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Preventing disability through understanding international megatrends in Deaf bilingual education

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ABSTRACT

Background: Education is a basic prerequisite for d/Deaf people's health. Deaf education varies considerably from country to country and we still know very little about the reasons for such variation.

Objective: To identify international megatrends that influence the current Deaf bilingual education move (Deaf Bilingual–Bicultural education; DBiBi) worldwide.

Methods: Using the Delphi technique, 41 experts in d/Deaf education (nine Deaf, 32 hearing) from 18 countries identified, ranked, and rated international megatrends in DBiBi education.

Results: The process revealed six main essential elements of the international implementation of DBiBi education and nine main barriers against it. The top five promoting forces in that list in order of priority were: (1) societal and political changes towards a growing acceptance of diversity and Deaf issues; (2) growing Deaf activism, self-awareness and empowerment; (3) scientific research in sign linguistics and bilingualism; (4) changes in the d/Deaf educational community; and (5) international cooperation. The top five hindering forces included: (1) the view of deafness as a medical condition with a technological solution; (2) phonocentrism and societal resistance to the unknown; (3) educational and d/Deaf educational policies; (4) DBiBi education weaknesses; and (5) invisibility, heterogeneity and underperformance of the d/Deaf population.

Conclusion: The results of this study reveal that social/political changes and a medical/social model of Deaf people's health can promote or limit Deaf people's educational options much more than changes within the education system itself, and that a transnational perspective is needed in deciding how best to support DBiBi education at a national and local level in an increasingly globalised world.

Deafness is still a major cause of disability worldwide, and places an enormous social and economic burden on individuals and countries.[1 2] Furthermore, because deafness is known to be an "invisible disability", d/Deaf people* are at an even greater risk of experiencing health problems throughout their lives than other disabled groups and therefore require special attention. Too often, disempowering child-rearing and educational policies, and exclusionary healthcare provision and health-promoting programmes result in much higher levels of mental illness, sexual abuse and AIDS prevalence in d/Deaf people than in the community as a whole.[1 2 4–7]

Reducing inequities in health between and within countries has been a prime goal of health policy for decades.[8] The European HEALTH21 policy reaffirmed the Ottawa Charter's commitment to address the broad determinants of health as a major strategy for achieving this goal. Education is a main determinant of health and a very strong predictor when making healthy choices. Too often disabled people, and in particular d/Deaf people, are not given easy access to appropriate education. As the first barriers to d/Deaf people arise in childhood, the education of d/Deaf children constitutes a priority and the best strategy for laying the foundations for equal opportunities and combating marginalisation.[1 9 10] Far from contributing towards ensuring a healthy start in life for Deaf people (Health For All target 3), past Deaf education seen only from a perspective of speech rehabilitation has not only increased communication barriers and disempowerment but has also jeopardised Deaf people's rights to use their first and preferred language.[4 9 11 12] Accordingly, as an alternative to traditional Deaf education, a bilingual model consisting of both an oral and a sign language (Deaf Bilingual–Bicultural education; DBiBi) has been inexorably expanding and imposing itself with the support of the United Nations, UNESCO, the World Federation of the Deaf and the European Union[4 9 13–22] as an example of good practice in the education of Deaf children since the beginning of the 1980s.[23–32] Nevertheless, although some countries have taken active steps to create conditions towards a rapid shift to DBiBi, others still lag well behind in adopting this new educational approach. Very limited information is still available on forces that either promote or hinder the change towards this new educational approach, and considerable differences exist between countries as to the degree of application of such educational policy.

The need and right to communicate and to have full and equal access to all aspects of life is a basic human right for all people, but in particular, for Deaf people.[13 14 33–35] Moreover, Deaf communities are no longer isolated local groups of individuals, but a global interlinked community that increasingly pursues political, social and cultural changes at a global level. Current DBiBi education initiatives in distant parts of the world are just one example of the globalised structure of such changes because most of these experiences are continuously influencing, assisting and learning from each other. The purpose of the present study was to identify international megatrends that influence the current Deaf bilingual education move worldwide by integrating the work of geographically distant experts who had never before been able to share their long experience in this field and by facilitating wide access to these strategic data for change.

