



2004

Access to Academic English: the Development of a Meta- Linguistic Curriculum

Dawn Duffin

Follow this and additional works at: <http://arrow.dit.ie/itbj>

 Part of the [Higher Education Commons](#), and the [Special Education and Teaching Commons](#)

Recommended Citation

Duffin, Dawn (2004) "Access to Academic English: the Development of a Meta- Linguistic Curriculum," *The ITB Journal*: Vol. 5: Iss. 2, Article 8.

Available at: <http://arrow.dit.ie/itbj/vol5/iss2/8>

This Article is brought to you for free and open access by the Journals Published Through Arrow at ARROW@DIT. It has been accepted for inclusion in The ITB Journal by an authorized administrator of ARROW@DIT. For more information, please contact yvonne.desmond@dit.ie, arrow.admin@dit.ie, brian.widdis@dit.ie.



Access to Academic English: The Development of a Meta-Linguistic Curriculum

Dawn Duffin

Centre for Deaf Studies
CLCS
Trinity College Dublin

Abstract

One of the greatest barriers to the deaf student's continuing and further education is the accessing of course texts and research papers. A native ISL user will not necessarily have acquired fluency in accessing written information in English during the course of his or her previous educational experience. At university the deaf student cannot hope that more than a percentage of course materials will be translated into ISL onto video tape and so often loses insight into the chosen course normally gained through the range of reading of text required by third level study if her or she lacks skill in accessing written English.

My research is a response to this need for deaf students to be able to access academic text and takes a 'meta-linguistic' approach to reconciling the grammatical differences between English and ISL. I am developing a curriculum that 'bridges' the two languages by deconstructing the grammars of both under a Chomskian model of universal grammar. This paper gives examples of possible solutions to aid reconciliation of the grammatical differences of these languages from my prototype curriculum. The course components are presented as a series of easily learned tools, yet are underpinned by contemporary linguistic theory.

Introduction

One of the greatest barriers to the deaf student's continuing and further education in Ireland is the accessing of academic course texts and research papers. A native Irish Sign Language (ISL) user or a deaf person whose preferred language is ISL will not necessarily have acquired fluency in accessing written information in English during the course of his or her previous educational experience. As well as being hindered by a lack of knowledge about English the deaf student is very likely to lack confidence in his or her ability with the subject.

This paper will set the context and demonstrate the rationale for the need for the development of a curriculum that will allow deaf third level students to access academic English with greater efficacy. In addition to making reference to a number of disciplines this will

necessitate detailed explanation of the modality and grammatical differences that exist between English and Irish Sign Language (ISL). We will also need to examine some psycholinguistic processes in order to posit that a meta-linguistic approach is essential to the development of an effective curriculum. The curriculum will then be described from both theoretical and pragmatic perspectives with some examples from the prototype curriculum. Finally, assessment and ethical elements will be discussed before suggesting options for future development and application.

Language Acquisition and Education of Deaf Children and Adults.

The complexities and difficulties surrounding the language acquisition and education of deaf students have been discussed and documented extensively over the past thirty years. More recently the understanding of the theoretical implications of language acquisition of deaf children has produced evidence that has consequences for mainstream linguistics research (Emmorey 2002, Chamberlain, Mayberry and Morford. 2000, Duffin 1998, Duffin 1999, McDonnell and Saunders 1993) and so will be referred to rather than fully described again here due to space constraints.

Although deaf studies in Ireland (McDonnell 2004) is a relatively new and recent discipline it is now more generally understood that ninety percent of deaf children are born to hearing parents with either little or no ISL and some may never acquire a sign language unless they either attend a deaf school or have contact with deaf people. Some deaf students experience mainstream education and do not ever acquire a sign language unless they seek or make contact with the local deaf community. Deaf children of deaf parents/siblings are 'native' sign language users (ie those who acquire their first language from birth onwards and in a natural pattern of language development).

The Centre for Deaf Studies at Trinity College Dublin has now taken in its fourth year cohort of students and is committed to providing an ISL language environment for learning as well as supporting the development of maximal English reading skills.

The Centre for Deaf Studies offers courses in Deaf Studies, ISL Tutoring and ISL Interpreting and students are given the option of submitting assignments either in written English or as a signed ISL presentation. This means that deaf students do not have to demonstrate proficiency in English in order to demonstrate their knowledge. This fact along with the strict policy that language use in the Centre must be this ISL means that linguistic and educational equality exists for all students studying at the Centre.

