



**European Cooperation
in the field of Scientific
and Technical Research
- COST -**

Brussels, 14 November 2014

COST 106/14

MEMORANDUM OF UNDERSTANDING

Subject : Memorandum of Understanding for the implementation of a European Concerted Research Action designated as COST Action IS1406: Enhancing children's oral language skills across Europe and beyond - a collaboration focusing on interventions for children with difficulties learning their first language

Delegations will find attached the Memorandum of Understanding for COST Action IS1406 as approved by the COST Committee of Senior Officials (CSO) at its 191th meeting on 12-13 November 2014.

MEMORANDUM OF UNDERSTANDING

For the implementation of a European Concerted Research Action designated as

COST Action IS1406

ENHANCING CHILDREN'S ORAL LANGUAGE SKILLS ACROSS EUROPE AND BEYOND - A COLLABORATION FOCUSING ON INTERVENTIONS FOR CHILDREN WITH DIFFICULTIES LEARNING THEIR FIRST LANGUAGE

The Parties to this Memorandum of Understanding, declaring their common intention to participate in the concerted Action referred to above and described in the technical Annex to the Memorandum, have reached the following understanding:

1. The Action will be carried out in accordance with the provisions of document COST 4114/13 “COST Action Management” and document 4112/13 “Rules for Participation in and Implementation of COST Activities”, or in any new document amending or replacing them, the contents of which the Parties are fully aware of.
2. The main objectives of the Action are to increase the effectiveness of interventions for children with Language Impairment and to improve understanding of the context in which those interventions are delivered.
3. The economic dimension of the activities carried out under the Action has been estimated, on the basis of information available during the planning of the Action, at EUR 60 million in 2014 prices.
4. The Memorandum of Understanding will take effect on being accepted by at least five Parties.
5. The Memorandum of Understanding will remain in force for a period of 4 years, calculated from the date of the first meeting of the Management Committee, unless the duration of the Action is modified according to the provisions of Section 2. *Changes to a COST Action* in the document COST 4114/13.

A. ABSTRACT AND KEYWORDS

Oral language (speaking and understanding) is critical to children's development, affecting the emergence of personal, social and academic skills throughout school and into the workplace. Most children acquire such skills effortlessly but a sizeable proportion, those with Language Impairment (LI), do not. LI affects 5.8 million children and young people (0-18 years) across Europe. There is evidence for the efficacy and effectiveness of intervention to improve the language skills of these children but this information is not well disseminated and services are inconsistent across Europe. This Action will enhance the science in the field, improve the effectiveness of services for children with LI and develop a sustainable network of researchers well placed to answer the key questions in this area.

The Action will have 3 Working Groups comprising established and Early Stage Researchers and practitioners:

1. The linguistic and psychological underpinnings of interventions for LI;
2. The delivery of interventions for LI;
3. The social and cultural context of intervention for children with LI.

This activity has never been attempted before despite there being services for these children in all European countries. The COST framework is the ideal mechanism for catalysing activity to promote research collaboration and produce to high quality outputs.

Keywords: Child language, Language impairment (LI, Intervention approaches, Psychological underpinnings for interventions for LI, Linguistic underpinnings for interventions for LI Delivery of services for LI, Social and cultural context of interventions for LI

B. BACKGROUND

B.1 General background

A substantial proportion of children and young people grow up with poor oral language skills, such children, often described as being language impaired (LI), start speaking later than other children of the same age. The gap between them and their peers commonly widens as they grow older and is also apparent as they struggle to learn to read and to engage in social relationships (Conti-Ramsden and Durkin 2008; Nippold et al. 2009). Children with LI have difficulty processing spoken and

written language, presenting with a variety of specific language problems in the domains of the lexicon, phonology, syntax, morphology and sometimes affecting pragmatic language skills and wider communication skills. Some children have expressive language difficulties; others also have difficulties understanding spoken language. Without appropriate and timely interventions, the implications for adult literacy, mental health and employment outcomes can be considerable (Law et al. 2009). In recent years, LI has been identified as a major determinant of social inequality (Field 2010). Furthermore, having a LI makes individuals especially at risk in an increasingly white collar workforce in Europe where communication skills are a core requirement of most jobs (Ruben 2000).

The number of children under eighteen years with LI is potentially as high as 5.8 million children, http://epp.eurostat.ec.europa.eu/statistics_explained/index.php/Fertility_statistics based on best estimates of prevalence of LI in children (Tomblin et al., 1997). The evidence base underpinning interventions has expanded considerably in recent years (Lindsay et al., 2010) but remains patchy and lacks international and cross-cultural comparison studies. Research traditions and the interpretation of evidence vary considerably across Europe. This has led to concerns, expressed in the RICHE FP7 project and by the World Health Organisation, that misdiagnosis and mismanagement of infant and child neuro-developmental disorders (which would include LI) is widespread in many European countries. The report concluded that this is caused by a lack of evidence-based clinical guidelines, non-adherence to those that do exist, and out-of-date training for health professionals.

