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Maltese Sign Language in Deaf[1] Children's Education and Assessment

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Abstract

The view of the Deaf as a cultural-linguistic minority is considered as the desired basis for all educational arrangements including those for assessment. It is argued that Deaf children need to achieve good fluency in at least one language before starting their formal education. Children who are not in possession of a first language – spoken or signed - are greatly disadvantaged when they are included in literacy programmes for hearing children. In fact, some may never reach a satisfactory level of literacy and, therefore, will not learn to engage in literate thought. The need to promote access to bilingual (bimodal) education is emphasised. This implies facilitating competence in a sign language as well as a spoken language - preferably the two languages spoken in the Maltese educational system. It is argued that full access to the curriculum for Deaf children can only be achieved through Maltese Sign Language which, it is proposed, is the alternative route that will enable Maltese Deaf children to develop reflective and creative thinking resulting from full literacy.

[1] The term Deaf (with a capital D) is used to refer to persons who identify themselves as members of the community with substantial hearing loss who use sign language extensively.

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Introduction – Deaf children in education

The Deaf community worldwide sees itself as a linguistic, cultural minority and asserts that this should constitute the rationale for any educational arrangements rather than that resulting from the 'medical' view. The various implications of this lead to a qualitatively different approach to the education and assessment of Deaf children.

Deaf students in Malta have long been recognised as a minority group within mainstream education. They were among the first disabled students to be accepted into the mainstream since the 1960s (Bartolo, 2001). This was not, however, done in the knowledge that their education and assessment may require a new approach or resources beyond regular visits by a peripatetic teacher.

Whilst the professionals' approach was usually welcoming and sympathetic, no high expectations were in place. The outcome of the children's integration into the mainstream depended to a large extent on the degree of support that parents were able to give to their child. Children who were not supported in a substantial way by their parents were unable to make academic progress and usually went back into special education (Azzopardi, 1983, p.600).

The Deaf as a linguistic minority

The medico-technological focus

Professionals have in the not-so-remote past viewed disabled persons as having a lack of some kind. Deaf children were seen primarily as children who needed to have their hearing adjusted and hence fitted with hearing-aids. There is little doubt that most hearing-impaired children benefit greatly from suitably fitted hearing-aids, and that technological advances continue to increase these benefits. Without suitable hearing-aids these children have little, if any, useful access to spoken language. Today, the most technologically advanced device is, in fact, the cochlear implant, a surgically implanted electronic device which has been widely applauded for improving the quality of the sound received as input by the profoundly deaf person.

Nevertheless, so far, it seems that whilst children with cochlear implants develop sounds in the same order as hearing children and generally faster than children with hearing aids, this development is slower than that of hearing children and "unintelligible speech remains the norm, particularly when those children have congenital hearing losses. As impressive as their gains might be, children with implants generally do not show language growth at levels comparable to hearing peers." (Marschark, 2002, p. 3). One can therefore say that they still do not have the same access to speech as do hearing children and, certainly, their access – whatever the degree – comes much later than that of the hearing child.

Focus on the technological side of hearing loss has cost the Deaf child a great deal of time and energy away from support. In various discussions, seminars and workshops locally, the lengthiest and most heated debates are spent on the subject of audiology rather than on curricular subjects. Moreover, the identification of poor technology has also often served as justification for educational targets generally and language targets in particular not being achieved. Had the same time and energy been spent on recognising the need for an alternative accessible tool for interaction and on

developing alternative accessible teaching and learning strategies, the educational outcomes for children with hearing loss may have resembled those of hearing children generally to a greater degree.

Focus on linguistic-cultural identity

In more recent years, following the great work of William Stokoe in the early seventies and the research of many other linguists, sign languages have been identified as visual-spatial parallels of the spoken languages of the majority that are fully accessible to the Deaf. Thus, persons or communities who consider themselves as Deaf see this 'deafness' as a cultural identifier equated with their use of a sign language rather than as audiological status.

There is no denial that profoundly Deaf children – and, probably many others with a lesser degree of hearing loss – have limited access to the spoken word. Moreover, that access is often delayed considering that hearing children often have a very complex, fairly adult-like grammar by as early as the age of 36 months. We are told that "research continues to show that, on average, deaf children with congenital or early-onset hearing losses consistently show significant delays relative to hearing age-mates, even when those hearing-losses are in the mild to moderate range (Marschark, 2002, p. 3).

On the contrary, Deaf children with Deaf parents who are exposed to sign language within their family have full and timely access to the language and develop it just like hearing children develop spoken language.

> Deaf children acquiring sign languages from birth do so without any modification, loss, or delay to the timing, content, and maturational course associated with reaching all the linguistic milestones observed in spoken language. Beginning at birth, and continuing through age 3 and beyond, speaking and signing children exhibit identical stages of language acquisition. (Petitto, 2000, p. 452)

Deaf children who are exposed to sign language early – even if not from birth – also have a good chance of acquiring the language fully as a first language that fills all their communication and interactional (social) needs.

On the other hand, children with a hearing loss that limits their access to spoken language may have limited spoken language mastery. A good number of them may meet many difficult-to-surmount obstacles in their attempted path to literacy, education and social interaction with the larger hearing community unless they have supportive parents who can facilitate their language development after diagnosis.