It is sufficient for the purpose of this discussion to acknowledge that there is great diversity in both deaf people's language access and education access both in terms of methodologies and experiences and that this most frequently leads to deaf people not being able to achieve or demonstrate educational achievement concomitant with cognitive ability despite the advances in theoretical research over the past 30 years (Powers, Gregory and Thoughtenhoofd. 1998. Conrad 1979).

Context

At university the deaf student cannot hope that more than a very small percentage of course materials will be translated into ISL either onto video tape or onto a DVD and so she or he often loses much of the insight into the chosen course normally gained through the range of reading of text required by third level study if he or she lacks skill in accessing written English. It is this fact that has led me to research and develop alternative teaching and curriculum methodologies that will improve deaf students access to academic English from a perspective that will be both confidence building and empowering. I would like to thank the National Training and Development Institute and Trinity College for the support I have received in this endeavour over the past decade.

My research is now at the stage where I have developed a prototype curriculum and have received positive quantitative feedback from students who have completed it. I am now collecting data for the more difficult task of publishing the results of qualitative research study. Having set the historical context for my research I will now discuss the linguistic rationale on which the curriculum development has been based.

Modality and Grammatical Differences between English and ISL

Whilst many educators realise that English is difficult for deaf people to access, few appreciate that this difficulty arises from two related reasons; one of these is linguistic modality difference and the other is its relationship to language processing.

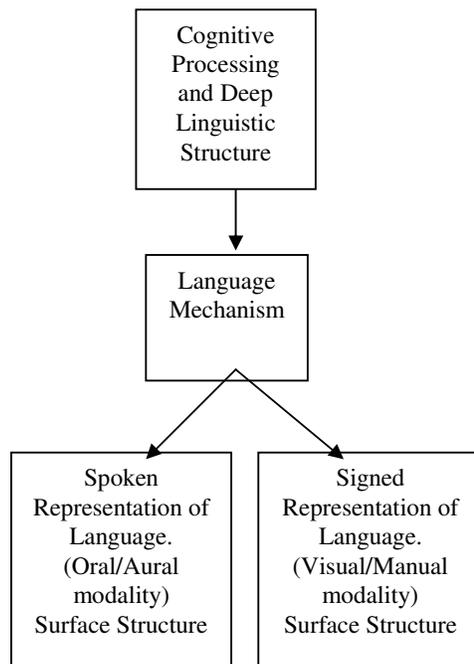
Deaf people have a natural pre-disposition to use visual processing rather than auditory processing, because they all have either a partial or total difficulty with accessing auditory input language.

We will now look at linguistic modality in order to appreciate the differences between signed and spoken language phonologies.

Linguistic Modality.

Linguistic modality is the term we used to describe the manner of our language performance. The majority of people assume (quite unconsciously) that the spoken form for language output and a heard form for language input forms *the* universal language model. By this I mean we believe the auditory channel is used for language access and delivery. We also make unconscious assumptions about the way language is processed at a cognitive level in terms of assuming that all processing is based on the fact that language performances makes use of an auditory channel (Duffin, 2004).

Models of language production and perception (Eysenck and Keane 2000), generally agree that there are non-verbal levels of processing that do not employ words or components of words as well as levels of processing where words and parts of words are employed. These processing levels apply when both encoding and decoding messages and are known as language production and language perception.



Representations of Language (Duffin 1998, p16)

It is also generally agreed that there is a level of processing that identifies semantic and pragmatic relationships. These levels of processing are interconnected and also draw on other types of cognitive information such as memory, perception and attention to allow

meaning to be attributed to communications. The following diagram describes this in the simplest terms in order to demonstrate that there is a deep processing structure as well as a surface processing structure.

In summary, the components of processing operate on a number of levels including the following:

1. Elements that are purely cognitive without any language like elements including items such as memory, attention and perception.
2. Elements within which language is being either constructed or deconstructed at a deeper level of language processing in terms of semantic relations, morphological relations and pragmatic relations.
3. Elements within which language is being either constructed or deconstructed at a surface or performance level in terms of phonemes and groups of phonemes.

