators (enrolment rates, retention and transition rates, completion rates, interruption and dropout rates, literacy rates);
- a cost analysis of the given intervention (cost of education per child, etc.)
- qualitative outputs (views and opinions of the children, parents, teachers and community members regarding a given intervention).

Any additional secondary outcome (process indicators):

- awareness-raising about disability issues;
- accessibility of the learning environment (e.g. physical access, water, sanitation, teaching materials).

Levels and types of Intervention

A predetermined range of levels and types of interventions are included in the review, including: regional, national and international policies and initiatives, projects and programmes at all the following levels:

- child level;
- school level;
- state level;
- country level;
- international level.

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[9] Defined as a direct outcome for the child with disability

2. Methods used in the review

2.1 Type of review

In order to assess the impact of approaches to increasing the accessibility to education for children with disabilities, the review has generated evidence to answer the crucial questions of *what* accessibility to *what* education for *which* children with disabilities. This initial scoping of the literature provides a 'systematic' map of the currently available body of work that contributes evidence to address the research question.

2.1.1 Screening limitations
Difference of existing data with regards to 'developing' and 'developed' contexts

The review focuses primarily on documentation on work in developing and fragile contexts, though theoretical and methodological documents from higher-income countries have been included where they are of interest regarding the assessment of programmes and policies included in the review.

Scrutinising the grey literature

A key challenge of this review was to define a search strategy that allowed the screening of a very wide and diverse body of 'grey' literature. This includes working papers, policy documents, briefs, white papers, technical documents, and project and programme reports, as well as website information from various organisations, identified by searching relevant websites and contacting authors as necessary. The body of evidence that exists in the 'grey' literature is increasingly relevant to the aim of policy design and programme implementation. The term 'grey literature' is used to describe 'materials not published commercially or indexed by major databases. While GL may be of questionable quality it has been shown to have an impact on research, teaching and learning ... GL may not go through a peer-reviewed process, and its authority must be scrutinized' (Giustini 2012). We identified 19 websites as sources for evidence on the education of children with disabilities (see Appendix 3). However, each website had a different format for keyword searching: some allowed inclusion/exclusion parameters to be set, while others presented their publications according to predefined thematic categories. As a result, we had to tailor the keyword search to the format of each website or individually 'hand' screen the lists of publications in order to identify documents that would be relevant to the review. In view of this time-consuming phase, we have determined the body of evidence from these sources, but due to complexity, time and resource constraints, we have not undertaking mapping beyond this.

2.1.2 Inclusion/exclusion criteria
The inclusion criteria were applied in a successive manner and the document considered was excluded as soon as it did not meet one of the following criteria (see Appendix 1.2):

- *Date of publication:* In order to be relevant in our contribution to the current debates around education for persons with disabilities, and in order to make our search more precise and in-depth, we limited it to the inclusion of documents published from 2000, following the EFA-Dakar 2000 conference. Therefore, only studies published after January 2000 and before January 2012 were included. This date refers only to the publication date of the included study.

- *Research design*: Our search strategy aimed to identify cost-benefit studies which focused on the financial resources and established costs per head, for instance, as well as any broader economic benefits of inclusion. We took into account two aspects of impact in order to include studies and reports:

    1. Studies and surveys that had attempted to assess the results of a given programme/policy. Specific care was taken to ensure that only the documents that attributed change (positive or negative) or an educational outcome to an identified policy or programme intervention for the education of children with disabilities were analysed. Critical appraisal allowed for the inclusion of documents that analysed any probable or potential impact of programmes where it was difficult to ascribe an effect directly to an intervention.

    2. Documents that provided theoretical and methodological discussions pertaining to undertaking impact evaluations could also be included in the review. These were considered in terms of their relevance towards policy definition.

- *Studies that referred to specific methodology/tools used*: including quantitative and qualitative work (RCTs, experimental designs with control groups, surveys, interviews, case studies, opinions, etc.). Commentaries, essays, opinion papers, books and chapters were excluded.

- *Age of children*: Documents referring to children aged between 4 and 18.

- *Type of population*: Children aged 4 -18 identified as disabled as defined in the protocol: physical disabilities, sensory disabilities, mental illness, intellectual, learning or behavioural disabilities, and epilepsy, fits or seizures. Studies that referred to chronic illness and diseases or non-disabled populations, as well as conditions that were not included in the list of disabilities defined for this review (e.g. communicable diseases, obesity and eating disorders, HIV/AIDS), were excluded.

- *Measuring an outcome*: In order to evaluate impact, included documents had to present one or more of the following outcomes:

    - Access;
    - Attainment;
    - Transition or retention;
    - views of children and families;
    - cost-effectiveness

    Those that did not, or were irrelevant for educational policies, were excluded.

- *Type of education*: Documents that referred to specific formal or non-formal educational structures, including primary and secondary schools and special education facilities. Home-based education was excluded.

- *Identification of an educational intervention*: Documents that clearly referred to an educational policy, programme or any other form of intervention for the education of children in general.

2.2 User involvement

2.2.1 Approach and rationale
This review is primarily intended for policy makers, donors and other decision makers in the areas of education for children with disabilities. However we hope it will also be useful to practitioners, as well as academics in the field of education and disability. The review aims to provide policy and practice recommendations

What are the impacts of approaches to increase the accessibility to education for people with a disability across developed and developing countries and what is known about the cost-effectiveness of different approaches?

about the effectiveness of different approaches to education for children with disabilities.

2.2.2 User involvement in designing the review
A number of policy advisers from the education team at AusAID have been involved in the definition of the objectives and definitions used in the review, as well as the AusAID disability adviser. The initial protocol underwent extensive consultation from the Disability and Education teams, including the Education Thematic Group, in order to ensure that the research findings would be useful in informing programming.

Recent work has highlighted the importance of user involvement in research, though this can take many forms (Beresford 2010; Oliver et al. 2008). Therefore, following finalisation of the review, policy makers, service delivery organisations and others involved in the field of the education of children with disabilities will be contacted via personal links, user groups such as the Global Partnership on Disability and Development (GPDD), the International Disability and Development Consortium (IDDC) working group on education, and EENET. They will be asked to provide feedback on the recommendations and avenues for further research. Academic audiences will be reached via peer review publications, as well as conference presentations.

2.3 Identifying and describing studies

2.3.1 Identification of potential studies: search strategy
Three different types of sources were used: electronic databases to identify research papers; an electronic search of databases of organisations and networks working in the field of disability and education; and direct access to field document through partners, contacts, and experts and other key informants.

Electronic searches of databases

An iterative search strategy for electronic databases was developed using index terms and free texts terms (see appendix 2). The databases searched were:

- Google Scholar;
- Web of Science;
- JSTOR;
- PubMed/Medline;
- NHS EED (Economic Evaluation Database);
- Cochrane Library;
- Campbell Library;
- ERIC;
- PsycLit;
- PsycInfo.

Search strategy for grey literature

For the 'grey' literature, an initial hand search of titles and abstracts using the determined inclusion/exclusion criteria was undertaken. Doing this, we identified 3,900 documents from 19 websites for potential inclusion. These came from a wide range of sources, and would therefore need careful quality appraisal. However,

due to limited time and resources these were screened on title and abstract but no further appraisal or review was undertaken.

The following categories of websites were searched:

- Websites of international agencies and consortium working in the field of education (UNESCO, UNICEF, World Health Organisation, World Bank, Inter-Agency Network for Education in Emergencies);
- Websites of development agencies (USAID, DfID, AusAID);
- Websites of networks and consortiums working on education and disability (Handicap International, EENET);
- Websites of development think tanks and institutes working in education (International Institution for Education Planning, Institute of Development Studies, Overseas Development Institute);
- Websites of networks and consortiums working on disability (Global Partnership for Disability and Development, International Disability and Development Consortium, Australian Disability and Development Consortium and Source);
- Websites of international NGOs working in education and disability (Leonard Cheshire Disability, Handicap International, CBM, Save the Children).

A list of websites searched as well as number of documents retrieved is available in Appendix 3.

Experts/other key informants

An advisory group of experts in policy, practice and research was convened. An initial email requesting input into the review was posted on the websites of the Global Partnership on Disability and Development (GPDD) and the International Disability and Development Consortium (IDDC) working group on education. This elicited three responses which directed us to websites or provided us with overviews and case studies (two of which were not included as they did not fulfil the inclusion criteria) and a review on inclusive education. The European Agency for Development in Special Needs Education was also invited to be part of the review team, but it declined due to perceived conflict of interest.

2.4 Characterising included studies

A keywording tool was developed, drawing on the health promotion keywording tool developed by the EPPI-Centre (Peersman et al, 1997). This aimed to identify the characteristics of the studies with regard to population, study design, setting, outcomes and focus. It also looked at the 'impact' of the intervention. In order to do this, it identified the type of study, the nature of the tools used for assessment and the specific types of outcomes that were measured. In the initial phase and in view of the large volume of literature found, an initial scoping was undertaken using year, age, research design, population, outcomes and type of education. An initial map was developed in order to analytically describe the literature in this field. However, the limited time available for completion of the map meant that it was not possible at this stage to code for study methods and quality information. The keywording tool can be found in Appendix 4.

2.5 Identifying and describing studies: quality assurance process

The exclusion and inclusion criteria were developed and piloted by the review team. The screening for the map was conducted by one reviewer. Where it was not clear if a study met the inclusion criteria, it was screened by another member of the review team and differences were resolved through a discussion. Two reviewers were involved in the coding process, and each study was coded by two

What are the impacts of approaches to increase the accessibility to education for people with a disability across developed and developing countries and what is known about the cost-effectiveness of different approaches?

reviewers. Where there were differences in the data extraction of the two reviewers, these were resolved through a discussion. Moderation was also conducted at the beginning of each process (i.e. screening and coding). This was a process in which all the reviewers involved in this review discussed their screening and coding procedure. It was done to ensure that there was a uniform understanding of the criteria applied in this review.

2.6 Software

Studies were stored, screened and coded using EPPI-Reviewer 4.0.[10]

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[10] http://eppi.ioe.ac.uk/cms/Default.aspx?alias=eppi.ioe.ac.uk/cms/er4

3. Identifying and describing studies: results

3.1 Mapping the evidence

In total, the number of documents identified via the electronic database searches was 7,537 (3,637 from academic databases plus 3,900 from grey literature - though as noted above, the grey literature was not included in the database). After removing the duplicates identified by the EPPI-Reviewer software, 2,044 documents remained. These were screened on abstract and title according to the criteria defined above. After this initial screening we identified 371 articles that were screened on full text. Of these, 271 were excluded on the inclusion criteria and 100 were keyworded. Eleven of these articles were not available.[11] The final number of articles included was 89, of which 14 were review articles. The included articles were keyworded according to the keywording tool agreed by the team in order to present a profile of the evidence.

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[11] Despite several attempts to retrieve; however, due to limited time and resources, these were not followed up. A list is available in Appendix 6.

What are the impacts of approaches to increase the accessibility to education for people with a disability across developed and developing countries and what is known about the cost-effectiveness of different approaches?