* The word "Deaf", with an upper-case "D", refers to the culture and community of a particular group of deaf people who share a language—a sign language, whereas the word "deaf", with a lower-case "d", refers to the audiological inability to hear.[3]

METHODS

The study employed the Delphi method to identify international megatrends in the current Deaf bilingual education move.[36 37] Sign language interpreters facilitated communication throughout the whole process, which included regular meetings with team members of the Spanish Confederation of Deaf People.

Selection of experts

As Delphi participants must be purposively (rather than randomly) selected[38] on the basis of individual qualifications and characteristics, experts participating in our Delphi study were selected by a process known as "daisy chaining".[39] In order to do this, 11 international organisations dealing with education of d/Deaf children were identified. Where such a worldwide institution did not exist, we contacted a European organisation of similar characteristics in its place (box 1). Fifteen new institutions and individuals, whose assistance in the study was also requested, were suggested by these organisations, and key informants in the case of Australia. Proposals of experts were collected from December 2003 to May 2005.

In addition to consultation with international organisations involved in d/Deaf education, a literature review was also carried out. The following database systems were searched: MEDLINE, PsycLIT, Sociological Abstracts, ERIC, Dissertation Abstracts, and LIDAT. The following libraries were also consulted: Spanish Documentation and Studies Centre (SIIS), Spanish Institute of Migration and Social Services Library (IMSERSO), and the Documentation Department of the CNSE Foundation for the Suppression of Communication Barriers. For a preliminary literature search, Internet resources were also used in two ways: to identify additional experts and to search background information on potential participants. As material on the Internet is not subject to any standards or review processes, the following evaluation criteria were taken into account when using web resources: authorship, URL affiliation, content, source of information bias, and currency of information. Documents published in the web sites of several educational organisations, such as UNESCO and the European Agency for Development in Special Needs Education, were also consulted. The general terms "deafness and bilingual", "deaf* and bilingual education", "deaf education", "deaf and bibi", "sign language and education and bilingualism" were used to initiate the search. As specific keywords, major subject headings and thesauri were identified, the respective terms were further researched. Works in English, French, Portuguese and Spanish were considered in the selection of potential experts. Works included published and, in some cases, unpublished material, such as journal articles, books, theses and dissertations, conference proceedings and government and corporate reports. Finally, the e-mail addresses of each of the potential participants were found on the Internet.

A list of 39 potential participants were identified as a result of consultation with international organisations. Twenty-two (56.41%) were women and 17 (43.58%) were men. Twelve experts were Deaf, one was hard of hearing, 15 were hearing, and 11 were not specified by nominators and could not be identified by searching the Internet. This list was augmented by 102 new potential participants identified through a literature review. Finally, six new potential panellists were also nominated by three respondents to the round 1 questionnaire. Potential participants included university teaching staff and researchers, journal editors, book editors, teachers of the d/Deaf, policy makers, presidents and members of national associations for the Deaf and activists. Table 1 shows the distribution of potential experts by country. As a result of the "daisy chaining" process, the final potential expert panel comprised 132 potential participants from 22 different countries.

Box 1 International organisations involved in d/Deaf education identified and contacted for the selection of panel members

- World Federation of the Deaf (WFD)
- International Federation of Hard of Hearing People (IFHOH)
- European Association of Cochlear Implant Users (EURO-CIU)
- European Disability Forum (EDF)
- Fédération Européenne de Parents d'Enfants Déficients Auditifs (FEPEDA)
- European Federation of Teachers of the Deaf (FEAPDA)
- International Association of Logopedics and Phoniatrics (IALP)
- European Forum of Sign Language Interpreters (EFSLI)
- International Bureau for Audiophonology (BIAP)
- European Society for Mental Health and Deafness (ESMHD)
- United Nations Educational, Scientific and Cultural Organisation (UNESCO)

