A new research agenda for Conductive Education

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Phoenix Förderzentrum is participating with its knowledge and experience.

Summary

The aim of this project was to create a research agenda, by identifying the priority topics for research in Conductive Education. The research agenda is being developed to give guidance to researchers, funding bodies and practitioners on the most important priorities for research studies. It identifies the uncertainties and unknowns that stop us providing the very best service that is possible.

It was an international pilot survey that successfully identified 5 top priorities, although the survey should now be used more widely to establish the validity of the results, and to gather more opinions on what should be the priority for researchers.

Rationale: why carry out the survey?

There has long been an appeal for research into Conductive Education, but very little has been done. Often there are small isolated projects, that produce interesting results, but have little influence on the development of practice, and rarely contribute to significant changes in practice nor to the evidence on the effectiveness of Conductive Education. Internationally, the development of evidence-based practice, perhaps through the collection of practice-based evidence, is an absolute priority for Conductive Education if it is to reach the status of mainstream and fundable services.

This project addresses the problem, by developing clear research priorities that could focus future research work on essential priority questions.

Method: What happened?

The project started with a small international gathering of researchers in Newcastle, England in June 2010. This group discussed research into Conductive Education and identified 17 questions they felt were important, and that could be addressed through research studies. Subsequently this list was sent out to a range of stakeholders – conductors, families, researchers, administrators - who were asked to rate the topics in importance. The list of questions is included as Appendix 1. This article discusses the results of this survey.

The results

Who responded?

87 replies were received. This included replies from 63 individuals and the rest represented groups that were consulted on the questions. Although the questionnaire was designed to identify the background of those responding, where a group was mixed it was not possible to identify the number of people with each background, nor the total number of people in the group. This is a weakness in design as a group of, say, 5 respondents would have collectively agreed their priorities and this would have been recorded as 5 identical responses, so degrading the information. Additionally, the number of people in a few groups was not given and their list was considered as one response. This does not invalidate the findings, but results in one of the conclusions at the end of this paper, that the survey should now be extended to achieve a final reliable result.

Where it was possible to identify specific backgrounds, the following emerged:

Conductors 41%; educators & admin. 32%; therapists 13%; parents 9%; researchers 3%

Of all the respondents 49 (56%) were from the UK, and 37 (43%) from the rest of the world.

The sample then, is far from perfect but does contain significant diversity in geographical location and professional background and forms a good representation of the people within the CE field. Interestingly, a breakdown of answers in relation to geographic location did not identify any significant trends or characteristics.

Scoring the responses

Two versions of the questionnaire were sent out, the only difference being in the order in which the 17 topics were listed. There were no identifiable differences in the responses from the two versions.

From the 17 topics, respondents were asked to identify the 5 most important topics to research and to place them in order of importance. They were asked to identify the next 5 most important topics, but these did not have to be placed in rank order.

This meant that each respondent would identify a total of 10 questions that were important, and leave 7 as of lesser importance.

Using two different scoring processes, the same 5 topics emerged very clearly as the most popular choices. At the other end of the rating, none of the topics received no votes at all, although 3 topics (# 7, 8, 13) received markedly fewer nominations than the other topics.

In identifying the most popular answers, the number of times a topic appears in each of the 5 top positions was added up. This clearly identified 5 topics as the most common. However, this method did not fairly reflect the number of people selecting each question as, once a question was ranked and taken out of subsequent calculations, there was no way to transfer individual votes onto the next most popular ranking.

Therefore each of the top 5 rankings was assigned a score (position 1 = 5 points; position 2 = 4 points etc.) and all the responses calculated. This resulted in the same 5 topics appearing to be the most important, although their ranking was slightly changed. The results are shown in Table 1.

Table 1

Priority number	Question	Position (Pos 1 = 5 points per vote, Pos 5=1 point per vote)					**Total**
		1	2	3	4	5	
1.	3	80	76	36	14	7	**213**
2.	2	65	96	30	8	7	**206**
3.	6	95	28	39	32	3	**197**
4.	5	65	48	33	12	8	**166**
5.	1	55	36	39	8	9	**147**
6.	16	10	8	15	10	7	**50**
7.	14	25	0	6	10	6	**47**
8.	15	25	0	6	10	6	**47**
9.	4	5	16	6	10	4	**41**
10.	11	0	4	15	12	6	**37**
11.	10	0	12	3	8	5	**28**
12.	9	0	12	3	8	3	**26**
13.	12	0	0	9	8	5	**22**
14.	8	10	0	0	4	2	**16**
15.	7	0	4	6	4	0	**14**
16.	13	5	0	0	4	4	**13**
17.	17	0	0	0	8	3	**11**

To obtain the next 5 important topics (but not in rank order), the number of times a topics was selected as important was added up. Taking out the 5 most popular topics, the next 5 could be identified. In fact, this identified 6 topics, as three topics received the same number of nominations (see table 2). As a check, the weighted scores used to identify the top 5 topics were calculated for all the topics (as shown in table 1) and the same questions, with one exception. appeared in the 5-11 ranks.