Figure 3.1: Flowchart of studies through review
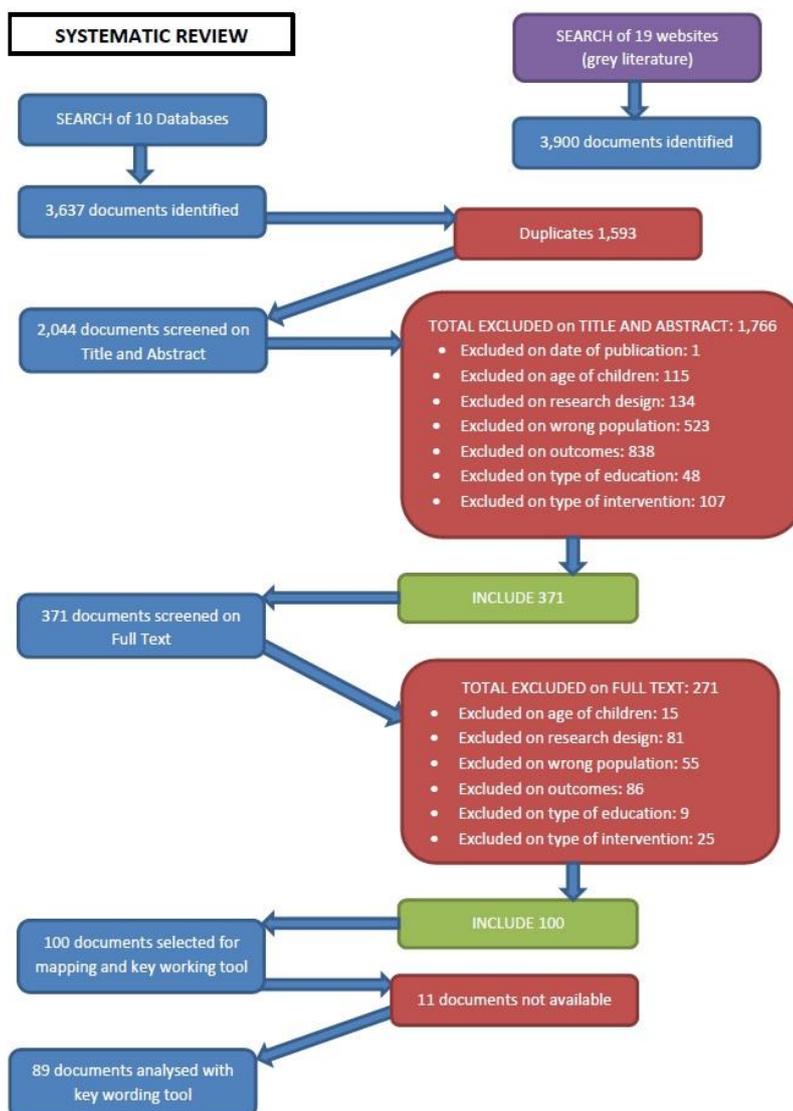
3.2 The review articles

All of the 14 review articles focused on high-income countries (mainly the USA), and the themes reflected the overall themes of the articles included in this review. Six focused on learning disabilities; of these, four focused on interventions to improve reading and writing (Baker et al. 2003; Foorman et al. 2003; Joseph and Konrad 2009; Lemons and Fuchs 2010) of which one (Lemons and Fuchs 2010) focused specifically on Downs Syndrome and the development of phonological awareness. Overall, the reviews concluded that timing, methods, strategies and policy change were all necessary to support improvements in these areas. Two focused on mathematical ability (Evans 2007; Butler et al. 2001). Two of the reviews looked specifically at policy or other interventions: one explored the implications of the US policy 'No Child Left Behind' for children with developmental disabilities (Wakeman et al. 2007), and one looked at conductive education, a specific intervention using body movements for children with cerebral

palsy (Bourke-Taylor et al. 2007). Three of the studies reviewed current strategies and interventions for the management of children with autism. Of these, one was a review of the detection, intervention, education and psychopharmacological management of children with autism and autistic spectrum disorders (Bryson et al. 2003), which concluded that screening was less useful than early behavioural intervention. Harrower and Dunlap (2001) reviewed the literature about the inclusion of children with autism in mainstream classrooms and concluded that for these children, specialised support was required to be successful in such educational contexts; however, some of the techniques used – including peer mediated interventions - had also been useful. A further review by Jordan (2005) concluded that no one intervention suited every child and much needed to be determined by individual behaviour. Only one review explored augmentative and alternative communication (AAC) for prompting literacy in children with special educational needs (Hetzroni 2004). The one review on deaf children specifically explored the acquisition of vocabulary and educational implications for deaf and hard of hearing children (Luckner and Cooke 2010). One of the reviews on Attention Deficit Hyperactivity Disorder (ADHD) explored the economic impact that it had on families, education system and healthcare (Pelham et al. 2007), while the other (Raggi and Chronis 2006) reviewed interventions to address academic impairment, and concluded that while the treatments for ADHD impacted on the behaviour of the children, their efficacy on improving academic outcomes was less clear.

3.3 Characteristics of the research studies

3.3.1 Population
In terms of the type of disability, almost half the studies focused on intellectual and learning disabilities (47 studies); 18 studies focused on autism and 14 on hearing disabilities (see Figure 2). Physical disabilities and multiple disabilities formed the next largest group (seven and eight respectively), with visual disabilities and mental health amongst the lowest numbers.

Figure 3.2: Number of studies by type of disability
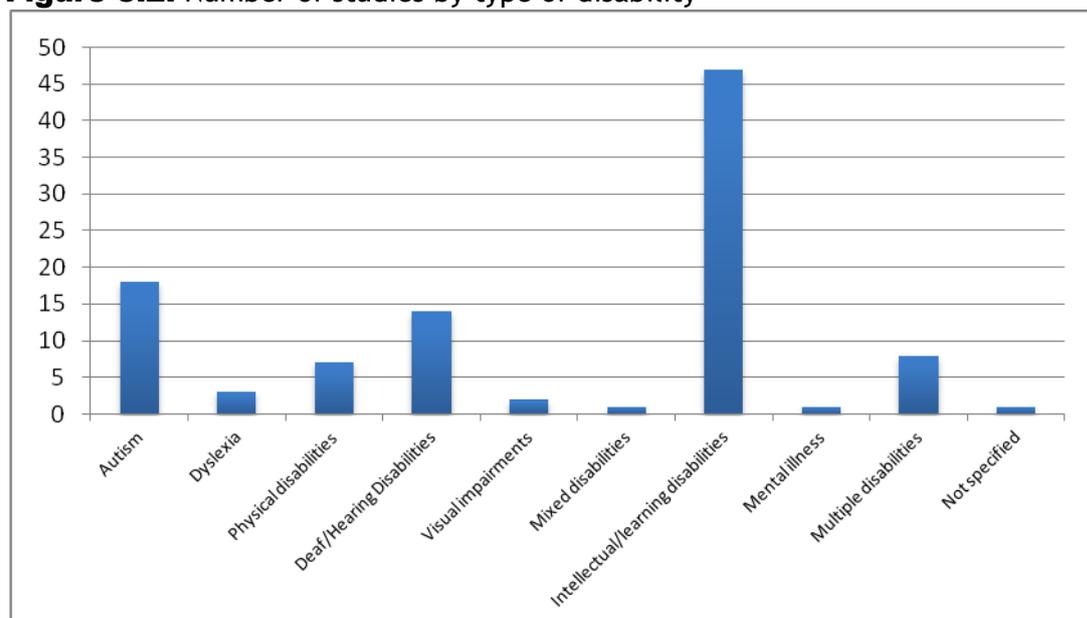
Note: Studies may relate to more than one category[1]

23

What are the impacts of approaches to increase the accessibility to education for people with a disability across developed and developing countries and what is known about the cost-effectiveness of different approaches?

Therefore, by far the majority of the studies identified focused on children with learning disabilities. This is interesting, as they are often perceived to be amongst the most disadvantaged, as well as amongst the most – certainly in developing countries – difficult to include in education. It was also interesting to note that autism was highly represented in the literature, as were deaf and hearing-impaired children. This may be explained by the proliferation of psychology-based literature, as well as reflective of research interests in the UK and the USA. Interestingly, there was very little literature on blind and visually impaired students, or students with physical disabilities which are very prevalent impairments in low-income countries. One study in South Africa did assess the impact of policies to promote mainstreaming for children who had paraplegia; however it concluded that further research was required in order to assess real and long-term participation (Vosloo 2009).

The majority of studies focused on primary (46 studies of children 4 -10 years of age) and early secondary stages (31 studies of children 11-14 years of age). This means that the majority of the conclusions we can derive from this mapping relate to primary-school age children.

3.3.2 Study design
- Nearly 70 per cent of the data (51 studies) presented quantitative findings, while only 13 studies consisted of mixed method - quantitative and qualitative - findings.

- One was a single-subject case study; 14 had between 2 and 10 subjects, 24 had between 11 and 50 subjects, 12 between 50 and 100, and 16 comprised more than 100 subjects. Four were not specified. The others were reviews.

- The tools used also varied: a majority of the studies (49) used tests and established performance measures (scales).[12]

Though many of the studies were well constructed, they were performed as intervention experiments in higher-income settings. There were very few studies that addressed approaches used in middle- or low-income settings, and there were few studies that evaluated outcomes beyond cognitive or classroom achievements. Therefore, although these studies present a picture of what and how well children with various disabilities can do within classroom, these measures alone do not provide the required information for making recommendations in terms of policy and programming; in other words although most studies might hold scientific validity, their external validity is not very strong.

3.3.3 Setting
The overwhelming majority (77 per cent, n= 58) of the studies identified via the electronic database search were based in high-income ('developed') countries: 33 in North America (mostly in the United States); 17 in continental European and 13 in the United Kingdom; seven were based in Australia and New Zealand.[13] Eleven studies focused on low- and middle-income ('developing') countries, including South Africa, China and Brazil. In the remaining studies, the countries were not specified, or they were reviews with multiple countries of focus (see Figure 3.3).

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[12] Some studies could be categorised with more than one keyword.
[13] Again some of the studies had more than one keyword possible.

Figure 3.3: Number of studies by geographic area
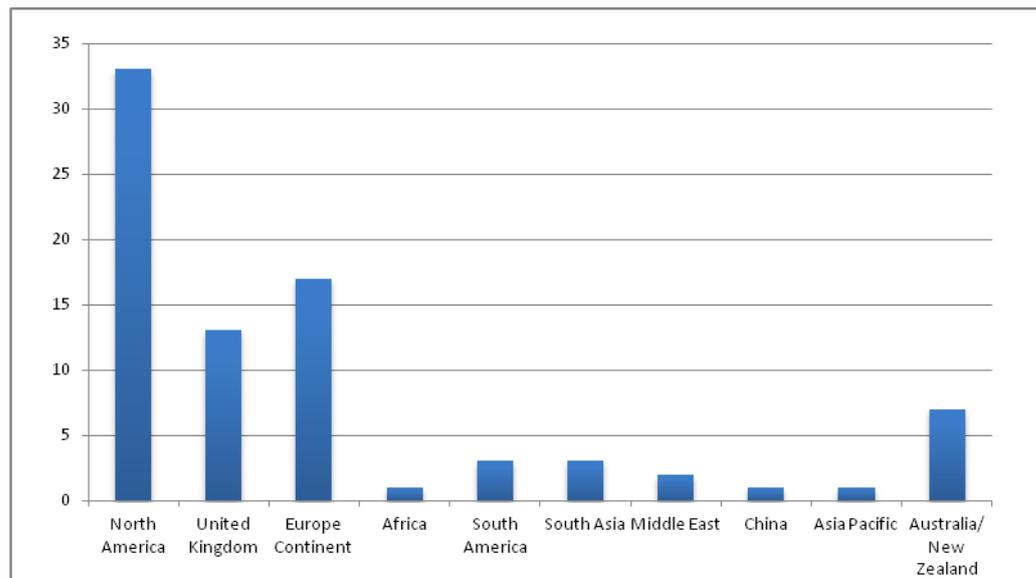
It is clear from this map that the majority of work in this field is concentrated in higher-income countries (HICs); this will inevitably skew the results towards the evidence base from the HICs. This means that some of the questions about education for children with disabilities in middle- and low-income countries are still unanswered; the research in the HICs may not have immediate or direct relevance to them, as the approaches used, resources and outcomes, may well not be applicable or useful for them.