Round 1 questionnaire and analysis

A round 1 questionnaire was sent to the selected experts by e-mail from May to June 2005 along with a covering letter inviting them to participate in the study. In the questionnaire, participants were asked to respond to the following two questions: "In your opinion, what are the five main forces/issues that, in the international context, have promoted the change towards the current Deaf bilingual education move?" and "In your opinion, what are the five main forces/issues that, in the international context, have hindered or prevented the change towards the current Deaf bilingual education move from happening?". A supporting letter from the Spanish Confederation of Deaf People was also sent to all Deaf non-respondents to foster their involvement in the study. In addition, a first reminder letter and questionnaire were sent to unresponsive participants urging them to complete and return the questionnaire in the following weeks.

The panel members generated 269 comments on essential elements for and 266 barriers against the current Deaf bilingual education move in response to the first round of questions. In order to synthesise individual participant responses and reduce the number to a manageable level, each response was read through by three independent raters (a Deaf expert on d/Deaf education and two hearing researchers, one from general and sign linguistics and education, and one from public health experienced in the Delphi technique)[40] and grouped by similarity of response into common topical categories and subcategories. In a second stage, categories were reviewed, discussed and agreed upon and a general coding framework was generated. In discussion, modifications were mainly made to the naming of a particular category and the inclusion or exclusion of some subcategories. Once the coding framework consisting of seven categories and 19 subcategories of responses for question 1 and 10 categories and 13 subcategories for question 2 was agreed upon, the three independent raters (RO, MLE and IMB) used it to group all panellists' responses. A concordance analysis was carried out in order to estimate the degree of agreement between raters: 89.59% for question 1 and 98.12% for question 2. Two other raters (CAD and MTR) arbitrated those responses when RO, MLE and IMB could not reach a consensus. Finally, initial responses within each category were condensed into statements without altering the essential

Table 1 Number of potential participants identified as a result of consultation with international organisations involved in d/Deaf education, literature searches and respondents to the round 1 questionnaire by country

Country	Consultation to organisations	Literature searches	Respondents to round 1	Total
Argentina		3		3
Australia	3	3		6
Austria	1			1
Canada		3		3
Colombia		4		4
Denmark	3	2		6
England	3	6	1	10
Finland	3			3
France		1		1
Germany	1	1		2
Greece	1			1
Holland		1		1
Ireland	1		2	3
Italy	1			1
Japan		2		2
Norway	2			2
Russia		2		2
Sweden	10	7		17
Switzerland		1		1
The Netherlands	1	1		2
Uruguay		1		1
United States	9	48	3	60
Non-identified		1		1
Total	39	87	6	132

meaning of individual responses and according to the frequency with which each subcategorised response was brought up.

Round 2 questionnaire and analysis

Once responses to the first questionnaire had been analysed and categorised, a second questionnaire was developed from these initial responses. As the purpose of this second round questionnaire was to reach either a reliable consensus or a trend towards a consensus on whether or not to consider round 1 categorised responses as key factors having an impact upon the current Deaf bilingual education move, only the five categories that did meet the highest level of consensus among the first round respondents were included in the second round questionnaire. Respondents were asked to rate differently each category according to their own perception of its importance for the current Deaf bilingual education move on a five-point Likert-type scale scored as follows: 1, extremely important; 2, very important; 3, important; 4, moderately important; and 5, less important. Individual scores of each force/issue with the same ranking were first summed and then multiplied by the score weight to determine each weighted score. Then, all of the weighted scores were added to determine the total weighted score so that each force/issue could be compared. The study was deemed complete after two rounds as a result of a number of factors. First, the difficulty in maintaining participant involvement in subsequent rounds because of geographical distance and the dispersion of panellists. Second, an acceptable degree of convergence of opinion seemed to have been reached for the purpose of the analysis.