Finally, the field is characterised by disparities in the empirical traditions and research specialisms of those who work with children with LI, reflected in the professional groups involved. For example, in Germany these include Logopädinnen, speech and language therapists, pedagogues for special education, clinical linguists and patho-linguists. In Iceland there are *talkennarar* (speech teachers) and *talmeinafræðingar* (speech-language pathologists). Denmark has a long history of *talepædagoger* (speech pedagogues) providing assessment and intervention of preschool children. There are also differences in basic qualifications for qualified practitioners (Diploma, BA, BSc, MA, and MSc), continuing education requirements and mechanisms of access to new research. Other relevant professional groups include cognate disciplines such as psychology and linguistics and medical specialities (e.g., Paediatrics; Ear, Nose and Throat Specialists; Occupational and Physical Therapy and Psychiatry) for whom the child's communication skills are part of a wider set of symptoms.

The COST mechanism is well suited to widening common understanding of the subject and pointing towards a more consistent evidence model of service delivery and, with it, a *lingua franca*

for people in the relevant professions. This is especially relevant with the increasing cross border mobility of both children and their families and the professional who meet their needs. There is considerable existing evidence for the effect of language therapy and a number of related projects are underway across Europe. This Action will consolidate and disseminate what is already known and steer the direction of future research and evidence based practice in the field. The cross national and interdisciplinary nature of the interested parties in this field lends itself to the aims of COST. The application has included active engagement from fifteen COST countries, at least three different professional groups (including practitioners) and three other international contributors (in Australia, the US and Canada). Three ESRs were involved in the development of the application.

B.2 Current state of knowledge

There are a number of, potentially interacting, causes of LI. There is evidence that heredity is a feature for many children (Hayiou-Thomas et al. 2012; Kovas et al. 2005), this being especially true for expressive language skills and becoming more prominent as the children get older. Equally the environment in which the children are raised plays an important role for many. In their seminal study of early language development Hart and Risley (1995) showed that the language experienced by young children varies considerably by social group, with number of words directed towards a child over a given year ranging from 11 million in the “professional” families to 3 million in a “welfare” family. Although such findings have been replicated in a number of studies (Hoff, 2003; 2006; Roulstone et al., 2010; Miser & Hupp, 2012) this does not necessarily mean that differences in input cause LI. Many children from more advantaged backgrounds can also experience such difficulties despite adequate stimulation. Other factors are also likely to play a part. For example, in every study of children referred to services for LI there are always more boys than girls (Berglund et al., 2005; Zambrana et al., 2012). Although the aetiology of LI may be multifactorial it is clear that early experiences combine with limited early language skills and remain risk factors for poor literacy, mental health and employment prospects in adulthood (Law et al., 2009).

Given the risk of poor outcomes identified above, considerable interest has been expressed about effective interventions that can potentially mitigate these risks. While some interventions aim to ameliorate the environment with outcomes not confined to language, others focus on the individual child’s language skills. A number of systematic reviews (Law et al., 2003; Cirrin & Gillam, 2008; Boyle et al., 2010; Schooling et al., 2010) point to positive outcomes from randomised controlled studies. However, barriers to the implementation of conclusions from such reviews are legion (McCurtin & Roddam, 2012). In part this reflects the fact that such interventions are inherently

complex in terms of what they entail as far as the context in which they are delivered and the degree of flexibility permitted (Craig et al., 2008). Systematic reviews need to be seen within the context of practitioner expertise (Marshall et al., 2011) and may not be translated into workable clinical guidelines especially across countries. Research traditions, the use of evidence to support the adoption of interventions, differences in emphases depending on languages spoken, educational settings and the cultural, structural and theoretical underpinnings of the work of practitioners in different countries result in considerable variations across Europe. And, finally, there are differences in the way that services are organised, delivered and funded. For example, in the UK there are services for children with LI (both Speech and Language Therapy and Educational) across the country, whereas in Croatia Speech and Language Therapy services do not provide special intervention programmes for children with language impairments and there is no consistency in intervention procedures during preschool and school education (Kuvac Kraljevic, in press). Gaining a better understanding of this variability and the philosophy underpinning the use of evidence will be a feature of this Action. The Action can also help in establishing a research tradition in countries where there was none. Further details on current knowledge are provided under each of the Working Groups (WGs) below (Section ID).

Innovation of the proposed COST

LI is a comparatively novel field of research enquiry which includes a number of different domains, such as the psychological underpinnings of LI, diagnostics, definitions and long term outcomes. Less attention has been paid to the focus of the present Action, namely how services in particular, and society in general, respond to the needs of children with LI and how outcomes for this group of children can be improved. The Action will explicitly create these links both between researchers and between researchers and practitioners, drawing together the different areas of expertise across different countries and informing future developments in the field. Relatively little of this type of collaborative endeavour has been attempted hitherto. Further detail on the innovative dimension of each WG is provided below (Section ID2).

B.3 Reasons for the Action

The main reasons for launching the Action are threefold.

- To provide the most effective services for children with LI;
- To guard against inefficient use of resources arising from the introduction of interventions for which there is no scientific merit;

- To reduce undesirable variation in service delivery across countries.

There is a need to raise awareness of the needs of children and what can be done to meet those needs amongst professionals, families and those commissioning services. The Action is relevant at both an economic/societal level and a scientific/technological level. At a societal level it will encourage the application of evidence to decision-making around intervention. In the long run the Action will lead to more coherent services and better provision for the children concerned thus enabling them to be effective contributors to society. At a scientific level the Action will increase understanding of the theoretical underpinnings to LI and the implications that they have for intervention methodology. The Action is underpinned by the assumption that societal and technical issues are best addressed by fusing the expertise of researchers and practitioners. Finally, the Action will play an active role in directing future research efforts (and especially intervention trials) related to LI in Europe.