3.3.4 Focus of studies
In terms of the type of education, 24 studies focused on cognitive techniques, while 31 focused on general education programmes (mostly comparing inclusive or special education initiatives in terms of classroom achievements).

The keywording tool was designed to identify the links that exist between the intervention and the observed outcomes/outputs.[14] These can be summarised as follows (see Figure 3.4).

The majority of studies were assessments of educational programmes being implemented within school settings (60 studies); 23 were more experimental in nature, designed to test a specific theory or evaluate the performance of a given group on a series of tasks. The majority of studies used tests (standardised or specifically designed) in order to gauge the progress of children. An additional 13 studies used observation techniques in order to assess achievement.

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[14] As above, some of the studies were coded with more than one keyword.

What are the impacts of approaches to increase the accessibility to education for people with a disability across developed and developing countries and what is known about the cost-effectiveness of different approaches?

Figure 3.4: Number of studies by types of primary outcome
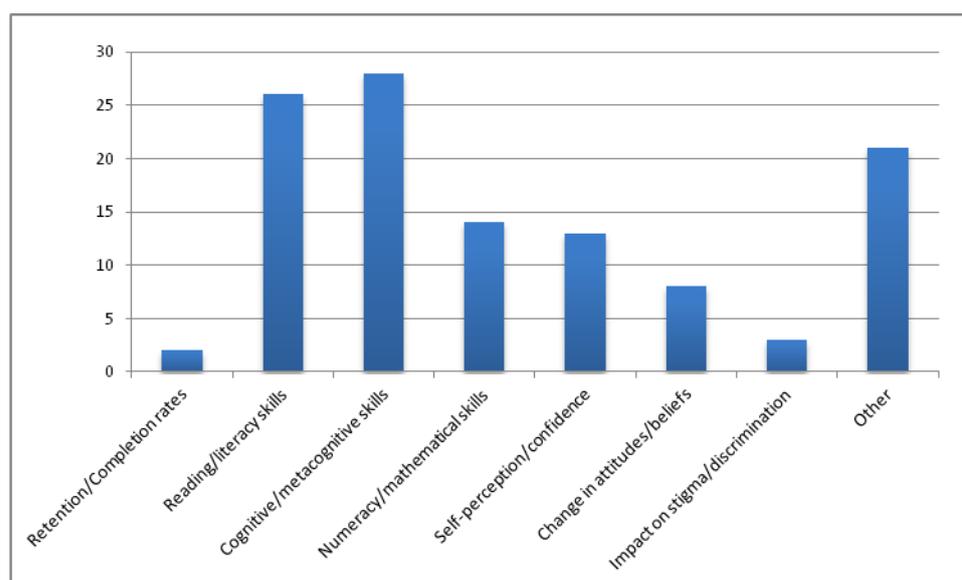
The outcomes of the studies identified through our search related to the nature of the intervention; as a result, 26 studies focused on reading skills/abilities, while 28 studies assessed cognitive and metacognitive skills (most of which were related to literacy and numeracy and word recognition). Fourteen studies looked specifically at numeracy or mathematical skills. Finally, 13 studies looked at self-perception and 11 at attitudes or stigma.

Close to 70 per cent of the studies (50) focused on inclusive education or mainstream schools. There were 27 studies based in special needs education schools and 4 in integrated classrooms.

Table 3.1: Number of studies by type of intervention

Type of intervention	
Inclusive education/mainstream school	50
Special school	27
Integrated classroom	4
Other/not specified	8

There were no studies that presented an analysis of the cost-effectiveness of a given intervention. Some studies referred to the cost of education to the parents or the economic burden of a given disability; however, none presented an idea of how a given intervention was more or less costly than the absence of the intervention or in comparison to another form of schooling for children with disabilities.

3.4 Discussion of findings

3.4.1 The geography of the education of children with disability
In terms of impact analyses and cost-effectiveness, the body of work referring to policies and programmes in 'developed' or higher-income countries is considerably larger than that found in 'developing', or low-income and transitional contexts. The nature of the body of work is also different in countries where national policies have been in place for a number of years; where the state has carried out

assessments and evaluations; and where academic research centres have undertaken monitoring of impacts (for example, the UK, France, the USA). In contexts where the resources are scarcer and where policies for persons with disabilities are often non-existent, the majority of the work had been carried out by international agencies and other non-governmental organisations. However, it is worth reiterating here that few of the findings of such programmes have been evaluated or published in peer-reviewed papers, and outcomes are often based on other reporting requirements stipulated by various donors. The results are often written up in programme reports, policy recommendations or other briefing papers. This body of 'grey literature' may, however, offer some more contextually focused results than some of the studies included here, particularly for lower-income countries. However, given the sheer diversity and volume of this work, it needs to be appraised using a more specific methodology for selection and tools for gauging the quality standard, which was beyond the scope of this current review.

It is evident from the literature that definitions and resulting interventions are dependent on the context, as well as the national policies that are in place. As a result, the number of terms that we found to refer to disabling situations that children face within the educational context were numerous, and included terms such as 'dysnumeria', 'mathematically challenged', 'severe language delays', etc. In addition to this proliferation of terms, there was in some cases an estimation of the impairment as being mild, moderate or severe. Disability is an umbrella term that is used to refer to very different learning realities. The vocabulary used in many of the studies that focused on higher-income countries reflected the existence of educational provisions and learning techniques that could help children within already existing school systems. The question of accessibility - which is so predominant in the literature pertaining to low- and middle-income contexts - is therefore not of central focus in the studies looking at impact evaluation within the electronic databases. **Our screening shows a gap in studies that look at impact evaluation of accessibility for children with disabilities within the academic research corpus.**

3.4.2 The nature of education

Two studies from Brazil (by the same authors) looked at the reading abilities of children with hearing impairments or intellectual disabilities (Kelman and Branco 2004, 2009), while another was a short description of a reading technique used with children as well as adults (Melchiori 2000). However, a specific review focusing on literature in Spanish/Portuguese is required to identify more studies of interest in the South and Central American continent. Three studies from India were also identified: one explored how well children with learning disabilities performed academically in school leaving exams in one Indian State (Maharashtra) with a policy in place that allowed them more time to finish exams (Kulkarni et al. 2006). The second was a review paper which compared the various educational policy provisions made in India over the years for children with intellectual disabilities (Narayan et al. 2005); the third looked at children defined as 'slow learners' and thus 'scholastically backward' and how individualised attention could be effective (Singh 2006). Taken together, these three papers presented very diverse ways of tackling the issues related to the education of children with disabilities: in terms of state-level policy (which is very much oriented towards the achievement of exams and grades). However, they did not analyse the needs of children who had severe forms of intellectual disabilities, either by type of education required (special needs, inclusive, home-based), or in terms of literacy/reading skills. Although these papers suggested further interventions and programmes, the implications for public policy were not made.

What are the impacts of approaches to increase the accessibility to education for people with a disability across developed and developing countries and what is known about the cost-effectiveness of different approaches?

It was surprising to find that there have been virtually no studies in the academic literature that have looked at the impact of an intervention to improve accessibility of children with disabilities to formal school settings in low- and middle-income countries in the past decade. **The majority of studies carried out around the education of children with disabilities in LMICs in the academic literature are not evaluations of effectiveness.** They consist of various commentaries, discussion papers, opinion pieces or reviews that differ in nature. In order to map this evidence the research questions should not be framed in terms of evaluation of impact, but in terms of implications or effectiveness of policies, for instance.

More interesting is the fact that studies from HICs do not focus on issues of accessibility but in terms of providing *accommodation*, thus reflecting the language of rights – to make 'reasonable accommodation' (or adjustment). It seems that the question of 'access' or the 'right to education', which is very prominent in a number of LMICs, does not take centre stage in the research in HICs. This is perhaps because this right is already recognised and legislated for, but underscores that the nature of education for children with disabilities in HICs and LMICs is profoundly different in the way it is regarded, implemented and assessed.

3.4.3 Intention of studies: impact evaluation or reporting of outcomes
At the beginning of our review, we defined a procedure that studies were required to follow in order to be considered 'impact evaluations'. This was in line with the primary requirement of being able to 'establish cause and effect between programs and both intended/unintended outcomes' (International Initiative for Impact Evaluation 2010). This seemed to be one of the challenges of this review: for the majority of studies that were not included, the intervention was not clearly defined, and as a result, the outcomes observed could not be imputed to a given initiative. In academic research, the intentionality of the study is often not to drive policy but to advance research. As a result, an overwhelming majority of the studies tested cognitive, metacognitive and learning theories for children with autism or intellectual disabilities. **There is a need to identify sources that have the expressed intention of either assessing impact or informing policy in order to better identify relevant documents.**

More broadly, the idea of 'the theory of change' that can drive a given intervention or initiative was not found during out search. As a result, all the studies that we identified on the education of children with disabilities looked at specific outcomes or simple outputs. In our keywording tool, we included a category of 'additional secondary outcomes' (see Appendix 5), which referred to effects that were not necessarily focused on the achievements of the child, but secondary outcomes that could be accounted for in the analysis of outcomes. However, none of the studies included presented any such analysis of theory of change. Moreover, there were also questions designed to identify any discussions and analyses pertaining to the social changes that an intervention could entail at a larger scale or over a longer period. Here again, we did not find any studies that linked the achievement of a given intervention to the broader challenges of reducing poverty or promoting equality and diversity. Nor did any studies included present any cross-cutting analyses that linked educational initiatives to impact in terms of health, employment or changes in quality of life. There were a number of studies that looked at provision of healthcare within educational settings or vice versa, but these constituted a different body of evidence, as they referred to medical issues or providing support and were therefore excluded.

3.5 Main challenges of the review

We debated included studies that drew on data collected or analysed before 2000 (for example, reviews which included studies from before 2000). However, as this was a mapping study, we decided that this would complicate the analysis of the literature, as it is often impossible to tell the age of data used by studies without in-depth quality appraisal.