From the late 1990's sign language linguists such as Diane Brentari and Vivienne Tartter have described models of sign language processing where research has shown that the manner and nature of the deepest levels of signed language processing is most similar to the deepest levels of spoken language processing. They have also shown that the processing is most different at the phonological or surface levels and that this is because the modality of the two languages is very different. This means that instead of using a phonology and morphology made up of combinations of sounds in a heard and spoken form, signed languages use a phonology, composed of handshapes, movements, locations and non-manual features in a visual or kinesthetic form (Brentari, 1998. Tartter 1998).

This understanding that signed languages behave in a similar way to spoken languages but that they employ a different modality of performance which has led to the development of very different phonological, morphological and semantic relationships is not yet generally known or, indeed, understood by mainstream linguists. This is because it is very difficult to move out of the assumptions we all hold which are based on our own spoken language experiences. Additionally the vast majority of mainstream theoretical linguistic research focuses on spoken language models as can be seen when examining most linguistic texts. One instance of this can be seen in the Trevor Harley's *Psychology of Language* 2001 a well-known third level linguistic and psychology textbook where scant reference is made to sign languages and the reference that is made is incomplete and inaccurate (Duffin 2004). Irish professionals and teachers working with deaf children and adults in Ireland in pursuit of the

development of good reading skills in English are at an even greater disadvantage because is no legal requirement for persons working or training to work with deaf people to have any knowledge or fluency in Irish Sign Language.

The following diagram summarises the basic differences between the two modalities and to phonologies of English and ISL described above:

English	Irish Sign Language
<p>Spoken form Information through SOUND</p> <p>Linguistic Data In ear Out mouth</p> <p>Phonemes</p> <ul style="list-style-type: none"> • vowels (lips) • consonants (mouth, lips, tongue, teeth) <p>Multiple combinations of the above phonemes form parts of 'words' and 'words'.</p>	<p>Signed form Information through VISION SHAPE MOVEMENT</p> <p>Linguistic Data In eyes Out hands/body/face/head</p> <p>Phonemes</p> <ul style="list-style-type: none"> • Handshapes (hands) • Movements (hand, body, head, face) • Orientations (hands) • Locations (upper body, head, face, arms, hands) • NMF's (face, head) <p>Multiple combinations of the above phonemes form parts of 'signs' and 'signs'</p>

From: Comparison of English and ISL Phonologies: Spoken and Signed Forms

English and ISL Phonology

As we all know an alphabet consisting of 26 letters is generally considered to represent the sounds of spoken English. However, the actual number of separate sounds that can be articulated is significantly larger than 26. (Crystal 1997). In terms of ISL phonology the number of legal handshapes shown in Pat Matthews (2002) first comprehensive written description of ISL is 65, numbers of movements, locations, orientations and non-manual features have not yet been recorded. But it can be clearly seen that a very large number of individual phonemes exist in ISL and other sign languages (Brentari 1998).

Having now summarised the main differences between signed and spoken phonologies, we will briefly discuss the implications of the grammatical differences between the two modes of language.

Grammar

One consequence of the lack of knowledge about sign languages is the historic and ongoing development of English teaching materials based on English grammar only. Many of these take a second language approach to the teaching of English. A large Department of Education study in England conclusively demonstrated that deaf students continued to perform poorly in school in English and in other subjects when compared to hearing peers (Powers, Gregory and Thoughtenhoofd. 1998).

Whether or not the deaf student is a sign language user, his or her language processing will have either a predisposition or preference for visually inputted communication information.

In the case of the native, fluent and late sign language users for whom this curriculum has been developed, previous educational experience will not have included any teaching to support, develop or describe the grammar of the sign language user. The teaching of grammar is part of the curriculum for speakers of English.

As has already been said, as the first linguistic descriptive grammar of ISL was published in 2000 and as the first qualified ISL tutors only graduated in 2002 young Irish deaf school pupils could only now begin to receive tuition on the grammar of ISL.

The differences between ISL and English grammars and behaviours have been described in detail elsewhere (McDonnell 1998, Leeson 2001, Duffin 2004), One or two examples used in the curriculum are shown in the table below.

Grammatical Role (Grammar Job)	English	ISL
Time marking/Tense	Time words exist (yesterday) Past, present or future time is usually set by or added to the verb	Time sign exist (YESTERDAY) Time is indicated at start of communication in one of a number of ways.
Pronouns	A finite number of words exist to describe simple pronouns.	Index referent indicates one or more persons Placement can be used to describe persons not present
Adjectives	Separate lexical items	Separate lexical items Inflected into the noun

From: Comparison of English and ISL Grammars by Role. Duffin forthcoming

For deaf people, learning English is predominantly a metacognitive exercise as their experiential knowledge of English can only be either partial or minimal and they have to work hard to construct its grammar using the hearing they have, using lip reading and using contextual guess work (Paul.1998, 2001) For hearing people both metacognitive and experiential perspectives can be brought to the task.