B.4 Complementarity with other research programmes

The Action has potential synergy with a number of EU funded projects. Links will be explored with five ongoing FP7 projects and two other EU projects namely:-

LANGCOGINT - The interface between language and cognition in neurodevelopmental disorders: Evidence from cross-linguistic comparisons End Date: 2015-09-08

TUNINGLANG - Tuning Attention during Language Learning End Date: 2018-02-28

DEV LANG COMPRHNSN - Development of spoken language comprehension processes in a verb-final language: Incremental interpretation of case marking cues in Turkish speaking children End Date: 2015-09-30

MOTHERTONGUE - The Evolution of Human Languages End Date: 2016-04-30

UNDER CONTROL - Mechanisms of cognitive control and language learning End Date: 2018-08-31

PAE-ERLD; Prerequisites of academic equality: early recognition of language disorder (is funded by European Programme the Instrument for Pre-Accession Assistance (IPA). End date: 2015-02-22.

MULTSLI- Multilingual Children with SLI: Bridging the Gap between Theory and Practice, and between Practitioners in Different Countries - LLP/GRU/MT/LP/49/2013 - End date: June 2015.

One Horizon 2020 proposal Assessing Screening of Children's Early Neuro-Development in Europe (ASCEND-EU which has progressed to the second round of the Horizon 2020 process will be of direct relevance given its focus on neurodevelopmental disability.

C. OBJECTIVES AND BENEFITS

C.1 Aim

The main objectives of the Action are to increase the effectiveness of interventions for children with Language Impairment and improve understanding of the context in which those interventions are delivered.

C.2 Objectives

The secondary objectives of the Action are to:

1. Create a coherent understanding of the population “in need” of intervention and develop standardised terminology;
2. Identify the best evidence based practice related to LI, drawing on both available literature and the expertise of Action members to seek consensus about its implementation, theoretical differences in causal models, the empirical methods employed to evaluate intervention effectiveness and the ways in which successful intervention is defined. Members of the Action will then collaborate to develop the evidence base further.
3. Map provision for children and young people with LI across Europe and place the intervention evidence within the health, education and social care policy landscape in different countries in Europe and beyond. With increasing mobility across borders (both of the children who access services for LI and the practitioners who provide them) harmonisation of intervention approaches, in line with theory and the evidence base. It is ever more important for child development;
4. Facilitate and organise the training of ESRs.

C.3 How networking within the Action will yield the objectives?

Action networking will bridge inter-disciplinary gaps, promoting the cross-fertilisation of ideas across different theoretical and practice boundaries. In doing so it will actively engage with practitioners who commonly lack routine access to research communities (e.g. McHugh & Byrne 2014). One of the key means of meeting the Action objectives will be the Action website. This will support the work of the Action, act as a means of facilitating engagement with the wider community and be a vehicle for disseminating the Action outputs. Website activity will be monitored against

Action objectives. The networks will develop over the course of the Action and the impact of the network will increase over time. In terms of the specific objectives:-

Objective 1 will be met through the work of all three WGs. By way of illustration, a special edition of the International Journal of Language and Communication Disorders (July 2014) advocates an international collaboration to agree on terminology for practice and research related to specific language impairment (a label used for a subgroup of children with LI). The Action would be well placed to take this forward. Key to this process of the development of collaboration over the Action will be a series of Training Schools (TS). These will be timed to coincide with the MC meetings as far as possible and the subject matter will be agreed as the Action develops. In the first instance the Action would include more general evidence focused TS for examples with titles such as "Recent directions in intervention science" and "Combining theory and practice and their implications for service delivery". But individual members of the Action have proposed more specific TS for example "The application of dynamic assessment to the assessment of the LI child across Europe" and "Comparing interventions for children with LI from language backgrounds that are more or less morphologically rich". Each WG will contribute to each TS to enhance the integration of the Action. The Training Schools will explicitly aim at including a combination of researchers, practitioners and ESRs and would be at least three days in duration.

Objective 2 will be met by the members of the MC and the WGs identifying relevant interventions according to agreed criteria and, where appropriate, completing systematic reviews to fill gaps in the evidence base. This will be a focus of the TS. STSMs will be created to allow ESRs to visit centres developing the evidence underpinning interventions. Objective 2 will also be realised through developing practice guidelines for the management of LI. This will be delivered country by country rather than a single document covering all countries represented in the Action.

Objective 3 will be achieved by strong input from members of the Action on provision of services and context specific issues (eg. migration) relevant to different countries. The outputs from Objective 3 will be discussed and the interpretation contextualised for different countries in the Action Training Schools.

Objective 4 The MC and the WGs will include a growing number of ESRs over the course of the Action. ESRs will be included as deputy chairs of each of the WGs and be encouraged to engage actively in all the projects identified by the WGs. They will potentially play a key role in describing current practice and delivery models across the Action. Senior researchers (preferably from countries other than those in which the ESR is based) will provide mentorship to ESRs. Workshops will be located across Europe to maximise geographical engagement especially for ESRs.

C.4 Potential impact of the Action

Research

- Enhance collaboration both between researchers and between researchers and practitioners both within and between countries;
- Create new knowledge about intervention effectiveness and its application across different cultures;
- Lead to collaborative research proposals arising out of the Action.