One of the biggest challenges of the review was the issue of how disability is defined by individuals and groups – including the members of this review group. As a result of discussions around this, there was an initial delay before consensus was reached, which inevitably reduced the time available for the review. Although this was a long process, it was essential in order to design the initial keyword search that would be carried out. Given this, and the scope of the review question, it was decided to present an initial mapping of the published literature to identify gaps and draw some initial conclusions as to the policy implications of this. As noted above, due to the large volume and variety of grey literature the decision was made not to include this in the review. It is, however, worth noting that much of the grey literature would not meet the inclusion criteria, for example, programme reports, country or case studies, overviews or policy briefs.

The second challenge of the review was also to find an agreement on the categories of disability that needed to be included in the search. There was strong debate about this, and decisions were made to exclude various types of chronic illnesses that might lead to disabling conditions but that were different in view of the policy implications as well as issues related to stigma and social representations.

A third challenge was the issue of the lack of comparability between approaches in different countries and contexts; again this is reflected in the literature included, but also calls into question the applicability or transferability of results across the different countries and contexts. Put differently, what works in one context may not work in another, as it is clear that a range of factors enhance accessibility for children with disabilities in school settings, including teacher's skills and experience, resources and individual education plans, as well as factors outside the school setting. Given this, it is worth undertaking further research to follow up some of the themes that were excluded, as they also give an indication of potential avenues for further research. Such material includes: the role of teachers (de Boer et al. 2011); social inclusion – meaning how non-disabled children and adults view and discrimination against disabled children; and the effectiveness of peer support.

3.5.1 Next steps: scrutinising the 'grey' literature
It is evident that the body of evidence that results from electronic database searches and that is generated through a scrutiny of the grey literature (GL) is very different. The structure, organisation and quality of the documents are also different. As a result, the type of search will need to use different methods and protocols adapted to the type of sources that need to be screened. Although the tools and methods that are used for a systematic review on electronic databases of academic sources have been elaborated by various centres, there are as yet no unifying guidelines for evaluation of grey literature. Analysis of the 'grey' - or non–academic - literature, entails a detailed road map, but also specifying the conditions that will ensure participation as well as flexibility. It is clear that the success of such an endeavour relies on setting up a strong participatory process that engages various users of the review from the very onset, not just to provide feedback but to redirect the process as and when required, and to guarantee insights from various perspectives to ensure the relevance of the review towards

What are the impacts of approaches to increase the accessibility to education for people with a disability across developed and developing countries and what is known about the cost-effectiveness of different approaches?

the larger objective of rethinking educational policies for children with disabilities. However, in view of the variety of sources and formats, reviewing this body of evidence poses considerable challenges that need to be tackled:

- the sheer volume of the body of evidence requires a careful defining of the review questions and limiting the sources, as well as the types of documents that will be included in the review;
- GL quality is not controlled systematically through a peer review process. As a result, there is a need to devise a methodology and tools that will allow for assessment of the quality of the evidence retrieved;
- this type of review can only be carried out in a participatory manner, where the findings of each phase need to be discussed in order to determine how to proceed with the successive phases.

Based on this, in order to appraise the grey literature identified through this review, the following parameters need to be defined:

- The GL identified produced few evaluations or research-based materials, and as such was not include in the review. Most was produced by charities or special interest groups – however, there are moves by organisations to improve evaluations of their activities. These require specific quality appraisal tools in order to determine their scientific validity and policy relevance.
- It would be more efficient to focus on a limited number of websites in order to screen documents from (a section of) the grey literature.

It would also be essential to establish inclusion criteria on what types of evidence would be of interest. For instance the reviewer and policy makers would need to agree to on which types of documents to focus on. For example, Table 3.2 adapted from Giustini and Thompson (2012: 3-4) gives an indication of the range of scope of grey literature.

Table 3.2: The range of grey literature

Traditional grey literature	Newer types of grey literature
Research reports/working papers/white, technical papers	E-prints of documents
Conference reports and abstracts	Electronic networked communication
Annual reports	Digital libraries
Project documents (proposals, assessments, evaluations)	Social media (blogs, wikis, tweets, podcasts (audio/video)
Theses and dissertations	Repositories
Census, economic and other 'grey' data sources	Spatial data (Google Earth)
Informal communications	
Statistics and other data sources	
Databases of on going research	

3.6 Recommendations for follow-up

The recommendations made as a result of this mapping can be divided into three main groups:

1. identification of evidence;

2. the need for a quality appraisal framework;

3. policy implications, using the following policy documents as an analytical lens for reflection and discussion:

   - *Independent review of aid effectiveness* (Hollway et al. 2011)
   - *An effective aid program for Australia: making a real difference — delivering real results* (Australian Government 2012)

3.6.1 Identification of evidence
During the screening process, it was clear that there was a need to focus the review question in order to appraise the quality of the body of evidence. This can be done in a number of ways:

- On the corpus of evidence identified by the review, various avenues for future research can be pursued. However the most obvious is to define a geographical focus and screen the body of evidence to identify the documents that relate to the selected countries.

- To build on the findings of the present mapping exercise, various ways of narrowing the search can be envisaged:

  - **Geographical focus**: Most the research was in the US. High quality evaluations of intervention research in LMICs are urgently needed.

  - **Focus on age groups**: Defining the specific age range for the review would result in more targeted evidence.

  - **Focus on specific aspects of the education process**: A range of areas was identified within the review: teacher training, vocational education in informal settings, curriculum development and teaching techniques.

  - **Defining access**: Terms such as accessibility, availability and accommodation are understood differently in different contexts. Access as traditionally understood did not seem to feature significantly in the literature (e.g. enrolment rates). However, it is likely that such debate would have been more prominent before the 2000-2012 timeframe.

3.6.2 The need for a quality appraisal framework
Once the scope of the follow-up of the review has been narrowed it will then be crucial to define a quality appraisal framework that can allow for a systematic scrutinising of the body of evidence that will allow for an identification of work that can be of relevance for scaling up and (re)designing of policies. The following tools can be of use to elaborate this framework:

- The Maryland Scientific Methods Scale can be used in order to assess external validity: 'External validity refers to the generalizability of causal relationships across different persons, places, times, and operational definitions of interventions and outcomes (e.g., from a demonstration project to the routine large-scale application of an intervention)'. (Farrington 2003: 49)

- However, we also need to look beyond the experimental design and provide sensitivity towards studies that have relevance for policy designing in order to avoid the 'anti-social bias' and the risk of 'throwing the baby out with the bath water'. In the quality appraisal, the SMS (Scientific Methods Scale)-based criteria to 'classify interventions into categories of effectiveness' as suggested by Leonintien and van der Knaap (2008), can be used. In order to do we can use

What are the impacts of approaches to increase the accessibility to education for people with a disability across developed and developing countries and what is known about the cost-effectiveness of different approaches?

the criteria that have been defined by the Chronic Poverty Research Centre (Table 3.3).

Table 3.3: Criteria for impact assessment

Focus of impact assessment	Purpose
Efficiency	Relates inputs to outputs Could the same results be achieved more cheaply? Would a few more resources achieve much better results?
Effectiveness	To what extent has the intervention achieved its objectives?
Consistency	Were intervention methods/approaches consistent with the outcomes achieved? E.g. using non-participatory project design and implementation would not be consistent with empowerment objectives
Impact	To what extent has the intervention changed lives of the intended beneficiaries?

Source: Chronic Poverty Research Centre (n.d.: 90)

3.6.3 Policy implications

Although there was extensive discussion on the scope of the review, in order to move forward, there is now a need to focus on the purpose of the knowledge identified and what it needs to be used for. Our findings have shown that in the academic database searches, there is limited evidence that looks at the impact of educational approaches in terms of social change, and even less evidence that focuses on LMICs. When it comes to cost-effectiveness studies, there is little evidence beyond simple estimations of the cost of education for parents of children with disabilities. Moreover, the vast majority of interventions that are studied are based on the cognitive learning skills of children with intellectual difficulties.[15]

There is a growing debate regarding the way disability in general is comprehended and studied (World Health Organization and World Bank 2011). In the field of education, it is becoming clear that the typology or causality of disability may not be the best way to identify ways forward, especially in countries where resources are limited. There has already been considerable focus on aspects of physical access (in terms of ramps into schools and classes, for instance) and to a lesser extent on sensory disabilities. Interventions need to be tailored to the context they are delivered in, and the specific challenges faced by children with disabilities living in low- and middle-income countries. There is a need for:

- acknowledgement that given the evidence and variety of approaches and interventions, it is difficult to state that there is one approach that works for all children with disabilities – again, this would require more considered analysis of specific approaches, as well as appraisal of the vast amount of grey

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[15] However, work done by the OECD demonstrates that the costs of special provisions for students with disabilities is at least twice that for non-disabled students (OECD 1999

literature available, which, given the nature of many of the interventions in low- and middle-income countries, may offer more context specific guidance and outcomes;

- improved research, evidence and analyses that take into account the complexity of the disabling situations in terms of the severity and complexity of a given impairment;

- better understanding of the impact of defined interventions (for example, whether they are a learning technique or an international policy).

Finally, it is essential to determine an impact evaluation framework in order to ensure that research makes a clear distinction between outcomes and processes that can lead to social change in the long term. Merely making a classroom physically accessible does not necessarily translate into equity and inclusion in the classroom for a child with disabilities.

4. Conclusions

As we have highlighted throughout this report, on the basis of the results of this review, we would be reluctant to draw any firm conclusions about the most effective approaches (in terms of impact or indeed cost) to increasing the accessibility to education for children with disabilities across developed or developing countries. This is in part because of a lack of comparability due to context, where 'one size' really does not fit all; but also, it is to do with a more general debate about education effectiveness. In the late 1990s, the debate around measuring school effectiveness, in particular in lower-income and developing countries began, with researchers questioning the extent to which it was the education system or the child's socio-economic circumstances that had the greatest impact on their education outcomes, and the extent to which this differed between higher- and lower-income countries (see for example Riddell 1989; Baker et al. 2002). This debate expanded to examining the quality and effectiveness of education in developing countries more generally (see Riddell 2008). Abby Riddell has been at the forefront of much of this research, and in a recent review undertaken for the German Technical Corporation (GiZ), summed up some of the on-going challenges of doing such evaluations, particularly in developing countries:

> The purpose of the study is clearer than the research results. These have been ambiguous for a variety of reasons, and these reasons need to be understood before reviewing the results themselves. They include the following: the use of different models of educational effectiveness and quality which underpin the research questions asked; the analytic and statistical methodologies employed; and the context, practice and funding of educational research in developing countries. (Riddell 2008: 9).

Riddell's review highlights a number of other methodological and ideological challenges to undertaking such work; therefore, it is perhaps unsurprising that this review should also arrive at similar conclusions. However, the paucity of data that evaluate the effectiveness of various approaches in different contexts reflects the need for more research in this area, as to date, models are replicated and approaches implemented without a full understanding of the impact or effectiveness of these approaches for children with disabilities in the various contexts in which they receive education. However, as she notes, ensuring inclusion of children with disabilities requires more than just the basic interventions (teaching and learning materials etc.) and approaches that many donors have funded in developing countries to date, and requires more joined up, cross-sectoral thinking (Riddell 2012: 14).