In practice what this means is that when deaf people are reading English they cannot rely on the vast store of information on words and arrangements for words known covertly by hearing people as part of their functioning grammars which allows them to know if something written *looks or sounds* right.

Presenting grammar as a linguistic concept allows a description of the components of communication in terms of roles (or grammar jobs) in theoretical terms this means we deconstruct our notion of grammar into a model containing all the jobs that need to be done in order for complex communication to be understood between speakers. Thus, the curriculum is able to describe and demonstrate the way the roles within communication manifest themselves in the performance of ISL and in the written form of English. This is a particularly empowering approach for deaf students as the understanding of English grammar that is required doesn't come from immersion in the language or by teaching English grammar as a subject on its own, but by application of the student's own growing knowledge on how languages behave.

The use of plain English and plain language to describe complex abstract concepts is also a particularly important feature of the curriculum. Students do not need to learn about linguistics at bachelor degree level, but they do need to have a sense of language behaviours in general in order that each individual can construct his or her own internal models of how these behaviours (or grammars) apply to ISL and English. Examples of ' grammar jobs' referred to in the curriculum include:

Action
Information about the action
Identification
Information about the noun
Pronouns
Time marking
Tense
Aspect
Reference
Relationships
Initiator of action
Recipient of action

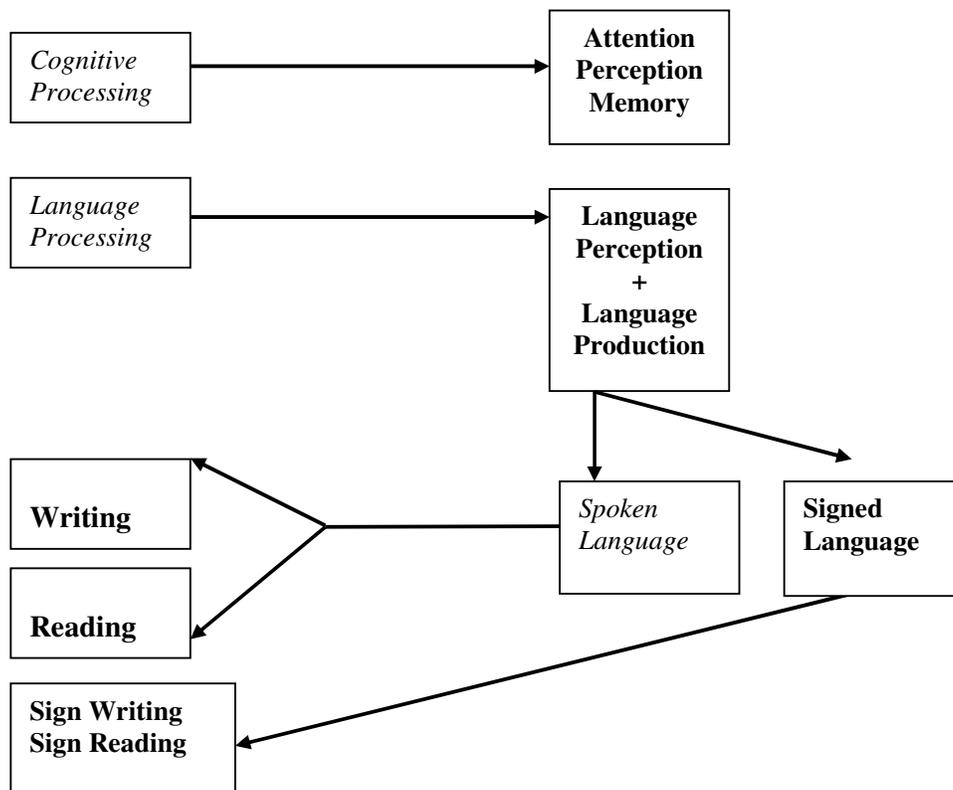
From: Duffin D. forthcoming

We have now examined the factors that must be taught in order to understand the differing English and ISL phonologies and we have also shown that many differences exist between the two respective grammars. It is not possible in this paper to describe the differences in grammar fully, a more detailed discussion can be found in Pat Donnell's 'Introduction to Deaf Studies in Ireland' (Duffin 2004).