Practice

- Lead to be evidence base policy in the provision for children with LI both in Europe and in individual countries;
- Provide a better understanding of efficacy research and dissemination of the best available science;
- Increase understanding of how services vary across Europe and the role context plays in the development of services;
- Draft guidelines on the most appropriate interventions for children at different ages and with different types of LI;
- Promote delivery of effective interventions.

Policy

- Provide the opportunity for engagement with researchers and practitioners with a focus on LI;
- Provide the potential for discussing the implications of LI at a national level with researchers and practitioners;

- Increase awareness of the importance of early language development and LI in particular, using awareness raising campaigns which could be modelled on existing examples and policy briefings.

Parents and children

- Give parents with an interest in LI the opportunity to engage with researchers and practitioners through the Action;
- Raise expectations of the evidence underpinning interventions that children receive;
- Encourage parents to influence the Editorial Board in the development of parent specific materials.

C.5 Target groups/end users

Research

This includes researchers from the field of Speech and Language Therapy, other related practitioner fields (Allied Health Professions, Medicine, Education etc.) and related cognate disciplines (Linguistics, Psychology etc) who make a major contribution to the development of theory in the area.

Practice

This includes Speech and Language Therapists, Logopedists and the range of professionals who work with children with LI across Europe. International professional groups have been contacted prior to the submission of this proposal. **Policy**

The Action will identify and engage with relevant national and European policy making bodies. Relevant outputs will be presented as guidelines for policy makers and service providers

Parents and children

The Action's findings will be of interest to parents of children with LI and potentially the young people themselves, increasing understanding and helping them lobby for resources. These can be contacted through national charitable organisations which work on behalf of parents and are effectively "patient groups".

D. SCIENTIFIC PROGRAMME

D.1 Scientific focus

The focus of the Action is on the theoretical mechanisms underpinning LI, the empirical basis upon which intervention is based and the context in which intervention for LI is delivered.

Key research tasks to be coordinated through the Action are:

- To synthesise and disseminate knowledge about the provision of services for children with LI across Europe and evidence regarding intervention for LI by developing a map of practice and practice guidelines;
- To better understand the context in which services are developed and interventions delivered for this group of children;
- To develop interventions and ultimately trial them across Europe through a sustainable multi-disciplinary networks (including ESRs), who will drive the development of relevant outputs both during the Action and into the future.

D.2 Scientific work plan methods and means

The scientific programme will be based primarily on the aims of the three Working Groups (WG). Thus Training Schools and STSMs will be framed by the aims of these three groups.

WG 1 The linguistic, psychological and educational underpinning of interventions for LI;

WG 2 The delivery of intervention for LI across childhood (0-18 years);

WG 3 The social and cultural context of intervention for LI.

The aims and objectives of the Working Groups are related to one another and will run in parallel rather than in sequence.

WG1 The linguistic and psychological underpinning of interventions for LI.

Objectives: This WG will identify the respective contributions of language knowledge and skills, working-memory and other relevant cognitive (for example meta-cognition) and wider processing skills (attention and executive functioning) to intervention for children LI. It will relate theories of underlying learning mechanisms associated with LI to specific intervention practices.

Current knowledge: Interventions for LI vary along a number of dimensions depending upon the theoretical assumptions of those who design them.

These include:

- a focus on linguistic forms (Ebbels, 2007, 2008) versus underlying processing mechanisms (Gillam et al., 2008; Holmes, Gathercole, & Dunning, 2009);
- the promotion of explicit (Ebbels, 2007, 2008) versus implicit learning (Fey, Long, Lizbeth, & Finestack, 2003; Riches, 2013);
- the use of extrinsic rewards (Godfrey, Pring, & Gascoigne, 2005) versus facilitative interactions which are intrinsically rewarding (Baxendale & Hesketh, 2003; Fey et al., 2003);
- memory training (Holmes et al., 2009; Roberts et al., 2011) versus improving long-term knowledge (Beck, McKeown, & Kucan, 2002);
- rule learning (Ebbels, 2007, 2008; Godfrey et al., 2005) versus pattern-finding and rule-abstraction (McKean, Pert, & Stow, 2013; Riches, 2013).

The choice of intervention is also likely to be influenced by what is understood about the underlying causes. For example, the degree to which the impairment is thought to be environmentally or genetically driven (Schwartz, 2009) may influence the choice of dimension. Hence those with a focus on environmental influences may be more likely to focus on creating language rich environments within which children may implicitly learn language, than to explicitly teach specific linguistic forms. The choice between extrinsic versus intrinsic rewards, may be informed by behaviourist theory (Skinner, 1957) versus social-interactionist theories of language acquisition and learning (Bruner, 1975).

Innovation: Cross-linguistic and cross-cultural comparisons of these intervention choices have never been made. Across languages, the manifestation of LI appears to differ somewhat, likely as result of the interaction between the underlying causal mechanisms of LI and the grammatical structure of the language being learned. For example, LI presents differently in morphologically sparse languages such as English (Leonard, 2009) relative to morphologically rich languages such as Icelandic, French and Spanish (Thordardottir, 2008; Thordardottir & Namazi, 2007; Leonard, 2009). Areas of relative strength in one language may be areas of relative difficulty in another, and vice versa (e.g. Noun versus verb morphology in English and Turkish and Icelandic (Topbas & Mavis, in press; Elin Thordardottir, 2008)). Cross-linguistic comparisons present an opportunity to

develop and explore more integrated developmental, emergent models of LI wherein linguistic deficits emerge as a result of processing impairments perturbing the development of linguistic constructions (Joanisse, 2004; Joanisse & Seidenberg, 2003; Thomas & Karmiloff-Smith, 2002), as well as neuro-scientific models of LI (Ullman & Pierpont, 2005). The Action will provide a unique opportunity to interrogate current best evidence with respect to the above issues, uncovering both diversity and commonalities in intervention approaches. Where diversity is identified, the potential for the introduction of the more robustly evaluated interventions will be explored and theoretical implications of differential effectiveness of approaches cross-linguistically considered. Where commonalities are found, hypotheses may be derived for future research regarding the “active ingredients” of effective interventions.