Finally, in order to grasp the 'process' or the dynamic chain that leads to social impact and positive change, we need to scrutinise the evidence to identify general models of explanation. This in turn requires a clear definition of the theoretical frameworks that form the analytical lens through which the body of evidence can be organised and understood. This review constitutes the first step towards understanding how the success of education for children with disabilities is being assessed. However, it goes on reiterate the need for methodologies and tools that allow for appraisal of a body of evidence that is extremely diverse, while at the same time calling on policy makers to think about improving mechanisms to strengthen local capacities to both record evidence and make it usable.

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Appendices

Appendix 1.1: Authorship of this report

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Appendix 1.2: Inclusion and exclusion criteria

Screening on title and abstract

☐   Exclude on year
exclude all articles prior to 2000

☐   Exclude on age
include only articles about children aged between 4 and 18 years

☐   Exclude on research design
exclude reports with no methodology; commentaries; letters

☐   Exclude wrong population
chronic illness and disease; injury; communicable diseases; obesity and eating disorders; gifted children; drug and alcohol problems; common mental health conditions

☐   Exclude on outcomes
exclude if no education outcomes such as access, attainment, transition or retention; views of children and families; cost-effectiveness

☐   Exclude on type of education
exclude informal; non-school education programmes

☐   Exclude on type of intervention
no intervention identified or non-education-related intervention

☐   Include

Appendix 2: Keyword search for electronic databases

We will use a modified version of the Medline search presented below, adjusted for database indexing and thesauruses.

Search History (22 searches) (Click to close)

# ▲	Searches	Results	Search Type
1	adolescent/ or child/ or child, preschool/	2164642	Advanced
2	child*.mp.	1654382	Advanced
3	teenage*.mp.	12941	Advanced
4	1 or 2 or 3	2379066	Advanced
5	disabl*.ti,ab.	28640	Advanced
6	Disability Evaluation/	29506	Advanced
7	Mental Competency/	6158	Advanced
8	cognition disorders/ or mental disorders diagnosed in childhood/	40655	Advanced
9	disabled children/ or hearing impaired persons/ or mentally disabled persons/ or mentally ill persons/ or visually impaired persons/	10711	Advanced
10	handicap.mp.	6802	Advanced
11	Mental Retardation/	43855	Advanced
12	Child Behavior Disorders/cl, co, di, ec, ed, ep, eh, pc, px, rh, th [Classification, Complications, Diagnosis, Economics, Education, Epidemiology, Ethnology, Prevention & Control, Psychology, Rehabilitation, Therapy]	12745	Advanced
13	5 or 6 or 7 or 8 or 9 or 10 or 11 or 12	168668	Advanced
14	'Mainstreaming (Education)'/ or Education, Special/	8341	Advanced
15	'inclusive education'.mp.	42	Advanced
16	'special education needs'.mp.	26	Advanced
17	'integrated education'.mp.	57	Advanced
18	education/ or 'mainstreaming (education)'/ or education, nonprofessional/ or education, special/ or schools/	40380	Advanced
19	14 or 15 or 16 or 17 or 18	40443	Advanced

20	13 and 19	3189	Advanced
21	4 and 20	2702	Advanced
22	limit 21 to (English language and yr='2000 -Current')	894	Advanced

Appendix 3: List of grey literature websites

Website	Number of hits
AusAID	84
Australian Disability and Development Consortium	4
CBM	1
DfID	0
EENET	127
Global Partnership for Disability and Development	32
Handicap International	1
Institute of Development Studies	4
Inter-Agency Network for Education in Emergencies	29
International Disability and Development Consortium	Links to source and EENET
Leonard Cheshire Disability	3
Overseas Development Institute	115
Save the Children	29
Source	529
UNESCO/International Institute for Education Planning	108
UNICEF	204
USAID	135
WHO	172
World Bank	2,323
Total	3,900

Appendix 4: EPPI-Centre keyword sheet including review-specific keywords

NTIFICATION				A.4.	Coded by		A.4.1.	Parul Bakhshi	
Source	A.1.1.	ERIC					A.4.2.	María Kett	
	A.1.2.	Cochrane					A.4.3.		
	A.1.3.	Campbell collaboration					A.4.4.		
	A.1.4.	Medline					A.4.5.		
	A.1.5.	Psychinfo		**B. FOCUS**					
	A.1.6.	Pubmed		B.1.	Age group		B.1.1.	4-10 years	
Year of Publication	A.2.1.	2000					B.1.2.	11 to 14 years	
	A.2.2.	2001					B.1.3.	15 to 18 years	
	A.2.3.	2002					B.1.4.	not specified	
	A.2.4.	2003		B.2.	Gender		B.2.1.	female	
	A.2.5.	2004					B.2.2.	male	
	A.2.6.	2005					B.2.3.	both	
	A.2.7.	2006					B.2.4.	not specified	
	A.2.8.	2007		B.3.	Type of Disability		B.3.1.	autism	
	A.2.9.	2008					B.3.2.	physical disability	
	A.2.10.	2009					B.3.3.	sensory disability	
	A.2.11.	2010					B.3.4.	learning dicability	
	A.2.12	2011					B.3.5.	multiple disabilities	
	A.2.13	2012					B.3.6.	not specified	
Country of focus	A.3.1.	USA		B.4.	Type of intervetion		B.4.1.	Public Policy	
	A.3.2.	UK					B.4.2.	Educational interventaion	
	A.3.3.	Australia					B.4.3.	Social intervention	
	A.3.4.	New Zealand					B.4.4.	NGOS programme	
	A.3.5.	Europe Continent		B.5.	Type of School setting		B.5.1.	Public school	
	A.3.6.	Scandinavia					B.5.2.	Private school	
	A.3.7.	South America					B.5.3.	Other	
	A.3.8.	Africa							
	A.3.9.	South Asia							
	A.3.10	South East Asia							
	A.3.11	Middle East							
	A.3.12	Worldwide							

What are the impacts of approaches to increase the accessibility to education for people with a disability across developed and developing countries and what is known about the cost-effectiveness of different approaches?

C. ANALYSIS

C.1.	Type of study	C.1.1.	Research/data
	For research data go to C.2.	C.1.2.	Review/synthesis (e.g. of research literature; MI data etc.)
		C.1.3.	Policy (statement of policy from a central or local government body)
		C.1.4.	Practice description (descriptive account (not research))
		C.1.5.	Theory
		C.1.6.	Other
C.2.	Methods Used	C.2.1.	Survey
		C.2.2.	Interviews
		C.2.3.	Observation
		C.2.4.	Secondary data analysis
		C.2.5.	Literature review/ evidence synthesis
		C.2.6.	Not specified
		C.2.7.	other
C.3.	Type of outcome	C.3.1.	Quantitative
		C.3.2.	Qualitative
		C.3.3.	Mixed
		C.3.4.	Other

C.4. Specific primary educational outcomes/Impact measures:

	C.4.1.	Enrollment rate
	C.4.2.	Rentention/completion rates
	C.4.3.	Interuption/Drop-out rates
	C.4.4.	Literacy rates
	C.4.5.	Other

C.5. Additional Secondary outcome (process indicators)

	C.5.1.	Teacher training
	C.5.2.	Curriculum development/review
	C.5.3.	Awareness/sensitisation
	C.5.4.	Accessibility of the learning environment (Toilets, water, teaching materials)

C.6. Impact of intervention on other cross cutting issues

Relevant terms include poverty, deprivation, low socioeconomic status	C.6.1.	Child poverty
Use if issues of equality and diversity are discussed. (e.g., race, ethnicity, religious, cultural), disadvantaged groups (e.g., low socioeconomic status), and other vulnerable or at-risk people.	C.6.2.	Equality and diversity
	C.6.3.	Employment
	C.6.4.	Health
	C.6.5.	Community beliefs and Norms

C.7.	Cost effectiveness			
	The item does include cost-effectiveness, cost benefit analysis, or other economic evaluation of the service/programme/intervention.	C.7.1.	Yes (definite yes)	
	The item does NOT include cost-effectiveness, cost benefit analysis, or other economic evaluation of the service/programme/intervention.	C.7.2.	No (definite no or unlikely)	
		C.7.3.	Not specified	
C.8.	Type of approach	C.8.1.	Special Needs Education	
		C.8.2.	Inclusive Education	
		C.8.3.	Intergrated Education	
		C.8.4.	Mixed approaches	
		C.8.5.	Not Specified	
		C.8.6.	Other	
Additional Comments				

Appendix 5: Detailed information of the keywording analysis[16]

Author	Type of disability	Population and setting	Data and analysis
Aceti (2010)	Deaf/hearing impairments Intellectual/learning disabilities [info] *severe language delays linked to hearing problems*	Age group: 11 to 14 years Type of intervention: intervention with cognitive techniques Type of school setting: not specified Type of approach: inclusive education/mainstream schools	Type of data provided: quantitative Specific primary educational outcomes/Impact measures: • literacy rates [Info] *meaning of words* • cognitive/metacognitive skills [Info] *decoding of words* Additional secondary outcome: none
Agnew (2004)	Deaf/hearing impairments	Age group: 4-10 years Type of intervention: intervention with cognitive techniques Type of school setting: private school Type of approach: special needs education	Type of data provided: mixed Specific primary educational outcomes/Impact measures: cognitive/metacognitive skills Additional secondary outcome: none
Agran (2001)	Visual impairments Intellectual/learning disabilities Multiple disabilities	Age group: 15 to 18 years Type of intervention: general programme intervention [Info] *self-regulated strategies* Type of school setting: not specified Type of approach: inclusive education/mainstream schools	Type of data provided: quantitative Specific primary educational outcomes/Impact measures: other) [Info] *goal attainment scales; performance scores* Additional secondary outcome: none
Al-Hilawani (2000)	Deaf/hearing impairments	Age group: 4-10 years Type of intervention: intervention with cognitive	Type of data provided: quantitative Specific primary educational outcomes/Impact measures:

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[16] Excluding reviews

Author	Type of disability	Population and setting	Data and analysis
		techniques Type of school setting: not specified Type of approach: not specified	numeracy/mathematical skills Additional secondary outcome: none
Alberto (2010)	Intellectual/learning disabilities [Info] *moderate intellectual disabilities*	Age group: 11 to 14 years Type of intervention: intervention with cognitive techniques Type of school setting: not specified Type of approach: not specified	Type of data provided: quantitative Specific primary educational outcomes/Impact measures: cognitive/metacognitive skills Additional secondary outcome: none
Allor (2001)	Intellectual/learning disabilities [Info] *reading disabilities*	Age group: 4-10 years Type of intervention: intervention with cognitive techniques Type of school setting: not specified Type of approach: inclusive education/mainstream schools	Type of data provided: quantitative Specific primary educational outcomes/Impact measures • literacy rates [Info] *reading skills* • cognitive/metacognitive skills [Info] *phonological awareness* Additional secondary outcome: none
Andrews (2010)	Deaf/hearing impairments	Age group: not specified Type of intervention: intervention with cognitive techniques Type of school setting: both Type of approach: mixed approaches	Type of data provided: quantitative Specific primary educational outcomes/Impact measures: cognitive/metacognitive skills Additional secondary outcome: teacher training
Asberg (2010)	Autism	Age group: 11 to 14 years Type of intervention: intervention with cognitive techniques	Type of data provided: mixed [Info] *students' perceptions were noted* Specific primary educational

What are the impacts of approaches to increase the accessibility to education for people with a disability across developed and developing countries and what is known about the cost-effectiveness of different approaches?