Table 2 Number of completed questionnaires, hearing status, sex, regions and language used to answer the questionnaire

	Round 1	Round 2
Completed questionnaires	54 (40.9%)	41 (75.92%)
Hearing status		
Deaf	12 (22.22%)	9 (21.95%)
Hard of hearing	1 (1.85%)	0 (0.0%)
Hearing	41 (75.92%)	32 (78.04%)
Sex		
Female	30 (55.55%)	23 (56.09%)
Male	24 (44.44%)	18 (43.9%)
Region		
Europe	31 (57.4%)	28 (68.29%)
USA and Canada	17 (31.48%)	8 (19.51%)
Latin America	4 (7.4%)	4 (9.75%)
Australia	1 (1.85%)	1 (2.43%)
Asia	1 (1.85%)	0 (0.0%)
Language		
English	50 (92.59%)	37 (90.24%)
Spanish	4 (7.4%)	4 (9.75%)

Table 3 Results from round 1 of the Delphi survey: frequencies and percentages of statements within each categorised response, for each of the two questions

Question 1: In your opinion, what are the five main forces/issues that, in the international context, have promoted the change towards the current Deaf bilingual education move?		
Answer	Responses	Percentages
1. Changes in the Deaf educational community	72	26.7
2. Societal and political changes	65	24.1
3. Scientific research in sign linguistics and bilingualism	58	21.5
4. Deaf growing activism, self-awareness and empowerment	44	16.3
5. International cooperation	15	5.5
6. Modern information technology	5	1.8
7. Others	10	3.7
Total	269	100
Question 2: In your opinion, what are the five main forces/issues that, in the international context, have hindered or prevented the change towards the current Deaf bilingual education move from happening?		
Answer	Responses	Percentages
1. Societal resistance	68	25.5
2. View of deafness as a medical condition with a technological solution	43	16.1
3. Educational and Deaf educational policies	41	15.4
4. Deaf bilingual education weaknesses	39	14.6
5. Invisibility, heterogeneity and underperformance of the Deaf population	17	6.3
6. Parents' difficulties at accessing information and parents' reactions to deafness	14	5.2
7. Lack of scientific research	10	3.7
8. Lack of financial support	9	3.3
9. Lack of cooperation and intersectorial working	6	2.2
10. Others	19	7.1
Total	266	100

RESULTS

Round 1

In round 1, the following response rates were achieved: 76 of the 132 potential participants (57.57%) responded to the round 1 questionnaire after a total of three requests. From the 76 respondents to the first iteration, a total of 54 (40.9%) completed the questionnaire (21 identified through consultation with international organisations involved in d/Deaf education, 30 through a literature review and three by nomination of other panellists). Table 2 shows the number and characteristics of experts completing the round 1 questionnaire. The final list of categories (seven for question 1 and 10 for question 2) ordered by the frequency of panellists' individual responses are shown in table 3.

Box 5 Raters' description of initial responses within each category for the question "In your opinion, what are the five main forces/issues that, in the international context, have promoted the change towards the current Deaf bilingual education move?"

1. Societal and political changes, such as: a growing awareness, acceptance, recognition and changing attitudes and perspectives towards bilingualism, diversity and Deaf issues by society; an increased recognition of rights of minority groups, human/civil rights and disability movements; growing political activism demanding increased rights and education of Deaf people with an international legal recognition of sign languages by states and international organisations; and the recognition of the Deaf as a linguistic and cultural minority as well as an ideological shift from the medical model to a social model in interpreting human difference.
2. Growing Deaf activism, self-awareness and empowerment. Emancipation, self-advocacy, desire to control their own needs, and greater activism on the part of the Deaf community and Deaf associations worldwide as well as Deaf people's growing awareness of their linguistic human rights, own culture, identity and status. Moreover, Deaf people increasingly have more formal education, employment opportunities and international contacts. They also hold political/educational positions in decision-making organisations, are accepted into academia, and have teaching jobs within Deaf education programmes.
3. Scientific research in sign linguistics and bilingualism. Mostly, international research in linguistics of sign languages, bilingualism (language acquisition and learning, language and cognitive development, and second language learning) and bilingual education; and to a lesser extent, research on Deaf education, the sociology of the Deaf community, gender studies and pedagogy. Research findings have led to the acceptance and recognition of sign languages as real and legitimate languages and of the Deaf communities as bilingual communities.
4. Changes in the Deaf educational community. Mainly, the failure of previous Deaf educational models (oralism and total communication) and the disappointment about other educational alternatives together with advances in the knowledge, recognition and acceptance of bilingual programmes for other language minorities, Deaf bilingual programmes and the important role of sign language in communicative, cognitive and social development of Deaf children; and, although to a lesser extent, teachers' increased involvement, commitment and training and parents' attitudes, involvement and access to sign language.
5. International cooperation. International conferences, seminars and workshops leading to the sharing, exchange and dissemination of information and educational practices. A rise in the cooperation between deaf associations and parents' associations, Deaf associations and the mass media, Deaf and hearing teachers, and bilingual education researchers and linguistics researchers. Also, cross-national contact between Deaf people and their allies as well as cooperation between countries with a large experience in Deaf bilingual education and countries where bilingual programmes have just started.