Workplan for WG1:

- survey current intervention practices for children with LI across Europe (informed by WG2 & WG3 with respect to the professional groups to be consulted in each participating country);
- identify and appraise the evidence and theoretical understanding (linguistic, psychological, and neuro-scientific) upon which these practices are based;
- publish summaries of these approaches, with appraisal of the level of supporting evidence, on an interactive practitioner website;
- publish guidance on how approaches might (or might not) be applied to languages other than those in which they have been developed;
- develop priorities and proposals for future research through:
 - the identification of gaps in the evidence regarding the aetiology of LI supported cross-linguistically;
 - the development of hypotheses regarding the “active ingredients” of effective interventions which can be applied cross-linguistically.

WG2 The delivery of intervention for children with language impairment across childhood.

Objectives: This WG will address the implications of identifying and treating children at different ages across the different countries.

What the group will achieve: The focus of this work package will be a review of literature on evidence based choices in service delivery models (eg individual vs group therapy, direct vs indirect therapy, intervention provided in mainstream and special schools etc., levels of intervention on a continuum of responsiveness to intervention; the choice of static versus dynamic assessment; and an exploration of the role of Information and Communication Technology (ICT) in service delivery. This WG will also cover the role of socio-demographic, geographic and linguistic factors affecting service delivery. The output from WG2 will be connected to that of WG1 but will be more focussed on practice and policy recommendations targeting practitioners and service commissioners.

Current knowledge: As outlined in WG1 above, interventions may be classified on the basis of underlying theories and principles, including, for example, interventions foregrounding social-interactionism theories of language development versus interventions prioritising explicit teaching of language rules and structures. These differences also affect how specific forms of intervention are delivered, including whether the therapist/logopaedist/interventionist works directly with the child or indirectly through the child's parents or other professionals such as teachers, preschool leaders/early childhood workers. In many cases a hybrid approach may be adopted, whereby the child receives direct therapy from the key person (e.g. Speech and Language Therapist) alongside indirect work involving parents and/or others. The language intervention programme may also be delivered on an individual basis or in a group (where the child receives language intervention in a group with other children). Currently available systematic reviews report mixed findings with regard the relative effectiveness of group versus individual therapy (Reilly, 2012).

Differences in emphasis relate to where, on a continuum of 'naturalness', the intervention is situated (from explicit clinician or adult directed teaching of language in a classroom or clinic setting to incidental child centred learning involving modelling in the most naturalistic environment, Paul & Norbury, 2012). Hence, clinician directed approaches are more likely to be delivered through pull-out models, where the child leaves their classroom/home setting to access individual or group-based therapist directed intervention. The relative roles of practitioner versus other means of service delivery and the location in which the intervention is delivered have been the subject of research but such issues have never been considered across Europe (McCartney & Ellis, 2009).

A growing area of practice and research activity is the incorporation of ICT as either a medium of delivery of therapy, as an adjunct to direct therapy or a form of indirect therapy (for example Cohen et al., 2005; Bishop and Adams, 2005; Smeets & Bus, 2012; Washington and Warr-Leeper, 2011;

Rvachew <http://www.medicine.mcgill.ca/srvachew/>). Tools and approaches used in the identifying and assessing language development levels and needs of children referred for assessment and intervention are a concern (De Villiers, 2003; Desforges & Lindsay, 2010) with differences around for example use of static once-off standardised versus dynamic assessments (Hasson & Camilleri, 2013; Law & Camilleri, 2007).

Innovation: Mapping the use of practice or the theoretical underpinnings of interventions is a task that has never been carried out across Europe or indeed in any country in Europe. This is a key stage in the engagement of the enterprise of the Action. Engagement of practitioners as partners in the evidence design process, except as data collectors, is a relatively new concept in this field.

Workplan for WG2:

- Survey and collate data on models of intervention provided across the partner countries' national research with respect to:
- A comparison of classroom based versus pull-out models of intervention;
- The use of direct clinician/other directed approaches versus indirect therapy where the clinician trains and informs others on approach;
- The relative roles of inclusion and segregation as models of service delivery;
- The delivery of therapy on a one-to-one, small group or large group basis;
- Synthesise the findings on models on a continuum from group to individual and direct versus indirect therapy from the empirical literature and policy documents relating to speech and language intervention with children with language impairment identify interventions and modes of delivery via ICT, the evidence base and research gaps relating to this area.

The outputs of this group will include tables synthesising models in use across countries, the evidence base supporting these and proposals for change.