Author	Type of disability	Population and setting	Data and analysis
		Type of school setting: public school Type of approach: integrated education [Info] *special school units at a school*	outcomes/Impact measures • literacy rates [Info] *word decoding skills* • cognitive/metacognitive skills Additional secondary outcome: none
Bennetts (2002)	Intellectual/learning disabilities [Info] *Down Syndrome* Multiple disabilities [Info] *the children also had fluctuated hearing*	Age group: 4-10 years Type of intervention: intervention with cognitive techniques [Info] *amplification of sound* Type of school setting: not specified [Info] *Volunteers from Down Syndrome Association* Type of approach: special needs education	Type of data provided: quantitative Specific primary educational outcomes/Impact measures: cognitive/metacognitive skills [Info] *speech perception* Additional secondary outcome: none
Bentum (2003)	Intellectual/learning disabilities [Info] *learning/reading disabilities*	Age group: 4-10 years Type of intervention: general programme intervention [Info] *resource rooms in SE* Type of school setting: public school Type of approach: special needs education	Type of data provided: quantitative Specific primary educational outcomes/Impact measures: literacy rates [Info] *reading comprehension/ word recognition / spelling* Additional secondary outcome: none
Berends (2005)	Intellectual/learning disabilities [Info] *reading delays*	Age group: 4-10 years Type of intervention: intervention with cognitive techniques [Info] *lateral and central presentation of words* Type of school setting: public school Type of approach: special needs education	Type of data provided: quantitative Specific primary educational outcomes/Impact measures: literacy rates [Info] *reading skills* Additional secondary outcome: none
Bowen (2008)	Deaf/hearing impairments	Age group: 4-10 years Type of intervention: general programme intervention [Info] *Co-enrolled and regular*	Type of data provided: mixed Specific primary educational outcomes/Impact measures:

Author	Type of disability	Population and setting	Data and analysis
		classrooms Type of school setting: public school Type of approach: inclusive education/mainstream schools	• change in attitudes/beliefs • impact on stigma/discrimination Additional secondary outcome: none
Bourke-Taylor (2007)	Physical disability [Info] *cerebral palsy*	Age group: not specified Type of intervention: other, specify [Info] *conductive education* Type of school setting: not specified Type of approach: other [Info] *conductive education*	Type of data provided: qualitative Specific primary educational outcomes/Impact measures: self-perception/confidence Impact of intervention on other cross cutting issues: health
Buckley (2006)	Autism Intellectual/learning disabilities [Info] *severe/moderate learning disabilities*	Age group: 11 to 14 years; 15 to 18 years Type of intervention: general programme intervention [Info] *mainstream/inclusive education* Type of school setting: not specified Type of approach: special needs education; inclusive education/mainstream schools	Type of data provided: mixed Specific primary educational outcomes/Impact measures: • literacy rates [Info] *literacy activities were also assessed (reading and writing)* • self-perception/ confidence [Info] *Activities of daily living skills* • other [Info] *Communication and socialization skills* Additional secondary outcome: none

What are the impacts of approaches to increase the accessibility to education for people with a disability across developed and developing countries and what is known about the cost-effectiveness of different approaches?

Author	Type of disability	Population and setting	Data and analysis
Calhoon (2010)	Intellectual/learning disabilities [Info] *reading disabilities*	Age group: 11 to 14 years Type of intervention: intervention with cognitive techniques [Info] *phonological decoding, spelling comprehension* Type of school setting: not specified Type of approach: inclusive education/mainstream schools	Type of data provided: quantitative Specific primary educational outcomes/Impact measures: • literacy rates [Info] *Reading skills* • cognitive/metacognitive skills Additional secondary outcome: none
Cawthon (2004)	Deaf/hearing impairments	Age group: not specified Type of intervention: public policy [Info] *No Child Left Behind (NCLB)* Type of school setting: public school Type of approach: inclusive education/mainstream schools	Type of data provided: quantitative Specific primary educational outcomes/Impact measures: • literacy rates [Info] *reading proficiency* • cognitive/metacognitive skills • numeracy/mathematical skills Additional secondary outcome: none
Chan (2008)	Autism	Age group: 4-10 years Type of intervention: intervention with cognitive techniques [Info] *reading package of social stories* Type of school setting: not specified Type of approach: inclusive education/mainstream schools	Type of data provided: quantitative Specific primary educational outcomes/Impact measures: • literacy rates [Info] *reading of the story* • other [Info] *other behavioural changes (hand raising and less asocial behaviour)* Additional secondary outcome: none

Author	Type of disability	Population and setting	Data and analysis
Cole (2004)	Intellectual/learning disabilities [Info] *Learning/ Mental/ Emotional* Mental illness [Info] *term used: mental handicap*	Age group: 4-10 years Type of intervention: general programme intervention [Info] *SEN versus mainstream* Type of school setting: public school Type of intervention: not specified	Type of data provided: quantitative Specific primary educational outcomes/Impact measures: • literacy rates • numeracy/mathematical skills Additional secondary outcome: teacher training [Info] *This is presented in the discussion and implications for policy*
Cooney (2006)	Intellectual/learning disabilities [Info] *mild to moderate ID*	Age group: 15 to 18 years Type of intervention: general programme intervention [Info] *mainstream education versus SEN* Type of school setting: public school Type of approach: special needs education: inclusive education/mainstream schools	Type of data provided: quantitative Specific primary educational outcomes/Impact measures: • change in attitudes/beliefs [Info] *stigma and social exclusion measures* • impact on stigma/discrimination Additional secondary outcome: none
Copeland (2002)	Intellectual/learning disabilities [Info] *Mental retardation*	Age group: 11 to 14 years; 15 to 18 years Type of intervention: general programme intervention [Info] *intervention package designed* Type of school setting: public school Type of approach: integrated education	Type of data provided: quantitative Specific primary educational outcomes/Impact measures: • self-perception/confidence • other [Info] *completion of assigned tasks* Additional secondary outcome: none

What are the impacts of approaches to increase the accessibility to education for people with a disability across developed and developing countries and what is known about the cost-effectiveness of different approaches?

Author	Type of disability	Population and setting	Data and analysis
Damen (2006)	Deaf/hearing impairments	Age group: 4-10 years; 11 to 14 years Type of intervention: intervention with cognitive techniques [Info] *cochlear implants* Type of school setting: not specified Type of approach: inclusive education/mainstream schools	Type of data provided: quantitative Specific primary educational outcomes/Impact measures: • self-perception/confidence • other [Info] *a series of classroom behaviour linked to participation* Additional secondary outcome: none
Delgado (2006)	Intellectual/learning disabilities	Age group: 4-10 years Type of intervention: general programme intervention [Info] *SEN vs mainstream education* Type of school setting: public school Type of approach: special needs education; inclusive education/mainstream schools	Type of data provided: quantitative Specific primary educational outcomes/Impact measures: retention/ completion rates Additional secondary outcome: none
Didden (2006)	Autism [Info] *2 children* Intellectual/learning disabilities	Age group: 11 to 14 years [Info] *Ages were from 10-15, mean 12.8* Type of intervention: intervention with cognitive techniques Type of school setting: not specified Type of approach: special needs education	Type of data provided: quantitative Specific primary educational outcomes/Impact measures: cognitive/ metacognitive skills Additional secondary outcome: none

Author	Type of disability	Population and setting	Data and analysis
Easterbrooks (2010)	Deaf/hearing impairments	Age group: 4-10 years [Info] 3-6 *years* Type of intervention: general programme intervention Type of school setting: both Type of approach: inclusive education/mainstream schools [Info] *not specified but by deduction from data*	Type of data provided: quantitative Specific primary educational outcomes/Impact measures: literacy rates Additional secondary outcome: teacher training
Falk (2001)	Intellectual/learning disabilities [Info] *Emotional and behavioural disorders; ADHD that leads to language/speech problems*	Age group: 4-10 years Type of intervention: intervention focused on behaviour [Info] *peer tutoring for behavioural change* Type of school setting: not specified Type of approach: inclusive education/mainstream schools	Type of data provided: quantitative Specific primary educational outcomes/Impact measures: • literacy rates • cognitive/metacognitive skills Additional secondary outcome: none
Foreman (2007)	Multiple disabilities [Info] *multiple and severe disability*	Age group: not specified Type of intervention: general programme intervention [Info] *teacher training for improving communication* Type of school setting: not specified Type of approach: inclusive education/mainstream schools	Type of data provided: not specified Specific primary educational outcomes/Impact measures: other [Info] *communication skills and academic achievements in various subjects* Additional secondary outcome: none

What are the impacts of approaches to increase the accessibility to education for people with a disability across developed and developing countries and what is known about the cost-effectiveness of different approaches?

Author	Type of disability	Population and setting	Data and analysis
Fujisawa (2011)	Physical disability [Info] *One case of cerebral palsy* Intellectual/learning disabilities [Info] *Intellectual Disability/Down Syndrome and cerebral palsy (only one case)*	Age group: 11 to 14 years; 15 to 18 years Type of intervention: intervention with cognitive techniques [Info] *Focus on memory* Type of school setting: not specified Type of approach: special needs education	Type of data provided: quantitative Specific primary educational outcomes/Impact measures: cognitive/metacognitive skills [Info] *memory* Additional secondary outcome: none
Fung (2005)	Deaf/hearing impairments	Age group: 4-10 years Type of intervention: other [Info] *Dialogic reading program: reading technique* Type of school setting: not specified Type of approach: special needs education: inclusive education/mainstream schools	Type of data provided: quantitative Specific primary educational outcomes/Impact measures: cognitive/metacognitive skills Additional secondary outcome: none
Ganz (2009)	Autism	Age group: 4-10 years [Info] *10 years old* Type of intervention: other [Info] *teaching technique for language improvement* Type of school setting: public school Type of approach: special needs education	Type of data provided: quantitative Specific primary educational outcomes/Impact measures: cognitive/metacognitive skills Additional secondary outcome: none
Germain (2002)	Intellectual/learning disabilities [Info] *Down Syndrome*	Age group: 4-10 years [Info] *4 year old boy* Type of intervention: • intervention focused on behaviour • other [Info] *Use of a learning support assistant* Type of school setting: not specified Type of approach: inclusive education/mainstream schools	Type of data provided: quantitative Specific primary educational outcomes/Impact measures: • numeracy/mathematical skills • other [Info] *behavioural outcomes* Additional secondary outcome: none

Author	Type of disability	Population and setting	Data and analysis
Graham (2007)	Intellectual/learning disabilities	Age group: 11 to 14 years Type of intervention: other [Info] *Basic Learning intervention programme* Type of school setting: not specified Type of approach: inclusive education/mainstream schools	Type of data provided: quantitative Specific primary educational outcomes/Impact measures: • literacy rates • numeracy/mathematical skills Additional secondary outcome: none
Hatamizadeh (2008)	Deaf/hearing impairments	Age group: 4-10 years; 11 to 14 years Type of intervention: general programme intervention [Info] *Test within an inclusive education school* Type of school setting: not specified Type of approach: inclusive education/mainstream schools	Type of data provided: mixed Specific primary educational outcomes/Impact measures: self-perception/confidence [Info] *The test consisted of self-perception of ability to achieve learning outcomes as well as other activities* Additional secondary outcome: none
Hatcher (2000)	Dyslexia Intellectual/learning disabilities	Age group: 4-10 years; 11 to 14 years; 15 to 18 years Type of intervention: • intervention with cognitive techniques • other [Info] *effect of teacher referral* Type of school setting: not specified Type of approach: inclusive education/mainstream schools	Type of data provided: quantitative Specific primary educational outcomes/Impact measures • literacy rates • cognitive/metacognitive skills Additional secondary outcome: none

What are the impacts of approaches to increase the accessibility to education for people with a disability across developed and developing countries and what is known about the cost-effectiveness of different approaches?