Table 2

Question number	**# of respondents including this question**	**% respondents including this question**
3	75	86%
6	74	85%
2	72	83%
5	66	76%
1	59	68%
16	44	50%
11	40	46%
10	38	44%
12	36	41%
14	36	41%
15	36	41%
4	34	39%
9	27	31%
17	26	30%
8	21	24%
13	19	22%
7	15	17%

Table 2 includes one additional piece of information - the number of people who voted for each topic expressed as a % of the total number of respondents. This data shows the majority of people (over 50%) agreed on the top 5 topics, making this rank order seem secure. The % of respondents who voted for each of the next 5 most important topics is, naturally lower.

These figures, though, show all those who mentioned each question in the top 10 topics. For example Q16 received a total of 44 votes. 20 of them ranked it in the top 5 topics, which was not enough to include it in the final top 5 topics (the highest ranked question received over 60 votes). It received 24 votes for a position in the 5-10 range, but it seemed fair to add together all the mentions when selecting the topics for the final 5-10 list.

The results: What are considered the most important topics?

Table 3: Rank order of topics

5 most important topics, in order of importance:

1. Are skills of daily living improved through CE (i.e. generalisation of skills to 'real life' situations)
2. What is the impact of CE on social and emotional development (e.g. decision making, problem solving and communication)?
3. What measures of change can be used to record the impact of CE?
4. What is the impact of CE on neurological functioning?
5. What is the impact of CE on families with a disabled child?

Next 6 most important topics (not in order of importance):

Establish links between modern learning theory and CE practice
Do children receiving CE in mainstream settings acquire the same skills as those in a specialist CE setting (long term outcomes)?
What is the unique contribution of Conductors in cross disciplinary teams?
How can parents/carers be most effective in supporting CE?
Identification of the underlying theoretical concept
What is the impact of CE on employment in adults (i.e. keeping jobs or returning to work for people with Stroke, MS or Parkinson's)?

Topics ranked as of lesser importance

Do we need specialist equipment for successful CE?
Cross disciplinary teams – who should be in them?
What are the characteristics of a successful team?
What elements of the training of Conductors are critical to their success as practitioners?
What is the most effective model of delivery of CE to adults?
Does the underpinning theory of CE apply to all user groups (e.g. the development of children, the rehabilitation of adults)?

Discussion

The most important topics are concerned with the impact of CE, rather than the practicalities of how to do it or the theoretical thinking underpinning the field. It is clearly thought important to identify the difference that CE makes, not only to the person receiving the programme but to their family. There were not enough respondents within each category or background (e.g. parents) to know if there were significant differences in the responses of different categories of people, but the results for conductors followed the same rank order as the whole group, except that Q12 (on training conductors) appeared in their 5-10 list.

The topic in position 3, on measuring change, is particularly significant as there is currently an embryonic, but potential major, initiative to explore the use of the ICF model for recording performance and change in people undertaking CE. This result suggests this is a timely and important project.

Most topics imply work with children, and this reflects the primary interest of the respondents, but there was one topic specifically on adults and this was ranked within the top 10. Perhaps this reflects the growing importance of work with people who have acquired neurological conditions, and for whom CE seems successful even though there is very little information about how it is delivered nor evidence of its impact.

Most of the practical topics - about how to do CE - have the lowest priority. Frustratingly for researchers, these may be rather easier topics to research as they can control variables such as use of specific items of equipment, or routines, or schedules of programme delivery.

By contrast the topics ranked most important are notoriously difficult to research using conventional methodology. Comparisons of progress before and after interventions, comparisons with other forms of education or therapy, require the control of complex variables and, ideally, large groups of subjects. This is where an agreed research agenda might be of assistance in focussing the efforts of small scale research into an identical question to gather a larger data base which allowed compilation of results, as well as cross-centre comparisons.