Box 6 Raters' description of initial responses within each category for the question "In your opinion, what are the five main forces/issues that, in the international context, have hindered or prevented the change towards the current Deaf bilingual education move from happening?"

1. View of deafness as a medical condition with a technological solution. Continued dominance of a medical model of deafness in society and strong opposition to sign languages from professions based on a disability understanding of Deaf children. Medical ambition to cure deafness, medical professions' refusal to think of the Deaf as a linguistic and cultural minority and physicians' control over parents' decisions, giving them erroneous information about sign language and one-sided information about the possibilities of new technologies. The rise and widespread dissemination of cochlear implants giving the impression that deafness will be eliminated and sign language will be unnecessary and/or an obstacle for oral/aural therapy, and pharmaceutical funding and power behind implantations.
2. Phonocentrism and societal resistance to the unknown. The fact that society is strongly focused on sound and speech, social reactions towards the unknown (ignorance, fear of deafness, patronising and/or oppressive attitudes towards Deaf people, sign language and bilingual education, prejudice against and ingrained resistance to sign language), and social policies restraints. Also, and to a large extent, society's lack of knowledge about sociolinguistic issues in general (mostly, incorrect focus on language form instead of communication, lack of knowledge about bilingualism and bilingual education programmes and a belief that sign language impedes spoken language) and about Deaf issues in particular.
3. Educational and Deaf educational policies. To a great extent, the strong push towards mainstreaming of d/Deaf children as the national policy worldwide; also, inbuilt conservatism/inertia of educational systems and Deaf education. Deaf education programmes are still predominantly controlled by "old school" educators who are unfamiliar with and/or reluctant to use modern practices. Moreover, there is strong pressure and advocacy from oral institutions to maintain their educational model, and lack of Deaf professionals within the educational programmes; and finally, although to a lesser extent, new trends (resurgence of oralism) in the education of d/Deaf children because of cochlear implants in some countries.
4. Deaf bilingual education weaknesses. Mainly, the lack of training programmes of Deaf bilingual education for teachers, the lack of consistent standards for hiring teachers of the d/Deaf and lack of trained educators to carry out Deaf bilingual education programmes. Also, the continued reluctance and resistance of certain hearing educators to learn sign language, change oral methods and make room for d/Deaf colleagues. Also, the lack of resources for developing appropriate educational materials and curricula, the failure to explain what bilingualism/biculturalism really means and the lack of information about successful bilingual programmes.
5. Invisibility, heterogeneity and underperformance of the d/Deaf population. The diverse nature and low incidence of the d/Deaf population. Political and tactical weakness of the Deaf community who have not succeeded in articulating their needs, demands, desires and reality. Deaf people's lack of possibilities to gain access to higher education because of constant communication barriers and discrimination and Deaf professionals' continued exclusion from educational systems and decision-making positions influencing changes in Deaf education.