Author	Type of disability	Population and setting	Data and analysis
Hay (2007)	Intellectual/learning disabilities [Info] *this study employs the term 'learning delays'*	Age group: 4-10 years Type of intervention: other [Info] *language development strategies* Type of school setting: not specified Type of approach: inclusive education/mainstream schools	Type of data provided: quantitative Specific primary educational outcomes/Impact measures: • literacy rates • cognitive/metacognitive skills Additional secondary outcome: none
Hemmingson (2002)	Physical disability	Age group: 11 to 14 years; 15 to 18 years Type of intervention: general programme intervention [Info] *identification of barriers in general education* Type of school setting: public school Type of approach: inclusive education/mainstream schools	Type of data provided: quantitative Specific primary educational outcomes/Impact measures: • literacy rates • numeracy/mathematical skills Additional secondary outcome: accessibility of the learning environment (toilets, water, teaching materials)
Huck (2010)	Intellectual/learning disabilities [Info] *mild to moderate*	Age group: 4-10 years Type of intervention: general programme intervention [Info] *assessment of impact of an inclusive education programme* Type of school setting: not specified Type of approach: inclusive education/mainstream schools	Type of data provided: quantitative Specific primary educational outcomes/Impact measures: • literacy rates • numeracy/mathematical skills • self-perception/confidence Additional secondary outcome: none

Author	Type of disability	Population and setting	Data and analysis
Jenks (2007)	Physical disability [Info] *Cerebral palsy*	Age group: 4-10 years Type of intervention: general programme intervention [Info] *comparing mainstream vs special education* Type of school setting: not specified Type of approach: special needs education; inclusive education/mainstream schools	Type of data provided: quantitative Specific primary educational outcomes/Impact measures: numeracy/ mathematical skills Additional secondary outcome: none
Jepsen (2002)	Autism Intellectual/learning disabilities [Info] *developmental delays, traumatic and acquired neurobiological deficits* Multiple disabilities	Age group: 11 to 14 years; 15 to 18 years [Info] *14 -16 years* Type of intervention: intervention with cognitive techniques [Info] *Mediated Teaching model* Type of school setting: private school Type of approach: special needs education	Type of data provided: quantitative Specific primary educational outcomes/Impact measures: • literacy rates [Info] *reading skills* • cognitive/metacognitive skills • numeracy/mathematical skills • self-perception/confidence [Info] *self-direction* • change in attitudes/beliefs [Info] *responsibility/socialisation* Additional secondary outcome: none

What are the impacts of approaches to increase the accessibility to education for people with a disability across developed and developing countries and what is known about the cost-effectiveness of different approaches?

Author	Type of disability	Population and setting	Data and analysis
Jimenez (2010)	Intellectual/learning disabilities	Age group: 4-10 years Type of intervention: • intervention with cognitive techniques • other [Info] *Response to intervention for detection of children with reading disabilities* Type of school setting: not specified Type of approach: inclusive education/mainstream schools	Type of data provided: quantitative Specific primary educational outcomes/Impact measures: • literacy rates [Info] *literacy/reading skills* • cognitive/metacognitive skills [Info] *skills that lead to the reading ability* Additional secondary outcome: none
Jorgensen (2007)	Autism [Info] *only one of the 5 subjects has only autism* Multiple disabilities [Info] *5 subjects each with a combination of disabilities (autism, visual, spina bifida)*	Age group: 4-10 years Type of intervention: general programme intervention [Info] *Beyond access program that focuses on training educational teams* Type of school setting: not specified Type of approach: special needs education; inclusive education/mainstream schools	Type of data provided: mixed Specific primary educational outcomes/Impact measures: other [Info] *analysis of the ability to integrate general education classes* Additional secondary outcome: none
Kelly (2004)	Intellectual/learning disabilities [Info] *12 subjects with moderate learning disabilities* Multiple disabilities [Info] *apart from 12 all subjects had multiples disabilities (sensory, motor, autism, epilepsy etc.)*	Age group: 4-10 years; 11 to 14 years Type of intervention: general programme intervention [Info] *Comparison between SEN and mainstream education* Type of school setting: not specified Type of approach: special needs education; inclusive education/mainstream schools	Type of data provided: not specified Specific primary educational outcomes/Impact measures • self-perception/confidence • impact on stigma/discrimination Additional secondary outcome: none

Author	Type of disability	Population and setting	Data and analysis
Kelman (2004)	Deaf/hearing impairments	Age group: 4-10 years Type of intervention: other [Info] *communicative and metacommunicative strategies for teacher-student interaction* Type of school setting: public school Type of approach: inclusive education/mainstream schools	Type of data provided: qualitative Specific primary educational outcomes/Impact measures: other [Info] *Communication in BSL* Additional secondary outcome: none
Kelman (2009)	Deaf/hearing impairments	Age group: not specified Type of intervention: other [Info] *'bilingual' using sign language* Type of school setting: public school Type of approach: inclusive education/mainstream schools	Type of data provided: quantitative Specific primary educational outcomes/Impact measures: • cognitive/metacognitive skills [Info] *co-construction of meaning* • self-perception/confidence • other [Info] *other outcomes include : visual contact, time for academic content, etc.)* Additional secondary outcome: none
Kemp (2003)	Intellectual/learning disabilities	Age group: 4-10 years Type of intervention: general programme intervention [Info] *inclusive education* Type of school setting: not specified Type of approach: inclusive education/mainstream schools	Type of data provided: mixed Specific primary educational outcomes/Impact measures: change in attitudes/beliefs [Info] *beliefs of parents/principals* Additional secondary outcome: none

What are the impacts of approaches to increase the accessibility to education for people with a disability across developed and developing countries and what is known about the cost-effectiveness of different approaches?

Author	Type of disability	Population and setting	Data and analysis
Kulkarni (2006)	Dyslexia Intellectual/learning disabilities [Info] *Specific learning disabilities: dysgraphia and dyscalculia*	Age group: 15 to 18 years [Info] *Not specified but deduced from the level of examination* Type of intervention: public policy [Info] *Policy of the government of Maharashtra (state level)* Type of school setting: public school Type of approach: not specified	Type of data provided: quantitative Specific primary educational outcomes/Impact measures: retention/ completion rates [Info] *results of board examinations at the end of secondary school* Additional secondary outcome: none
Lederer (2000)	Intellectual/learning disabilities	Age group: 4-10 years Type of intervention: intervention with cognitive techniques Type of school setting: public school Type of approach: inclusive education/mainstream schools	Type of data provided: quantitative Specific primary educational outcomes/Impact measures: cognitive/metacognitive skills Additional secondary outcome: teacher training
Llewellyn (2000)	Physical disability [Info] *muscular dystrophia, spina bifida, hydrocephalus*	Age group: 11 to 14 years; 15 to 18 years Type of intervention: general programme intervention [Info] *Mainstreaming* Type of school setting: not specified Type of approach: inclusive education/mainstream schools	Type of data provided: qualitative Specific primary educational outcomes/Impact measures: • self-perception/confidence • change in attitudes/beliefs [Info] *perceptions of teachers and parents* Additional secondary outcome: none

Author	Type of disability	Population and setting	Data and analysis
Mancini (2000)	Autism Physical disability [Info] *motor impairment* Intellectual/learning disabilities [Info] *Emotional, behavioural, communication*	Age group: 4-10 years Type of intervention: general programme intervention [Info] *Mainstream and special schools* Type of school setting: public school Type of approach: special needs education; inclusive education/mainstream schools	Type of data provided: mixed Specific primary educational outcomes/Impact measures: other [Info] *participation in various activities* Additional secondary outcome: none
Mavrou (2010)	Intellectual/learning disabilities [Info] *receptive language and reading comprehension*	Age group: 4-10 years Type of intervention: general programme intervention Type of school setting: not specified Type of approach: inclusive education/mainstream schools	Type of data provided: quantitative Specific primary educational outcomes/Impact measures: • self-perception/confidence • change in attitudes/beliefs [Info] *peer acceptance* Additional secondary outcome: none
McDonald (2008)	Physical disability Visual impairments Intellectual/learning disabilities [Info] *communication, learning* Multiple disabilities [Info] *Most children had multiple disabilities but are categorised according to the primary one*	Age group: 4-10 years; 11 to 14 years; 15 to 18 years Type of intervention: other [Info] *provision of equipment through Communication Aids Project* Type of school setting: not specified Type of approach: special needs education; inclusive education/mainstream schools	Type of data provided: quantitative Specific primary educational outcomes/Impact measures: • cognitive/metacognitive skills [Info] *operational* • other [Info] *Linguistic/academic/social* Additional secondary outcome: accessibility of the learning environment (toilets, water, teaching materials)

What are the impacts of approaches to increase the accessibility to education for people with a disability across developed and developing countries and what is known about the cost-effectiveness of different approaches?

Author	Type of disability	Population and setting	Data and analysis
Melchiori (2000)	Intellectual/learning disabilities [Info] *reading difficulties*	Age group: 4-10 years Type of intervention: intervention with cognitive techniques [Info] *Reading, equivalence and recombination of units* Type of school setting: not specified Type of approach: not specified	Type of data provided: not specified Specific primary educational outcomes/Impact measures: cognitive/ metacognitive skills [Info] *word recognition* Additional secondary outcome: none
Motsch (2008)	Intellectual/learning disabilities [Info] *Specific Language Impairment*	Age group: 4-10 years Type of intervention: intervention with cognitive techniques [Info] *Context optimisation* Type of school setting: public school Type of approach: special needs education [Info] *Special language classes*	Type of data provided: quantitative Specific primary educational outcomes/Impact measures: cognitive/metacognitive skills Additional secondary outcome: none
Narayan (2005)	Autism Intellectual/learning disabilities [Info] *mental retardation*	Age group: not specified Type of intervention: not specified Type of school setting: not specified Type of approach: special needs education; inclusive education/mainstream schools; other [info] *home based*	Type of data provided: mixed Specific primary educational outcomes/Impact measures: not specified Additional secondary outcome: none
Panerai (2002)	Autism [Info] *with epilepsy for some*	Age group: 4-10 years Type of intervention: other, specify [Info] *Comparing the TEACCH method to mainstreaming* Type of school setting: not specified Type of approach: special needs education; inclusive education/mainstream schools	Type of data provided: quantitative Specific primary educational outcomes/Impact measures: • cognitive/metacognitive skills • other [Info] *socialization* Additional secondary outcome: none

Author	Type of disability	Population and setting	Data and analysis
Panerai (2009)	Autism Intellectual/learning disabilities [Info] *severe mental retardation*	Age group: 4-10 years Type of intervention: other [Info] *Comparing TEACCH and other methods* Type of school setting: not specified Type of approach: special needs education; inclusive education/mainstream schools	Type of data provided: quantitative Specific primary educational outcomes/Impact measures: • cognitive/metacognitive skills • other [Info] *Socialization and activities of daily living* Additional secondary outcome: none
Papageorgiou (2008)	Multiple disabilities [Info] *Psychokinetic and visual for all three*	Age group: 11 to 14 years Type of intervention: general programme intervention Type of school setting: not specified Type of approach: special needs education	Type of data provided: mixed Specific primary educational outcomes/Impact measures: self-perception/confidence Additional secondary outcome: none
Robertson (2003)	Autism	Age group: 4-10 years Type of intervention: not specified Type of school setting: public school Type of approach: inclusive education/mainstream schools	Type of data provided: quantitative Specific primary educational outcomes/Impact measures: self-perception/confidence Additional secondary outcome: awareness/ sensitisation
Samsoniene (2006)	Mixed disabilities	Age group: 4-10 years; 11 to 14 years [Info] *9-12; 13 years old* Type of intervention: general programme intervention Type of school setting: public/private Type of approach: mixed approaches	Type of data provided: quantitative Specific primary educational outcomes/Impact measures: other [Info] *Attitudes of children with and without disabilities re interpersonal interactions* Additional secondary outcome: awareness/ sensitisation

What are the impacts of approaches to increase the accessibility to education for people with a disability across developed and developing countries and what is known about the cost-effectiveness of different approaches?