Additional topics

The respondents included over 90 different suggestions for other topics that were worthy of research. These covered a very wide range of topics, but could be broadly grouped as follows: service models & delivery (33%); impact (43%); populations-using CE with specific groups (16%); issues in research (8%)

Many of these suggestions turned out to be elements of the broader topics in the original 17 questions, and none seemed to have been suggested by a large number of respondents. But they are the questions that are puzzling practitioners, and are coming from those directly involved in CE. This does highlight the potential for the field to engage in isolated but interesting research, of concern and value to those directly involved, but not necessarily contributing to significant development of evidence-based practice – one of the purposes of a research agenda.

What will be the benefits of having the research agenda?

The presence, and subsequent use, of an agreed research agenda should help CE to become a more recognised field of work, and improve the offerings of practitioners as it becomes based on verifiable evidence of impact. These reasons can be expressed as five different benefits:

1. Our practice should develop and improve as we understand more about why CE works and which elements are critical for its success. As practitioners, we will become more professional, able to base our practice on evidence. At present there is very little research evidence and much of our practice is, in truth, based on experience of what seems to work.

2. Funding agencies will give more support to our work. They want to make good use of their funds, and so need to know if a proposal is important and of benefit to

the field. The presence of an agreed international agenda can be used by them to judge the value of a proposal and reassure them the proposal is not simply a personal interest of a specific researcher.

3. An agreed research agenda helps us to be accountable for our work and shows that any research is a response to a real need, agreed by both practitioners and by the people benefiting from a service. Therefore, the consultation is essential if the agenda is to be inclusively compiled, so we can be sure it does represent the views of all involved. Researchers and funders will want that reassurance, as will practitioners and disabled people who give up time to help with research studies.

4. A research agenda is of help to the field more generally in making the media and the general population aware of our work, as well as specialist groups such as health professionals, educators, workers in disability. In our small field we need a significant presence to get our share of publicity, support and research. The presence of the agenda enables us to show that we are a professional group, driven by the wish to improve, and with a consistent message about what we know and what we need to discover.

5. The agenda can be used to encourage researchers to focus on the really important questions, solving the real issues we have identified rather than questions they might find of personal interest or that are easy to examine. It can also be used to encourage researchers in different centres to work on the same questions, so that findings can be shared and, together, questions answered on the basis of larger number of subjects and more comprehensive data.

All these reasons show why the list, the consultation and the final research agenda (particularly if endorsed by the international CE community) should be of help to each one of us, as well as to the field of CE.

Next steps

The results of this survey were presented at the International Conference on Conductive Education, held in Hong Kong December 2010. A group of interested participants, representing most of the major institutions, considered the project and endorsed the current Agenda, recommending that this be further developed and disseminated widely. (see Appendix 3 for list of participants)

It was accepted that there is no International CE community that could formally approve the agenda, although a resolution accepting research as a priority development and endorsing the current agenda would be a valuable aid to support applications for funding, and encouraging research to focus on critical topics.

If the survey were now to be extended so that a greater number of people contributed to the data, then more confidence could be attached to the findings, and it should be possible to begin to identify the priorities for different groups of respondents (e.g. parents), for different service recipients (e.g. adults with acquired neurological conditions), and for different service models (e.g. mainstream settings, geographical regions). An extension of the survey might also introduce more technical information about research methodologies that could be applied to answer some for the top priorities. This will be needed to convert this ‘wish list’ into practical studies.

The international research group at the conference recommended that one centre be asked to collate, and disseminate information about research priorities in order to ensure continuing development of the Agenda from a small, but crucial beginning. They agreed that Percy Hedley Foundation, Newcastle, UK be asked to take on this role for a 2-year period. In addition they recommended that one centre should be identified to collate information about research, so enabling very many practitioners to benefit from up-to-date evidence, as well as encouraging researchers to focus on the critical questions that their research could answer.

My thanks go to those who took time to contribute to this pioneering study, and helped to make it a worthwhile step forward in improving our practice. I am pleased there is enthusiasm for following up this initial pilot study. This will be a fascinating and valuable piece of work but, of course, the ultimate beneficiaries are the children and adults whose lives are improved by access to high quality CE –and that is at the heart of what we all want to achieve.

Tony Best
Chief Executive,
The Percy Hedley Foundation

Appendix 1

ORIGINAL QUESTIONS

Impact of Conductive Education

1. What is the impact of CE on families with a disabled child?
2. What is the impact of CE on social and emotional development (e.g. decision making, problem solving and communication)?
3. Are skills of daily living improved through CE (i.e. generalisation of skills to 'real life' situations)?
4. What is the impact of CE on employment in adults (i.e. keeping jobs or returning to work for people with Stroke, MS or Parkinson's)?
5. What is the impact of CE on neurological functioning?