We will now look at a particular element of the relationship of the written form of English by making in an addition to the language representation model discussed earlier. This will highlight the fact that the written form of English doesn't have an explicit concrete relationship to language processing as the spoken and signed forms do, being as it is an abstraction from the spoken form (Paul 1998, 2001) and will demonstrate more precisely the nature of the difficulties experienced by deaf people learning to read.

The Relationship Reading and Writing Skills to Cognitive and Language Processing.

This diagram captures the relationship between comprehension and speech and queries the relationship of the written and read forms of English to the spoken form.



Model of Written Forms of English and ISL: Duffin forthcoming

It shows that for all who learn to read English the spoken form of English must be associated with the arrangements of the 26 letters of the English alphabet that we all know as words and sentences. It also demonstrates that for deaf children who use a sign language there is no clear route through which access to reading and writing skills in English can be gained as there is no guaranteed route to spoken language fluency. It will be of further interest to mention the existence of written forms of sign languages in the following discussion about acquiring reading skills.

English Reading and Writing

Children learn to read after they have learned to talk. As we have already explained that spoken languages use the medium of sound for both production and perception is easy to see that there is no automatic transference from the spoken sounds of English to its written or orthographic form. It is simply not possible to place a number of sounds on a sheet of paper. All forms of written spoken languages employ symbolic representation. English uses the Arabic alphabet as symbols to represent the sounds of spoken English (Crystal 1997). The alphabet is familiar to us because we know it and because we have long ago learned to associate its characters with the words we speak. It is difficult for us to acknowledge that the alphabet is a purely arbitrary system of symbols for representing a series of sounds on a two-dimensional surface.

In learning to read the child goes through a very complex process in learning to associate the written symbols with the spoken language he is used to hearing and using. This is why there have been such a large number of reading programmes developed and why there is such variation in the way that children learn to read and in the ages at which the individual gains mastery of the task (Paul 1998, Paul 2001).

In presenting the means to best support deaf people in accessing written English text there are two main historic schools of thought to consider (Padden and Ramsey, 2000, Hoffmeister 2000).

1. Deaf children with the greatest levels of hearing will learn to read English with the greatest ease because they have greatest access to the spoken language form of English and therefore can be expected to experience the least difficulty in making the transference to an abstracted written form.

Difficulties with this point of view centre on the variation of spoken language input access between one deaf person and another resulting in the fact that the most profoundly deaf members of the class will continually be at the greatest disadvantage.

Additionally existing language skills in ISL may go unacknowledged.

2. Deaf children who are fluent or native signers can be considered to have first language fluency (not something that can be assumed for all deaf children as 90% are born to hearing parents) and therefore can also be supposed to have all the templates for deep linguistic processing in place. This situation would appear to be optimal for the teaching of an additional language, as fluency in one language would already exist.

The former can be considered to represent an oral teaching methodology where English is largely taught through the spoken form and the latter can be considered to represent a bilingual teaching methodology where English is taught through the medium of ISL.

In previous papers I have often promoted the idea that all deaf children be given access to a sign language however minimal the hearing loss he or she is diagnosed with. This is because ISL is the only fully accessible language option for deaf children (Duffin 1999), notwithstanding hearing parents of deaf children's concerns around English speech skills, I still feel this is the best option for securing fluency in a first language (that is a signed language), fluency in reading and writing English and that it gives optimal opportunity for the development of speech skills.

Sign Writing

The task underlying the creation of a written form of a sign language is basically the same as for English; an abstraction from the performance to a set of symbols on paper will allow the communication to be *read*. However, two factors in the process of developing sign language writing are very different to developing spoken language writing:

1. Here we are not conveying a representation of sound to a visual form, we are conveying a representation of a visual-spatial language (which is perceived visually and produced kinesthetically) to a visual form. Unlike spoken language sign language performances can be captured visually either by photographs or on video.

2. Because of sign language perception of signed language uses a visual channel we can employ a visual symbols in creating an orthographic representation. For example we can show handshape using a symbolic representation that is not abstract but is directly related in shape and form to the handshape it represents. This is because of the isomorphic nature of sign languages (... signs are iconic: that is, there is a relation between the form of the sign and its meaning. Emmorey 2002. p.17).