WG3 The social and cultural context of intervention for children with language impairment

Objectives: This WG will address the impact of the institutional (physical, managerial) and cultural (demographics, ethnicity, migration, changing family structures) context on intervention. This will

include shifting demographics, migration, changing family structures etc. on the development of practice with regard to LI. It will also consider the role played by teacher and parental understanding of child development and child rearing on service delivery. WG3 will address the issue of the impact of the age and gender balance across those involved in language intervention and whether this has an influence on consistency of and continuity of service. Finally, WG3 will examine the implications of cultural competency for workforce development.

Current knowledge: Culture can be defined as a set of values and belief systems that shape the behaviour of individuals (Roceberry-McKibbin, 2007) and is a dynamic and ever changing process subject to a number of drivers (age, gender, ethnicity, religion etc.). In Germany 50% of the students in a school of about 200 children, come from more than 15 nationalities with about 20 different home languages (Gogolin, 2002). Some children count in Turkish, some greet in Italian, others know Portuguese tongue-twisters or Polish ‘selecting rhymes’, and some swear in many languages (ibid: p.8). Similarly, in Istanbul, in Turkey, one may find many children who speak Kurdish, Arabic, Zaza, Armenian, Anatolian Greek (Romaic), Ladino, various Balkan languages, Caucasian, Laz, Circassian, various Turkic languages, Hebrew, or a few others as their first language (Konda, 2006). Such diversity will have inevitable consequences for the study of language in general but LI in particular. Yet the implications of this diversity for provision of intervention for children with LI has only recently started to be better understood. For example the American Speech and Hearing Association (ASHA 2011) has only relatively recently adopted a position which states that “professional competence in providing speech-language-hearing and related services requires cultural competence (para.1).” Cultural competence is described as knowledge, understanding, and appreciation of a variety of cultural and linguistic factors that may influence service delivery (ASHA, 2011 but see also the guidance from the International Association of Logopedics and Phoniatics, Fredman, 2006). Yet there is no such guidance specifically relating to the needs of children with LI in the EU (NetQues, 2013). Cultures vary in their child rearing practices relevant to communication and language development (Roceberry-McKibbin, 2007). Similarly the understanding of LI and the role that parents and professionals can play in addressing it varies considerably from one country to another, driven by cultural and religious understandings of child development (TopbaE, 2006). This variation may influence what is achievable in practice.

Innovation:

The WG output will be innovative in raising awareness of the specific cultural issues influencing practice and service delivery. This will be the first time that this has been addressed across a number of countries simultaneously. Enhancing the cultural competence of the range of professionals likely to be involved in intervention will make a major contribution to future services

for children with LI and their families.

Workplan for WG3:

The output from WG3 will be a document mapping services for children with LI across Europe.

- Survey of the current situation for children with LI across Europe (with respect to the professional groups to be consulted in each participating country) and a review of literature regarding the evidence of diversity in each participating country;
- Publish summaries of the outcomes, together with appraisal of the level of supporting evidence, on the Action website;
- Publish guidance for service providers and service recipients;
- Analyse and identify the nature and degree of commonalities amongst and diversity in services.

From the above, develop priorities and proposals for future research.

E. ORGANISATION

E.1 Coordination and organisation

Some members of the MC (Chair, Vice-Chair, Chairs of the three WGs and the STSM co-ordinator) will form the Core Group. Four members of the MC plus 2 ESRs will comprise an Editorial Board to monitor output from the Action. This will not just mean peer reviewed publications but also a series of other publications from the Action such as briefings or “snap shots”, that is, short outputs from the Action to be distributed across countries involved in the Action. These will initially be in English but, where feasible, will be translated by members of the group into national languages. This will widen the dissemination of messages from the Action into the practitioner base across the countries covered by the Action. The Editorial Board will also oversee the development of the final publications arising out of the Action. There will be a Training Committee to oversee the work of the ESRs, STSMs and Training Schools. There will be three Working Groups (WG) as discussed above. It is anticipated that practitioners will have an interest in the specific WGs. Accordingly, at least two practitioners will be recruited to each WG. Each WG will also aim to recruit two ESRs

into their organisational structure, one of whom will act as a Vice-Chair of the WG. Finally, the Action will identify a Dissemination Champion for each country involved in the Action to identify the most appropriate dissemination routes for the countries concerned and to help organise local meetings and feed into the Training Schools (TS). This role will play an integral role in understanding the context for implementing the outputs of the Action by exploiting their local knowledge. Throughout the structure for the Action the Core Group will monitor gender balance. The organisation will be facilitated by regular Skype meetings of the Core Group and the use of the A website as a vehicle for communications across Action membership. This will function at an operational level through the closed part of the site with a wider intellectual discussion anticipated to arise through the more open aspects of the site and the social media associated with the Action.

E.2 Working Groups

The three WGs detailed above will each meet twice a year across the course of the Action. In each case WG meetings will be timed to coincide with MC meetings to reduce travel costs. The membership of each WG will also interact at regular intervals between meetings on Skype. The Action will also exploit key international conferences where Action members commonly gather.

E.3 Liaison and interaction with other research programmes

This Action will build on 2 earlier Actions but is very different in emphasising intervention and service development. Action A33 (ended in 2010) resulted in the identification of robust markers for Specific Language Impairment (SLI) of linguistic development across languages. SLI is a subcategory of LI targeted in this Action. The Action produced experimental test procedures but they were not supplemented by normative data and thus are not ready for clinical use. Thus Action A33 was relevant for, but not directly related to practice. Action IS0804, completed in 2013, focused on the assessment and diagnosis of LI in bilingual children but not on intervention. While it is clear that a substantial majority of many populations in Europe are at least bilingual and increasing the number of multilingual citizens is a goal of European Union: <http://www.europarl.europa.eu/aboutparliament/en/007e69770f/Multilingualism.html> the focus of the present Action is not multilingualism as such. Nevertheless as our discussion of WG 3 above indicates, multilingualism is an important factor in the management of the child with LI (in terms of medium of intervention and the way that interventions are characterised etc).

