Exploring children's difficulties with language and literacy
Evaluating effectiveness

Narr:
A key part of Professors Snowling's and Hulme's research involves the evaluation of the effectiveness of interventions.

Charles:
I guess the best accepted methodology for looking at interventions is through what are referred to as randomised control trials. This is a methodology that's come from medicine so, for example, if you believe that a certain pill will help to control blood pressure, you get a group of patients with high blood pressure, you give half of them the pill and you give the other half a placebo, or pill made out of talcum powder with no active ingredients in it, and if it's true that the pill helps to control blood pressure you'll be able to show that the people getting the drug have lower blood pressure than the people who are getting pills that look just like the drug. In the field of education many groups have done studies now which take that general approach so, for example, if you believe a particular form of teaching should be effective for a particular group of children you can identify such a group of children and at random you can select a certain proportion of them to receive the special form of teaching, and another group of children to simply perhaps wait to get that teaching later, or get an alternative form of teaching, and again it's like comparing the two pills. You're comparing how well the children learn who are getting what you believe to be the appropriate form of teaching, with how well the children are learning who are not getting that appropriate form of teaching. I think it's very, very important though to say that in education for too long people have followed their intuitions about what works, and actually we all have many intuitions about what will be effective. Some of those intuitions are better based than others, but ultimately the only way of being sure of what works is by actually evaluating it in a trial of this sort where you do random allocation, you therefore eliminate pre-existing differences between children as explanations for why some children are learning better as a result of an intervention than the children who are not getting the intervention.

Narr:
When evaluation reveals that an intervention gives positive results, theory can then be translated into classroom practice.

Charles:
I think there are two very clear examples of that. The first would be in children who might be characterised as having dyslexia or typical poor reading. Those children have problems with the phonological aspects of language and we, and a number of other groups, have done rigorous evaluations to show that teaching that combines phonological awareness training with systematic phonic instruction learn to read better than children who don't get such specialist teaching. (lipsmack) The other main example, I guess, would be in recent studies that we've been involved with looking at children with reading comprehension impairments. These children, it's fairly well established, have problems with what I would call broader language difficulties, that is difficulties in learning the meanings of words and difficulties in learning to deal with grammar and syntax of spoken language, and interventions that target those underlying difficulties in the context of reading for meaning have been shown to be effective in helping these children to better comprehend what they're reading.

Narr:
There are difficulties is knowing the best age at which to carry out an intervention.

Maggie:
Well, I think it's fair to say that the best evidence we have about interventions come from interventions that happen in the school years. That's not to say that that's necessarily the

best time for intervention, but in terms of evidence at the moment, that's where we have the best evidence. If a child has an oral language difficulty in the pre-school years, as would be the case for children with specific language impairment, obviously they need help with the development of those spoken language skills, and that would normally be delivered by speech and language therapist, or speech and language therapy services. And one would aim to get those children's oral language skills to the average range by the time they enter school so that they have a good foundation for learning to read. In an ideal situation also, of course, learning to communicate and everything in the curriculum is about language, so if a child has an oral language difficulty in the pre-school years they should be getting speech and language therapy. Once children go to school the question, I suppose, is well when would their dyslexic difficulties be evident, and I think it's true to say that we know enough now from research evidence to suggest that we know what the risk factors are from the moment a child starts to learn to read because a child at risk of dyslexia will be very slow to learn their letter sounds, and they'll be very slow to develop phoneme awareness. So in a well delivered mainstream curriculum which features phonics these children will very quickly become evident because of their delay or slowness in acquiring the letter sound knowledge and the phonemic awareness which are what we call the kind of foundations of the alphabetic principle, and in my view we should have intervention at that point for those children, possibly a fairly light touch because they haven't yet failed to learn to read and if you put in the kind of intervention of the type that we've evaluated, which promotes letter sound knowledge, promotes phoneme awareness and tries to link the two in the context of reading, for many of those children we can intervene early and help them to get towards normal levels of reading skill. Now for a proportion, even with the best evidence based intervention at that early stage, they will still have difficulties because for some children with dyslexia this is really quite a severe and persistent problem, and for those children then who even after this early intervention still have difficulties we certainly need to think about more intensive, more individualised approaches.

So in terms of time frames we're saying for language impairment certainly pre-school work; for children at risk of dyslexia early intervention from the first year of reading instruction; the poor comprehender group to date haven't really become very evident in the school system until around about the middle school years, about years four and five, and the evidence based interventions have targeted children at that age, and that's certainly one way of approaching the problem of reading comprehension failure, but we think that ultimately if we could fix oral language in the pre-school period many of these children who show the poor comprehender profile wouldn't actually ever develop into poor comprehenders because they would have a more solid oral language foundation.

Narr:
But might there be disadvantages as well in trying to identify disorders at a very early stage?

Maggie:
I think the issue of at what point you identify and label a child as having a disorder is an important point. From studies of children with specific language at around about age four we know that by 5½ around 40% of those children will have resolved their language difficulties so you clearly don't want to put on the label specific language impairment and then find out actually this child hasn't got one any more and equally with dyslexia, although there's a lot of interest in very early screening and intervention, the sorts of screening that you can do at around about age four are only about 75% accurate in identifying the children who are going to go on to be dyslexic, so clearly there's an issue around using labels. But I think what we can do if we know about normal development, or typical development, is that we can say this child is not at this point in time at the point where we think they should be, given what we know about typical development, what they need is a boost, give them a boost and see what that does, but continue to monitor them. You could think of these children almost as failing to thrive, they are at risk, but I think they just need to be identified by teachers, they need to be given well delivered, evidence based intervention, and they need to be closely monitored. Once a child is seven years of age, if they haven't responded to a good intervention, one begins to be concerned and one begins to think yes, this is a learning disorder.

I think any child who has a learning difficulty requires support and the nature of that support depends upon the profile of strengths and weaknesses that they show, so you can have children with specific learning disorders such as dyslexia and specific language impairment, and specific difficulties with motor control, those children need specific help targeted at their area of difficulty, but given the specificity of their problems often they have typical development in other areas and that also can be an important compensatory resource. There are other children who when it comes to the other resources that these children have in addition, if you like, to booster up their learning they have more general learning difficulties so they sort of don't have those strengths to help them, and those children need a broader form of intervention, but the principle's the same, one needs to identify given the different domains of learning, where is a child at relative to typical development and if they're not there they need help. That's why it's really important, I think, for teachers to understand about typical development in all of our domains of learning from language, through reading, to motor skills, attention development, that's really the core of understanding individual differences in learning.

Narr:
Finally we asked Professor Hulme about interventions that have given positive results.

Charles:
I think there are two very clear examples of that. The first would be in children who might be characterised as having dyslexia or typical poor reading. Those children have problems with the phonological aspects of language and we, and a number of other groups, have done rigorous evaluations to show that teaching that combines phonological awareness training with systematic phonic instruction learn to read better than children who don't get such specialist teaching. The other main example, I guess, would be in recent studies that we've been involved with looking at children with reading comprehension impairments. These children, it's fairly well established, have problems with what I would call broader language difficulties, that is difficulties in learning the meanings of words and difficulties in learning to deal with grammar and syntax of spoken language, and interventions that target those underlying difficulties in the context of reading for meaning have been shown to be effective in helping these children to better comprehend what they're reading.