One of the best-known sign writing systems is that developed by Sutton (1973, 1981, 1995 and cited in Matthews 2000). This system existed in a written form for 10 years before the software programme SignWriter was developed. SignWriter can be written from the productive or the receptive perspective of the writer. This system can be used in four different ways giving different levels of detail. In effect the system ranges from a simple note form to a fully detailed descriptive form.

In reaching this point in the discussion supporting the development of a meta-linguistic curriculum we have been required to take a number of disciplines of study each of which has its own supporting body of research and publications. These include: psychology, theoretical linguistics, language acquisition, second language acquisition and psycholinguistics. The development of this curriculum has necessitated the isolating of the salient points from each and combining them in a meaningful discussion to demonstrate the sound theoretical basis upon which the curriculum is being built.

The meta-linguistic solution

The following points summarise the factors that need to be considered when developing programmes for the teaching of English to deaf children and adults:

- Psycholinguistic research demonstrates that the greatest difference between spoken and sign language occurs at the performance level.
- Signed and spoken languages have very different phonologies.
- Signed and spoken language grammars are adapted to the performance modality.
- The only modality of language that can be fully accessed by the deaf child or adult is a signed language.
- All deaf children experience difficulty in acquiring spoken English.
- Deaf people's understanding of their own language remains wholly dependent on the functioning grammar each individual.

- The functioning grammar of each individual varies enormously depending on early sign language acquisition experience.
- Neither mainstream nor specialist schools timetable teaching about the grammar of ISL.
- Deaf people's restriction of access to spoken English has an effect on accessing the orthographic form of English.
- Deaf people do not have equivalent numbers of English spoken words in their long-term memories to their hearing peers.

Model of the Curriculum

My research is a response to an identified need for deaf students to be able to access academic text and takes a 'meta-linguistic' approach to reconciling the grammatical differences between English and ISL. I am developing a curriculum that 'bridges' the two languages by deconstructing the grammars of both under a Chomskian model of universal grammar. The curriculum in development at the Centre for Deaf Studies is presented over 10 weeks. The classes are two hours in duration with each session comprising a lecture containing the theoretical element and a practice session where students work as a group translating from English into ISL.

This paper does not touch on historic and current methods of assessment of deaf students' English skills of which there is also a large body of research studies and publications. The topic of assessment in the context of this curriculum is only spoken of in terms of any individual's improvement on his or her past performance.

The curriculum acknowledges the diversity of experience and skills within any one group of adult students in the introduction students are encouraged to set rules for the group in terms of discussing what happens in the class outside the classroom. It is generally agreed that what happens in the class is not discussed outside the classroom in order that members of the group can feel comfortable during the learning process. During discussion it always emerges that a simple and effective way of assessing whether the person understands when reading is to translate the English text into ISL.

The following model demonstrates that the curriculum proceeds from the premise that an approach of simply looking at word meanings and translating them will not provide an adequate understanding of the text. By the fifth teaching session students are aware of the

importance of context and inference and that grammatical forms and writing conventions must also be taken into consideration when translating the meaning of text.