Round 2

In round 2, a total of 41 questionnaires was returned, giving a response rate of 75.92% compared with the first round and 31.06% compared with those approached to take part in round 1. Table 2 shows the number and characteristics of experts completing the round 2 questionnaire.

The results of the ratings from round 2 to respondents are reported in box 2 and 3. Box 2 lists the five top themes and supporting statements as rated by members of the panel in answer to question 1. In order of importance, the themes included: (1) societal and political changes; (2) growing Deaf activism, self-awareness and empowerment; (3) scientific research in sign linguistics and bilingualism; (4) changes in the d/Deaf educational community; and (5) international cooperation. In answer to question 2, box 3 lists the five top themes and supporting statements in order of importance; the most important being: (1) the view of deafness as a medical condition with a technological solution; followed by (2) phonocentrism and societal resistance to the unknown; (3) educational and d/Deaf educational policies; (4) Deaf bilingual education weaknesses; and (5) invisibility, heterogeneity and underperformance of the d/Deaf population.

DISCUSSION

Our findings, which partly parallel those reported from previous research, reveal that issues of community development, political context, a medical/social framework for thinking about health, scientific research, cooperation, and educational processes are closely entwined. Furthermore, the most outstanding finding of our study is derived from the methodology used to gather expert input. By asking respondents to prioritise each previously identified statement, our results point out that social/political changes towards a growing acceptance of diversity and Deaf issues, and a medical/social view of Deaf people's health can promote or limit Deaf people's educational options much more than changes within the education sector that have important implications for policy makers and health planners.

A major strength of this study, in contrast to previous research on Deaf needs using the Delphi method, is including d/Deaf researchers in the monitor team and in the panel of experts to assure both Deaf and hearing perceptions of international megatrends influencing Deaf bilingual education. By doing so, this study has been an attempt to guarantee Deaf people's more equitable possibilities to partake in decisions affecting their own education,[13 41] and therefore their health.

A number of limitations might have influenced the findings of this study. On the one hand, selecting potential participants through recommendations from institutions posed an important difficulty because there is no database available comprising all international organisations involved in the education of d/Deaf children, and therefore their selection, representatives' names and contact details had to be obtained in collaboration with the Spanish Confederation of Deaf People and the use of the Internet (box 1). This fact may have influenced the participation rate in this first stage of the "daisy chaining" process, as reflected by the high number of reminder letters sent out regarding the completion of this first information questionnaire and the need to extend the request to new organisations and individuals. On the other hand, literature searches and contacting potential participants by e-mail may also have created a number of limitations to the study. First, there is a risk that our findings reflect Deaf education clichés

because literature searches necessarily miss people who may have something to contribute on the topic of interest but have not published anything, and recommendations from institutions are limited only to those who are known to the institutions. Second, our study may show a bias in the geographical distribution of participants; besides, works from Africa and Asia (except Japan) neither emerged from the literature review process nor were experts from these countries suggested by consultation with international organisations. Finally, unreliable contact details may also have restricted panellists' responses. Despite these potential limitations, the overall response, 54 panel members (40.9%), represents a wide body of opinion and a desirable number in terms of both response reliability and study logistics.