Author	Type of disability	Population and setting	Data and analysis
Singh (2006)	Other [Info] *'scholastic backwardness'*	Age group: 4-10 years; 11 to 14 years [Info] *8-12* Type of intervention: general programme intervention [Info] *individualised education programme* Type of school setting: public school Type of approach: special needs education	Type of data provided: mixed [Info] *test scores + parent perceptions of progress* Specific primary educational outcomes/Impact measures: • literacy rates • cognitive/metacognitive skills • numeracy/mathematical skills Additional secondary outcome: none
Soriano (2011)	Dyslexia	Age group: 4-10 years; 11 to 14 years [Info] *10-13 years old* Type of intervention: intervention with cognitive techniques Type of school setting: public school Type of approach: inclusive education/mainstream schools	Type of data provided: quantitative Specific primary educational outcomes/Impact measures: literacy rates Additional secondary outcome: none
Thagard (2011)	Deaf/hearing impairments	Age group: 4-10 years; 11 to 14 years Type of intervention: general programme intervention Type of school setting: public school Type of approach: inclusive education/mainstream schools	Type of data provided: quantitative Specific primary educational outcomes/Impact measures: • literacy rates [Info] *reading skills* • numeracy/mathematical skills • other [Info] *overall academic performance* Additional secondary outcome: none

Author	Type of disability	Population and setting	Data and analysis
Tootill (2000)	Intellectual/learning disabilities [Info] *emotional and behavioural*	Age group: not specified Type of school setting: not specified Type of intervention: general programme intervention [Info] *reintegration programme* Type of approach: special needs education; inclusive education/mainstream schools	Type of data provided: qualitative Specific primary educational outcomes/Impact measures: other [Info] *analysis with regards to bridges between SE and Mainstream are discussed* Additional secondary outcome: teacher training
Torgesen (2001)	Intellectual/learning disabilities	Age group: 11 to 14 years Type of intervention: intervention with cognitive techniques [Info] *Auditory discrimination and embedded phonics* Type of school setting: not specified Type of approach: not specified	Type of data provided: quantitative Specific primary educational outcomes/Impact measures: cognitive/ metacognitive skills Additional secondary outcome: none
Turner (2008)	Intellectual/learning disabilities [Info] *Down syndrome*	Age group: 4-10 years; 11 to 14 years; 15 to 18 years Type of intervention: general programme intervention Type of school setting: public school Type of approach: inclusive education/mainstream schools	Type of data provided: mixed Specific primary educational outcomes/Impact measures: • literacy rates [Info] *reading/writing skills* • numeracy/mathematical skills • other [Info] *mainstream school experience* Additional secondary outcome: none

What are the impacts of approaches to increase the accessibility to education for people with a disability across developed and developing countries and what is known about the cost-effectiveness of different approaches?

Author	Type of disability	Population and setting	Data and analysis
van Garderen (2007)	Intellectual/learning disabilities	Age group: 11 to 14 years [Info] *8th grade* Type of intervention: other [Info] *Using diagrams to solve mathematical problems* Type of school setting: not specified Type of approach: inclusive education/mainstream schools	Type of data provided: mixed [Info] *student satisfaction questionnaires* Specific primary educational outcomes/Impact measures: • numeracy/mathematical skills • self-perception/confidence [Info] *student satisfaction* Additional secondary outcome: none
Van Luit (2011)	Intellectual/learning disabilities [Info] *mild intellectual disability*	Age group: 4-10 years Type of intervention: intervention with cognitive techniques Type of school setting: public school Type of approach: special needs education	Type of data provided: not specified Specific primary educational outcomes/Impact measures: numeracy/mathematical skills Additional secondary outcome: none
Vetter (2010)	Deaf/hearing impairments	Age group: 4-10 years Type of intervention: general programme intervention Type of school setting: public school Type of approach: special needs education: inclusive education/mainstream schools	Type of data provided: quantitative Specific primary educational outcomes/Impact measures: other [Info] *Communication and psychosocial skills* Additional secondary outcome: none

Author	Type of disability	Population and setting	Data and analysis
Vosloo (2009)	Physical disability [Info] *paraplegia/paraparesis*	Age group: 4-10 years; 11 to 14 years Type of intervention: general programme intervention [Info] *exploratory study for IE* Type of school setting: not specified Type of approach: inclusive education/mainstream schools	Type of data provided: quantitative Specific primary educational outcomes/Impact measures: • cognitive/metacognitive skills • change in attitudes/beliefs [Info] *social integration* Additional secondary outcome: accessibility of the learning environment (toilets, water, teaching materials) Impact of intervention on other cross-cutting issues: equality and diversity [Info] *one measure named 'equality'*
Wass (2008)	Deaf/hearing impairments	Age group: 4-10 years; 11 to 14 years Type of intervention: not specified Type of school setting: public school Type of approach: inclusive education/mainstream schools	Type of data provided: quantitative Specific primary educational outcomes/Impact measures: cognitive/ metacognitive skills Additional secondary outcome: none
Watson (2010)	Autism Intellectual/learning disabilities	Age group: 4-10 years; 11 to 14 years; 15 to 18 years Type of intervention: intervention with cognitive techniques Type of school setting: not specified Type of approach: inclusive education/mainstream schools	Type of data provided: quantitative Specific primary educational outcomes/Impact measures: literacy rates [Info] *written skills* Additional secondary outcome: none

What are the impacts of approaches to increase the accessibility to education for people with a disability across developed and developing countries and what is known about the cost-effectiveness of different approaches?

Author	Type of disability	Population and setting	Data and analysis
Waugh (2009)	Intellectual/learning disabilities	Age group: 4-10 years; 11 to 14 years Type of intervention: intervention with cognitive techniques Type of school setting: not specified Type of approach: inclusive education/mainstream schools	Type of data provided: quantitative Specific primary educational outcomes/Impact measures: cognitive/metacognitive skills Additional secondary outcome: none
Waugh (2011)	Intellectual/learning disabilities [Info] *1 Down syndrome*	Age group: 15 to 18 years Type of intervention: intervention with cognitive techniques Type of school setting: not specified Type of approach: inclusive education/mainstream schools	Type of data provided: not specified Specific primary educational outcomes/Impact measures: literacy rates [Info] *reading accuracy* Additional secondary outcome: none
White (2007)	Autism	Age group: 11 to 14 years Type of intervention: general programme intervention [Info] *programme for placement in mainstream* Type of school setting: not specified Type of approach: inclusive education/mainstream schools	Type of data provided: quantitative Specific primary educational outcomes/Impact measures: other [Info] *number of placements* Additional secondary outcome: none
Williams (2002)	Autism	Age group: 4-10 years Type of intervention: general programme intervention [Info] *computer-assisted instruction* Type of school setting: not specified Type of approach: integrated education [Info] *specifies a special autism unit within a local school*	Type of data provided: quantitative Specific primary educational outcomes/Impact measures: • literacy rates [Info] *reading skills* • change in attitudes/beliefs [Info] *social interaction measures* Additional secondary outcome: none

Author	Type of disability	Population and setting	Data and analysis
Zafiriadis (2005)	Autism [Info] *one case* Intellectual/learning disabilities [Info] *intellectual disability/ learning difficulties/ disrupting behaviour*	Age group: 11 to 14 years Type of intervention: general programme intervention Type of school setting: not specified Type of approach: special needs education; inclusive education/mainstream schools	Type of data provided: quantitative Specific primary educational outcomes/Impact measures: other [Info] *academic achievement in general* Additional secondary outcome: none

Appendix 6: List of documents that were unavailable for the keywording stage

Bevan-Brown J (2001) Evaluating special education services for learners from ethnically diverse groups: getting it right. *Research and Practice for Persons with Severe Disabilities* 26(3): 138-147.

Bhagat F (2007) Exploring inclusion and challenging policy in mainstream education. [Review] [28 refs]. *British Journal of Nursing* 16(21): 1354-1356, 1358-1359.

Block ME, Obrusnikova I (2007) Inclusion in physical education: a review of the literature from 1995-2005. [Review] [75 refs]. *Adapted Physical Activity Quarterly* 24(2): 103-124.

Chapple C, Spelman B (2003) The effectiveness of pupil referral to a special school for children with reading difficulties. *Irish Journal of Psychology* 24: 114-128.

Deneault J (2003) The development of inclusion: theoretical and methodological considerations. *Archives de Psychologie* 70(272-273): 3-22.

Janssen MJ, Riksen-Walraven JM, Van Dijk JPM (2003) Contact: effects of an intervention program to foster harmonious interactions between deaf-blind children and their educators. *Journal of Visual Impairment and Blindness* 97(4): 215-229.

Mastropieri MA, Sweda J, Scruggs TE (2000) Putting mnemonic strategies to work in an inclusive classroom. *Learning Disabilities Research and Practice* 15(2): 69-74.

Molina Garcia S, Vived Conte E (2004) Improvement of cognitive functions in children with Down Syndrome through the Bright Start Program. *Journal of Cognitive Education and Psychology* 4(1): 65-86.

Pelios LV, MacDuff GS, Axelrod S (2003) The effects of a treatment package in establishing independent academic work skills in children with autism. *Education and Treatment of Children* 26(1): 1-21.

Tjus T, Heimann M, Nelson KE (2001) Interaction patterns between children and their teachers when using a specific multimedia and communication strategy: observations from children with autism and mixed intellectual disabilities. *Autism* 5(2): 175-187.

Zelnik N, Sa'adi L, Silman-Stolar Z, Goikhman I (2001) Seizure control and educational outcome in childhood-onset epilepsy. *Journal of Child Neurology* 16(11): 820-824.

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