Discussion

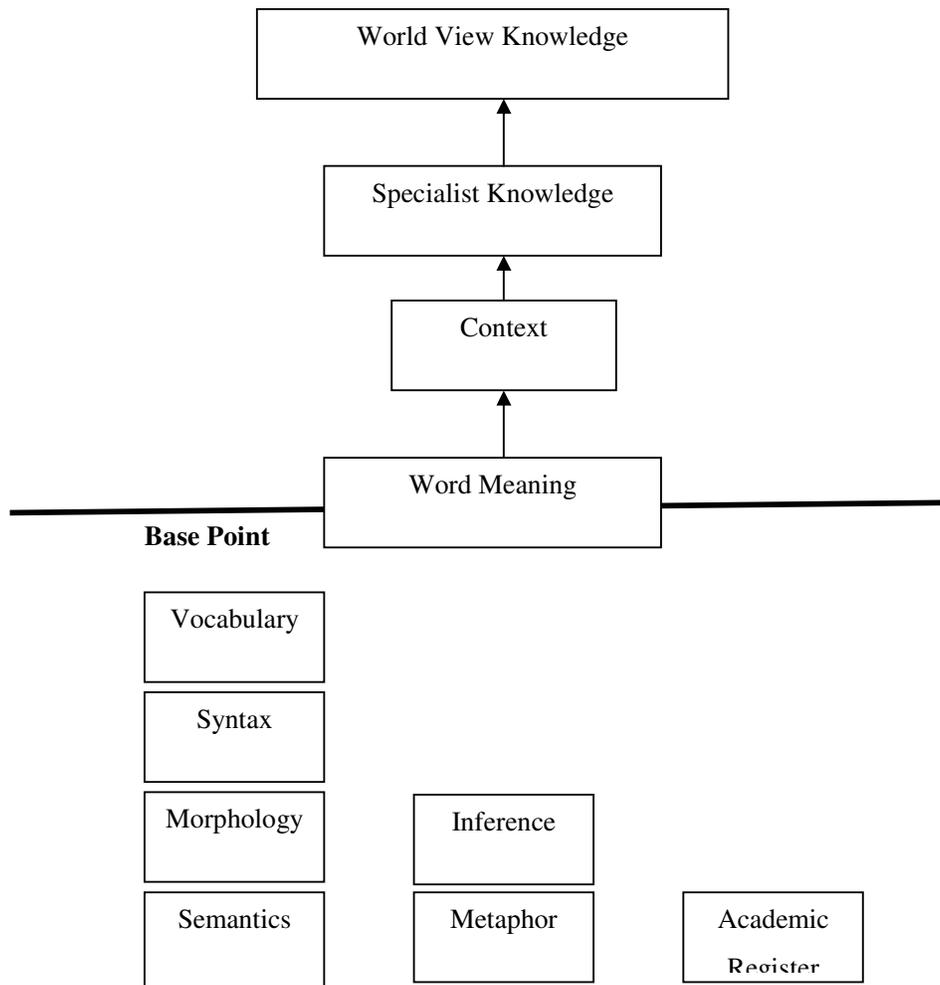
Over the duration of the course students may be taught one-to-one, may work together in pairs or may work together as a group. It is very important at the start of the course that an environment of safety and confidentiality is established. This is because students will be asked to demonstrate their abilities in understanding complex English sentences. Historically deaf students become proficient at concealing what they do not understand because they may have spent many years in education asking for information to be repeated or explained and, having tired of constantly being at a loss, have developed a number of ways of hiding lack of comprehension.

It is important, therefore, in delivering this course to create an environment of openness and honesty. This is done by acknowledging the difficulty of translating English meaningfully and by agreeing that the best way to see what comprehension is present is to translate the English into ISL. There is usually a discussion around why the use of Signed English (a signing system that mirrors the syntax of English) and finger spelling can also mask comprehension.

One of the goals of the first teaching session is to establish agreement amongst the students that there will be no criticism of any other student's skills, that what is said in the class remains confidential and the students will be honest and open about their own skill. It is because of the sensitivity each individual may have around his or her English skills that the course is not formally assessed. Instead there is discussion about the reasons for the diverse range of deaf people's skills and abilities in English to show that any form of comparative assessment would be without value. At the start of the course each student is videoed as he or she translates a short passage of English by signing it in ISL.

At the end of the course and also again at the end of the year the student is given a passage of similar difficulty to translate and he or she and the teacher will discuss the improvements that are visible. As has been said earlier many curricula for deaf students are based on the English as a second language model and their grammatical perspective focuses entirely on the grammar of English. The meta-linguistic curriculum builds on the functioning grammar of ISL of the native sign is whom it targets. By presenting grammar as a linguistic concept, which describes components of communication in terms of roles (or grammar jobs), the

curriculum is able to describe and demonstrate the way the roles within communication manifest themselves in the performance of ISL and in the written form of English.



Model of Meta-Linguistic Curriculum: Duffin forthcoming

Although this particular curriculum has been developed for University students at the Centre the Deaf Studies in Trinity College Dublin, its underlying methodology should hold true for future development of curricula for different age groups and for different levels of ability.

The curriculum has two main aspirations for the deaf person. The first to provide a substitute for the stage of reading development that all people must go through and which is even more difficult for deaf people to achieve successfully than it is for hearing people. This is the complex process of relating known sounds to an alphabet of abstract symbols and to substitute instead a system for understanding some of the principles of linguistic behaviour at a deeper level of processing. The curriculum should therefore be equally effective for

profoundly and *partially* deaf students alike as it removes the disadvantage experienced by the students with the lowest levels of hearing with curricula using spoken language methodologies.