Education of d/Deaf children is an area that has undergone intensive reform around the world, in particular in recent decades. All these changes have, however, often occurred alongside a generalised perception that substantial changes in the provision of disabled children's education, like any other educational change, stem mainly from each country's own educational system. Nevertheless, considerable research has reported that a broad perspective is needed in understanding and planning any social change. What is more, Lee[42] pointed out that one of the challenges for public health at present is understanding how globalisation and the health of specific individuals and population groups are micro–macro linked, which means "capturing the transnational nature of many health determinants and outcomes" (p. 619). As education is a main determinant of health and a very strong predictor when making healthy choices, a move in the direction of understanding and mapping the interrelationships between the main promoting and hindering forces to a Bilingual-Bicultural educational approach for Deaf children at a transnational level is needed. The overall objective of this study was to identify and obtain a rank-ordered list of these transnational forces. Davies[24 43] highlighted scientific research, political and social changes, cooperation between parents, teachers, researchers and Deaf adults, and changes within the educational community as the main supporting factors of DBiBi education in Sweden and Denmark. Likewise, Mas[44] and Rinne[45] reported five main types of constraining factors to its provision and implementation in France and the United States: sociopolitical, financial, educational, parental and philosophical. Although the results of our study show that Deaf people's long struggle for equal opportunities is one of the most influencing forces towards DBiBi education, this factor does not always stand out in the existing literature. It is also worth noting that cooperation is reported as a promoting or hindering factor depending on the country of origin of the study. Two other findings are also particularly noteworthy: first, our finding that lack of financial support is not perceived by panellists as one of the five top barriers to the change stands in contrast to earlier research in which economic difficulties are pointed out as a very strong inhibiting factor; second, it is interesting that panellists' identification of technological advances as an element of DBiBi education has not been reported in previous investigations. These similarities and differences may reflect the fact that earlier research was aimed at explaining supporting and constraining factors at a local, regional or national level, whereas ours has a broader transnational focus. It would also explain why our results are more consistent with those reported by Lynch[15] on barriers to inclusion in the education of disabled children worldwide. Also, another possible reason is that our results were obtained directly from participants in contrast to most previous studies.

Whereas schools with a DBiBi model provide a favourable setting for achieving genuine equalisation of opportunities for all and full participation, their success requires a concerted effort, not only from teachers, peers and parents, but also from a number of different stakeholders in education at different levels: local, national, and international. At each level, stakeholders with various roles and responsibilities may be supportive or undermining. For example, it is well known that health providers are key stakeholders in promoting a healthy start in life for d/Deaf children and assisting their families. As 90–95% of d/Deaf children are born to hearing parents, for these parents with no knowledge of deafness, most opinions about ensuring a healthy psychological, social and educational development for their d/Deaf children will come from the field of medicine. Most primary-care doctors are, however, extremely unlikely to have any d/Deaf awareness or knowledge of the Deaf community,[4] may well believe that children who do not hear necessarily need their hearing mechanism to be "repaired" by means of technological instruments—cochlear implants being the most recent—forgetting, as many times before in history, the linguistic human rights of Deaf children and the opinions of the Deaf community.[12 46 47] Consequently, the provision of healthcare services to Deaf people based only on a medical model of health becomes highly undermining, as findings in this study have pointed out, instead of supportive of Deaf children's needs. Accepting and recognising Deaf people as a linguistic and cultural minority no more "impaired" than any other language and cultural minority in an increasingly recognised multilingual world; that is, promoting a social model of health to Deaf children and their families, is one of the first steps needed to meet the requirements of Deaf children in an effective and equitable manner.

The results of this study suggest that a change towards DBiBi requires, as much as in any other sector, if not more, the help of a sound general strategic process based on a careful consideration of present and future megatrends in d/Deaf education and on the needs and expertise of Deaf people themselves. We therefore encourage the application of strategies for the development, implementation, sustainability, and improvement of DBiBi school programmes to be multi and intersectoral and require concerted efforts of a variety of players with many different interests.

What is already known on this subject

- Education is a basic prerequisite for d/Deaf people's health
- Changes in d/Deaf education vary considerably in pace and effect from country to country and we still know very little about the reasons for such variation

What this paper adds

- Experts' consensus opinion about international megatrends that either promote or hinder the change towards the current Deaf bilingual education move worldwide
- The three most important promoting factors identified were: societal and political changes towards a growing acceptance of diversity and Deaf issues; growing Deaf activism, self-awareness and empowerment; and scientific research in sign linguistics and bilingualism
- The three most important hindering forces were: the view of deafness as a medical condition with a technological solution; phonocentrism and societal resistance to the unknown; and educational and d/Deaf educational policies.

Gaining an understanding of how promoting forces may be amplified and hindering forces counteracted as well as information exchange, networking and cooperation of people and/or organisations who are in a position to influence future d/Deaf educational trends should be an area of further research.

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