Aspects of delivery

6. What measures of change can be used to record the impact of CE?
7. Do we need specialist equipment for successful CE?
8. Cross disciplinary teams – who should be in them?
9. What are the characteristics of a successful team?
10. What is the unique contribution of Conductors in cross disciplinary teams?
11. How can parents/carers be most effective in supporting CE?
12. What elements of the training of Conductors are critical to their success as practitioners?
13. What is the most effective model of delivery of CE to adults?
14. Do children receiving CE in mainstream settings acquire the same skills as those in a specialist CE setting (long term outcomes)?

Understanding the concept

15. Identification of the underlining theoretical concept.
16. Establish links between modern learning theory and CE practice.
17. Does the underpinning theory of CE apply to all user groups (e.g. the development of children, the rehabilitation of adults)?

Appendix 2

RESPONDENTS' SUGGESTIONS OF OTHER RESEARCH QUESTIONS

- How other professionals (other than conductors) impact on the delivery of CE
- Early Years. Parental opinion on applying CE in their everyday lives. (Challenges, results or/and compared with other services/therapies)
- What impact does CE have on the delivery of the national curriculum and the EYFS in CE settings?
- What impact does CE have on children's progression in the national curriculum who attend mainstream and specialist provision
- What is the impact of CE on children with primary sensory, mental or cognitive impairment?
- How can we prove the positive impact of CE on the orthopaedic status, the mobility, the ability to communicate and the self - employment of severely challenged person
- Which difficulties arise from the compatibility of successful CE, education authority regulations and the regulations prescribed by the health (insurance) funds?
- What is the impact of Mother and Child Group on emotional and social development
- CE and UN convention on the rights of persons with disabilities
- What is the impact of motivation for the client (child/adult/youth) to practice CE, over a long period (e.g. Lifetime)?
- What is the impact of success for the client after practicing CE for a long period of time
- What is the most effective model?
- How does that affect children's capability who have had intensive CE at age 0-10 yrs and continued their studies in a normal secondary school (without CE)
- How successful CE can be in summer schools (4 weeks period per year)?
- How can a conductive team most effectively influence all aspects of a client's life in order to ensure that everyone is contributing to the conductive upbringing or lifestyle of that client?
- Family perception of the efficiency of CE; children's perception of the efficiency of CE (over time?) (? End of each key stage?)
- How successful is integration into mainstream following CE in early years
- How CE compares to other types of therapy e.g. Bobath
- Recognition of therapy in educational settings
- Comparison of students who don't access CE - is therapy alone enough?
- What do clients/carers feel the benefits of CE are in comparison to other 'treatment' methods
- How to improve/change CE considering 'new expectations' (e.g. ageing, children with more severe learning difficulties)?
- Advantages/disadvantages of 'old days' and 'twenty first century' CE
- Are aspects of sensory integration beneficial in a CE setting?
- What skills are required to be an effective team leader (or similar) in a conductive education setting? (E.g. doe this always need to be a conductor?)
- Measuring outcomes of the early intervention with CE
- The impact of the age of a child starting on a Conductive Education programme on the outcome (are there papers about this - is it best to start as babies, or can there still be a good outcome if a child is 5? 7? 11?)
- What is the impact of CE for children with MLD and SLD? (Behaviour difficulties?)
- Could the principles of conductive education benefit children without disabilities?
- How to develop better relationship between CE centres and other professionals who are not member of the cross disciplinary teams?
- What are the consequences of the child's development after the transition from a full placement CE Centre into mainstream environment? (advantage, disadvantage)
- What is the advantage of CE for a child/family/etc. after operation?
- CE v Bobath approach?
- Function v posture - the big debate!
- The affects/benefits of CE on hip development in children
- Do we need to make changes in CE due to the changing characteristics of CP?
- Other alternative therapies (e.g. sensory integration)
- What is the impact of CE on inclusion of young children? Is it attendance only or is it real inclusion?
- Measure to compare CE with other traditional methods of health/education
- In what ways will CE need to develop in order to remain relevant?
- What are characteristics that make CE unique?
- What is the most effective model of delivery of CE to children?