The Action, while not interacting directly with the earlier completed Actions will seek both to

enhance the dissemination of these earlier Actions and benefit from them. This sense of progression will be facilitated by the existing overlap in the MC membership of the present Action with the MCs of its two predecessors.

The Action will also potentially be able to interact with two recently approved COST Actions (e.g. IS1208 Collaboration of Aphasia Trialist - CATs and IS1401 Strengthening Europeans' capabilities by establishing the European literacy network - technology for enhancing reading and writing that will be developed in this Action can be useful for children with LI during their education. The former is particularly relevant to the present Action in its focus on intervention, albeit with a different interest group. The FP7 projects highlighted above have the potential to link into the present Action. In the set up phase of the Action the leaders of these projects will be contacted to ask if members are interested in contributing to the Action. If synergies are identified we will seek to involve members of these other Actions in Training Schools and other activities, for example by having them as invited speakers. The Action will also explore the potential for STSMs with these two others Actions. The former is focussed on intervention trials and there may be synergies, for example with the theoretical underpinnings of intervention (WG1) and in the way that cultural factors affect the way that interventions are delivered (WG3). The latter is focused on literacy rather than oral language but again there may be overlap in developing research methodologies which capture the impact of the variety of contexts in which interventions are delivered across countries (WG2 and 3). There may also be opportunities for joint Training Schools across the Actions.

E.4 Gender balance and involvement of early-stage researchers

This COST Action will respect an appropriate gender balance in all its activities and the Management Committee will place this as a standard item on all its MC agendas. The Action will also be committed to considerably involve Early Stage Researchers. This item will also be placed as a standard item on all MC agendas.

Ninety five percent of Speech and Language Therapists (Boyd & Hewlett, 2001) and most health and child care workers who are likely to have contact with children with LI are female. This is reflected in the proportions of those involved in developing the Action. Higher education programmes educating Speech and Language Therapists and related professions recruit relatively few male students which means that increasing the engagement of males may not simply be a matter of raising awareness in the professions as such. Nevertheless there are male Speech and Language Therapists and Teachers working with children with LI and the gender imbalance will be addressed as far as is practicable, promoting inclusion of males in delivering the aims and

objectives of the Action.

One of the features of the Action is that the target group (children with LI) includes a disproportionate number of males to females of the order of 3:1. This applies to most populations of children referred with neuro-developmental difficulties although it does not tend to be the case when community populations are assessed – i.e. when they are not referred. It is unclear whether this is true across the countries represented by the Action members. This would be a feature of the Action as part of the survey of practice, both exploring whether this is a common phenomenon across the countries and, if so, what explanations are accepted for this phenomenon and whether there is more that needs to be done to address this issue.

The Action will aim to identify all researchers to be involved in the Action, including practitioners and others approaching academics and practitioners for supervision. The Action will particularly favour doctoral students and ESRs with a clinical training such as Speech and Language Therapists. There is currently no European forum which meets their networking needs.

F. TIMETABLE

	Year 1				Year 2				Year 3				Year 4			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
ACTION Meetings																
Set up meeting	x															
MC	x		x		x		x		x		x		x		x	
WG1	x		x		x		x		x		x		x		x	
WG2	x		x		x		x		x		x		x		X	
WG3	x		x		x		x		x		x		x		X	
EB			x				x				x				x	
TC	x		x				x				x				x	
APC					x				x				x			
TS				x				x					x			
Final conference																x
Final reports submitted																x
Final Assessment																x
ACTION outputs																
Website set up	x															
Dissemination Champions identified	x															
Professional or organisations contacted	x															
Practice survey sent out		x														

International links contacted		x														
Summaries of key intervention approaches published		x		x		x		x								
Practice survey returned			x													
Practice survey analysed					x											
STSMs start			x													
Policy makers contacted		x														
Communication and Impact Strategy				x												
Models tables complete								x								
Service map completed									x							
Snapshots				x		x		x		x		x		x		x
Papers submitted				x			x		x			x				
Collaborative research bids											x		x			x
<p>Key:</p> <p>MC = Management Committee</p> <p>WG = Working Group</p> <p>EB = Editorial Board</p> <p>TC = Training Committee</p>																

TS = Training School

APC = Action Progress Conference

G. ECONOMIC DIMENSION

The following COST countries have actively participated in the preparation of the Action or otherwise indicated their interest: DE, DK, FI, HR, IE, IL, IS, LT, MT, NL, NO, PL, SK, TR, UK. On the basis of national estimates, the economic dimension of the activities to be carried out under the Action has been estimated at 60 Million € for the total duration of the Action. This estimate is valid under the assumption that all the countries mentioned above but no other countries will participate in the Action. Any departure from this will change the total cost accordingly.

H. DISSEMINATION PLAN

H.1 Who?