The second aspiration is concerned with self-advocacy: it is the intention to place the deaf person in control of his or her English reading development by equipping him or her with:

- A body of knowledge on which further knowledge can be built over a period of time
- A series of strategies that can be employed when decoding text
- The growing self-confidence to make a lifelong commitment to this difficult, time-consuming and lengthy process

When employing a meta-linguistic curriculum we are necessarily bound to discuss and understand complex conceptual and abstract ideas. Although the Centre for Deaf Studies is an ideal environment for such discussions, primary and secondary of schools are not. Therefore versions of the curriculum for application in a variety of settings would need to slowly and gradually build such awareness and understanding within the context of education in general. This would seem to be one of the biggest arguments for deaf children being offered a different type of education to the current system.

Bibliography

- Brentari, D. (1998) *A Prosodic Model of Sign Language Phonology*. Cambridge MA and London England: MIT Press
- Chamberlain, C. Mayberry, R. I. And Morford, J.P. (2000) (Eds) *Language Acquisition by Eye*. NJ, London: Lawrence Erlbaum Associates.
- Conrad, R. (1979) *The Deaf School Child*. London: Harper and Row.
- Crystal, D. (1997) *The Cambridge Encyclopaedia of Language*. 2nd Edition. Cambridge: Cambridge University Press.
- Duffin, D. forthcoming *ISL Native and Late Signers Access to Academic English: A Meta-linguistic Curriculum*. PhD research in progress. Trinity College :Dublin
- Duffin, D. (2004) Language processing in speech or sign: similar or different? In P. McDonnell (Ed) *Deaf Studies in Ireland An Introduction*. Douglas McLean Coleford: England
- Duffin, D. (2001). A Bilingual Perspective of Deafness: A discussion on the underlying philosophy of the Model School for the Deaf Proposal for a deaf Children's Literacy Scheme: READ BOOK UNDERSTAND MEANING. *Journal of Clinical Speech and Language Studies* (forthcoming)
- Duffin, D. (1999) Deafness and Language Acquisition. *Teanga*, 18: 93-105
- Duffin, D. (1998) *The Effects of Modality Difference on Cognitive and Linguistic Development*. Unpublished Master's Dissertation. Dublin: TCD
- Emmorey, K. (2001). *Language, cognition, and the brain: Insights from sign language research*. Mahwah, N.J.: Lawrence Erlbaum Associates.

- Eysenck, M. W and Keane, M. T. (2000) *Cognitive Psychology: A Students Handbook* (4th Edition) England: Psychology Press.
- Harley, T (2001) *The Psychology of Language: From Data to Theory*. Hove, UK: Psychology Press
- Hoffmeister, R.J. (2000) A Piece of the Puzzle: ASL and Reading Comprehension in Deaf Children. in Chamberlain, C. Mayberry, R. I. and Morford, J.P. (2000) (Eds) *Language Acquisition by Eye*. NJ, London: Lawrence Erlbaum Associates.
- Leeson, L. (2001) *Aspects of Verbal Valency in Irish Sign Language*. Doctoral Dissertation. Dublin: Centre for Language and Communication Studies, TCD.
- McDonnell, P. and Saunders, H. (1993) Sit on Your Hands in Fisher R and Lane H (Eds) *Looking Back: A Reader on the History of Deaf Communities and Their Sign Languages*. Hamburg: Signum Verlag
- McDonnell, P. (2004) (Ed) *Deaf Studies in Ireland An Introduction*. Douglas McLean Coleford: England
- McDonnell, P. (1998). Unpublished Doctoral Thesis. Dublin: TCD.
- Padden, C. and Ramsey, C. (2000) American Sign Language and Reading Ability in Deaf Children. in Chamberlain, C. Mayberry, R. I. And Morford, J.P. (2000) (Eds) *Language Acquisition by Eye*. NJ, London: Lawrence Erlbaum Associates.
- Tartter, V. C. (1998) *Language Processing in Atypical Populations*. London: Sage Publications.
- Paul, P. (2001) *Language and Deafness* (3rd Edition) San Diego, CA: Singular Publishing Group.
- Paul, P. (1998) *Literacy and Deafness: The development of reading, writing and literate thought*. Boston, London: Allyn and Bacon
- Powers, S. Gregory, S and Thoughtenhoofd, E. (1998) The Educational Achievements of Deaf Children. An executive summary of the DfEE Research Report RR65. *Deaf Worlds* Volume 15.2:8-12