- Effectiveness of sessional CE for children? What makes an effective session?
- Variation of Q14 - CE in a CE centre on a sessional basis at a CE centre not in mainstream school
- What is the impact of CE when applied in a very early age 6 months - 1.5 years old?
- What is the most effective model of delivery of CE in young age up to 3 years old?
- In connection with Q14 - How can CE prepare children (and school) to attend and fully included into a mainstream school
- Perhaps looking at the concept of professional identity within CE - lots has been written about this re other professions and it Is very current
- What is the impact of CE on personality
- What is the impact of CE on PMLD children
- Long term benefits of childhood CE
- 16 is also important
- Q7 - I think a lot of people are using specialist equipment especially communication aids, so also looking at what equipment we need and how to implement it if there is no direct access to a SALT
- The effectiveness of Conductive Education at a very young age (under 5yrs) compared to practice with the older age range.
- The holistic nature of CE: How different aspects of development are affected by the practice of CE.
- Case studies of children and their families who have/have not received CE to prove the effectiveness of CE
- CP Children in mainstream schools, how inclusion is effecting their learning, function and self esteem
- How can CE support pupils with PMLD
- What are the benefits of continues CE i.e. after the age of 7,11, 15 and 18
- Secondary school CE services - effectiveness of continuing full time CE, vs. training staff in / outreach support to other schools to enable young people to become more integrated into their local communities
- Q16 is also important.
- Professional development, communication
- Would different CE centres require any help from other centres? (Practical question, setting up new department, fundraising etc.) If yes, what sort of help would they need and where would they get it from?
- Does frequency of CE input (e.g. sessions every day, 3 times a week, once a week, fortnightly, monthly per individual) 'matter'? Which is most beneficial?
- How have the underlying principles of CE been adapted in various countries, and if the impact this has had on its effectiveness (if any)?
- Are there areas of potential career progression that may develop in the future?
- What are the impacts of CE amongst young adults who have progressed through a CE provision during their school years
- How ICF - classification can be linked to CE?
- Establishment of a casual chain between demonstrated effects at the level of activity and effects at the level of participation
- Long-term impact of CE on children as they grow up. What is the most effective model for children and is this different based on diagnosis and age of child?
- How can the CE team best educate parents to enable them to be the child's skilled assistant in implementing learning opportunities and skill development throughout the family's day?
- How can professionals who understand CE disseminate information and describe the fundamentals of CE based programs to medical, allied health and education professionals?
- How can communication be embedded in every CE based program throughout the world
- What are the main strategies that CE professionals use to provide learning opportunities for children with CP to develop achievement in daily activities such as toileting, dressing, moving around, eating etc.? Once decided: How can these main learning strategies be measured and the impact quantified as well?
- What do children with CP who have experienced CE identify as the most effective strategies that they learned in CE? What was the most enjoyable aspects of a CE program? What was unique? What helped? What did not help?
- How can CE professionals fit within existing educational and biomedical models that other disciplines must adhere too? For example, how does CE fit with the WHO ICF or the United Nations Rights for Children with a disability?

- How can CE professionals measure the capacity of CE based programs to reduce the impairments associated with CP and simultaneously build capabilities and the participation of children enrolled in programs?
- How can CE professionals differentiate between research that evaluates individual CE programs and efficacy research that measures the impact of CE based interventions?
- How can CE based programs directly increase the participation of the child with CP, in family life, school life and curriculums, and community life?
- Do adults receiving CE in daily structures (such as in sheltered workshops and living groups) acquire the same skills of daily living as those in other support settings?
- How can CE and conductive programs be developed for sheltered workshops and living groups for adults? Is it possible to replace the structured motoric programs by the training of implementation in every day life?
- How can a structured conductive daily routine support the development of personal skills and how can it give the basic for a need-orientated flexibility within the own life planning?
- How can the integration of handicapped adults in the community be supported by CE?
- What models could be developed to face the field between increasing competences, self-determination and continued motivation for further motoric training in the work with disabled adults?
- What is the impact of CE on the medical/orthopaedic maintenance and the handling with symptoms of old age or long-term effects of orthopaedic operations?
- Impact on CE on self awareness and self perception, level of confidence etc.
- Long term effect on mobility and independence level from participating in CE
- How does CE affect general overall independence?
- How to properly compare CE with other interventions vis-à-vis cost effectiveness
- Re: Q#8 - why might cross disciplinary teams be better?
- Re: Q#15 the question ought to validate the theoretical concept not identify it
- Re: Q#4 - the question ought to deal with impact at the level of CE activity not participation
- How CE centres, such as those in America, can hire foreign Conductor-teachers with less hassles and complications due to Immigration. American CE centres will not survive if unable to hire qualified Conductor-teachers in a timely manner.
- A comparison of the total lifetime cost (medical, educational, state aid, etc) of a child using CE and a child not using CE

Appendix 3

Members of the Conductive Education Workshop, Newcastle June 2010

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