- Researchers (Speech and Language Therapists, Psychologists, Linguists and health professionals with a specific interest in language), aiming to maximise the involvement of practice based researchers with direct experience of LI;
- Practitioners (Speech and Language Therapists, Teachers, Early Years Practitioners, Pedagogues etc). This would also include charitable organisations such as the UK's Communication Trust and professional organisations at a national and European level (CPLOL);
- Policy makers (at a European, national and local level including those responsible for commissioning services such as those within an educational or health system and those responsible for insurance contracts);
- Parents and children (through national charities and other sources).

H.2 What?

- The Action will disseminate the findings of the Action through a variety of different routes including: a series of high impact publications in national media (The Conversation, national newspapers and broadcast media, etc) and others as follows.

Researchers

- Conferences presentations at key international symposia especially the biennial meetings of the International Association for Child Language Research and CPLOL. Related COST Action outputs from earlier Actions have been well represented at these meetings;
- At least four joint peer reviewed open access publications and conference presentations;
- Final conference for about 200 researchers, practitioners and parents;
- A co-authored book by Action members summarising the current position in Europe and beyond; pointing to future directions for research into practice and policy. As part of the Action the Ernst Strungmann Forum will be contacted to help develop such a publication;
- Members of the Action will work together to develop research proposals targeting European funding (e.g. the EU's Horizon 2020 programme) based on the Action outcomes.

Professionals

- Dissemination to practitioners will be through the relevant country specific "trade" journals such as, e.g., Frühförderunginterdisziplinär, Forum Logopädie and Praxis Sprache, Zeitschrift für Sprachförderung und Sprachtherapie (Germany), Revista de Investigacion en logopedia (Spain), Journal of Clinical Speech and Language Sciences (Ireland), L'Orthophoniste (France), Logografia (Greece), Talfræðingurinn (Iceland), Logopedie en Foniatrie (the Netherlands), Logopedia, Forum Logopedyczne (Poland), Dansk Audiologopedi, Foreningen for tale-hørelærere i Folkeskolen (Denmark) and Language Speech and Hearing Services in Schools (US and international). ESRs will be expected to be involved in writing at least half of these publications;

- With help from the Dissemination Champions the Action will deliver meetings for practitioners to discuss issues arising out of the Action and to feed new ideas from practice into the Action. To widen access these will be delivered in different countries agreed with the MC. Each meeting will have an explicit policy for attracting the interest of both academic researchers and practitioners;
- A series of research snapshots summarising specific aspects of the work of the Action and reflecting aspects of the STSM and workshops will be produced. These snapshots will be available on the Action website and made available to practitioners.

Policy makers

- The MC will interact with policy makers to identify the most useful outputs informing policy. Policy makers will be included in the Training Schools and especially the annual conferences, either as keynote speakers but also involved in policy related seminars with the conferences;
- Policy makers (relevant ministry offices, NGO organisations etc. in COST countries) will be contacted specifically to raise awareness of LI and to encourage engagement in conferences, Working Groups and consider STSM links between practitioners, academics and policy centres.

Parents and children

- The Action will disseminate through appropriate channels to parents and children and young people, initially through snap shots of the research outputs as described above and, where possible, published in their native languages;
- Discussion with the Core Group, Management Committee, Training Committee and Editorial Board are likely to indicate more appropriate, up-to-date and meaningful ways of reaching the public as the Action develops.

H.3 How?

Dissemination will be monitored as a standing agenda item on Core Group, MC and Editorial Board

meetings with six monthly reports against the specified objectives of the Action. Each WG, Training School and STSM will be required to report back on their activity at the annual Action Progress Conference.

Dissemination will be central to the role of the Core Group and the Management Group from the outset of the Action. Academic audiences will be engaged for the traditional conference and peer reviewed publication route. Professionals working in the field will be engaged through members of the MC (many of whom are envisaged to be practitioners), identifying local Dissemination Champions, one for each country engaged in the Action. This individual will be expected to organise a meeting for local practitioners in the country concerned, to report on the Action and engage them in its goals. The MC member will identify the relevant national bodies and contact them directly to draw the Action to their attention. In the early stages of its development, the Action will develop a Communication and Impact Strategy.

One of the key features of the dissemination will be the Action website, Facebook and Twitter accounts. These will also facilitate the activities of the Action across the Action membership and the wider research, practice and policy community. The website will be separated into two sections: (1) The outward facing element of the Action that includes details of the Working Groups, their rationale, membership and achievements. It will also be a repository for final documents (reports, Snapshots etc.). The website will include links to the websites of the contributing members of the Action, with biographies and contact details. It will for, example, aim to link to existing practice based websites such as <http://www.taalexper.nl/> in the Netherlands and <https://www.thecommunicationtrust.org.uk/schools/what-works.aspx> in the UK and to the CPLOL, IALP and other relevant professional websites to enhance dissemination of the findings. Finally, an interactive element to the website, including a blog site to which Action members can contribute, a Twitter feed and Facebook site will bring the activity of the Action to life.

(2) A restricted section for use by Action members only, to post working documents related to the Action itself. All members will have equal (and exclusive) access to this element of the site, to share primary research literature, systematic reviews/databases, evidence based practice guidelines, professional competencies relating to childhood language impairment interventions as they exist in the partner countries. The website will be in English, but with a landing page in native languages. While the website will be critically important to the development and dissemination of the Action it is important to stress a recent finding reported in Nature that to spread behavioural change it is critical to focus on "real-world" networks (Bond et al., 2012) of the kind that will be developed through the Action.