> The majority of Deaf children do not acquire language in any straightforward sense. The typical experience for the Deaf child is late and impoverished exposure to a first language. The reasons for this are numerous but one major factor is that 90 to 95% of Deaf children are born to hearing parents with no knowledge of sign language. (Morgan & Woll, 2002, p. xiii)

It is clear from Morgan and Woll's argument – and from various other researchers – that Deaf children can only be at par with their hearing counterparts if they are allowed to develop sign language as a first language in early childhood. Unfortunately, there are many environments that still do not encourage this:

> For much of recent history the use of sign languages by Deaf people has been actively discouraged by the wider hearing community (Facchini, 1985). Consequently the Deaf Children we study grow up using a minority language at home surrounded by more powerful majority spoken and written languages. This type of bilingual context undoubtedly affects language acquisition. (Morgan & Woll, 2002, p xiii)

Every child needs to be given an accessible language from as early an age as possible to prevent the implications within literacy development – and, subsequently, education - as well as within the social development sphere. Developing a language in the early years would, moreover, help prevent mental health problems resulting from frustration and insularity that are often experienced by the hearing-impaired child with hearing loss "…who is cut off from the rest of (the family), (and) with whom the mother cannot easily communicate" (Gregory, 1995, p. 196-7).

It seems that, with very few exceptions, children will not learn language as a native language unless they do so within the critical period even if this extends beyond the three years indicated by some researchers:

> The notion of critical period is that children must learn a language (any language) during the rather brief period of the first two or three years of life. If a first language is learned later, there will be problems in developing a full linguistic system. (Kyle & Woll, 1985, p. 64)

The most serious problem in this regard is that children require accessible and meaningful input that is structurally beyond what they actually produce themselves to enable them to create their grammar (Krashen & Terrell, 1983, pp. 32-39) and, since this comes from interaction with significant others, children with a hearing-loss are doubly disadvantaged. This is stressed even further by Kyle and Woll (1985):

> One can suggest that deaf children's lack of language is indicative of general lack of interactive competence; or one can assume that deaf children's lack of spoken language makes the communication of behavioural and social norms impossible for parents; or one can claim that lack of shared communication deprives the deaf child of access to the knowledge required for maturity. (p. 65)

They conclude that the development of language can only occur where children are provided with input which they can perceive and where the adult and child are joint partners in creating communication.

The Deaf child and language

The Deaf child and the hearing-impaired child: different access to language

The distinction between the Deaf Child and the hearing-impaired child is sometimes highlighted in discussions regarding how cochlear implanted children's behaviour resembles that of hearing children in their access to and learning of spoken language. Deaf children have at best only very limited, inadequate access to spoken language: "The majority of Deaf children do not acquire language in any straightforward sense. The typical experience for the Deaf child is late and impoverished exposure to a first language" (Morgan & Woll, 2002, p. xiii). They cannot learn language naturally, that is, through the spoken input of others alone. This also means that their social

interaction is very limited until they acquire language. Hearing-impaired children who do not learn language fully by the time they complete their primary education are, of course, also disadvantaged in social interaction: "All available research indicates that for children with greater hearing losses, exposure only to spoken language usually falls short of giving children the linguistic tools they need for academic and social purposes" (Marschark, 2002, p. 26).

Hearing-impaired children who do not use sign language must rely entirely on spoken and written language in order to learn to think and, of course, to communicate. The spoken language they access – with possible different degrees of distortion or fragmentation – must serve all of the purposes both inside and outside education. The Deaf child can really only rely on sign language since it is fully accessible.

The Deaf child is at a disadvantage in the path to literacy

Traditional teaching.
Inadequate access to spoken language clearly puts Deaf children at a disadvantage with literacy. Traditional teaching in schools has emphasised the relationship between the spoken and the written form which has greatly disadvantaged the Deaf child. Acknowledging the role of an alternative fully accessible language like sign language can build an important bridge to literacy which is crucial for education, personal development and subsequent employment:

> Clearly, the hearing-impaired child arrives at the task with a double problem: not only does he not know the coding principles of the written symbols, he does not have adequate command of the phonemic code and language structures into which he must decode these symbols. Simplifying the language of the written symbols to keep within his linguistic competence may be useful, but it is unlikely to be sufficient. (Bamford & Saunders, 1991, p. 209)

The Deaf child's limited access to social interaction.
As Garton and Pratt (1998, p. 261) note, "social interaction and metalinguistic awareness are both essential components in the learning of literacy." The Deaf child's social interaction is extremely limited because of the fact that it is usually highly dependent on inaccessible spoken conversation. Moreover, only the small proportion of Deaf children who have Deaf parents have access to sign language at a very early age unless the parents are willing to commit themselves to learning and using sign language as part of their daily living. This limitation is even more extreme in a country in the middle of the Mediterranean with a total population of 400,000. Provided that adequate support and good interpreting services are available, the family can adopt sign language to reduce the Deaf child's exclusion from regular social interaction and full education.

Alternative route to literacy
Unfortunately, in Malta, most Deaf children – particularly those whose parents cannot fully support them academically - can only be helped acquire a good level of literacy if they have the services of sign language interpreters in the classroom. The sign language interpreter can actually exploit the Deaf child's sign language skills in order to help the child's development of literacy. Yet, as Knight and Swanwick (1999, p. 177) argue, "Deaf pupils' developing sign language skills should be recognized as an area of strength with regard to literacy learning and that these skills provide the main

route into literacy development." This alternative route must be used since Deaf children cannot otherwise reach the same goals needed for them to "enhance cognitive development" (Garton & Pratt, 1998, p. 265).

The path to inclusion is being forged through the young interpreting service. There is a long road ahead. However, there is help from various quarters when there is readiness to adopt sign language as the map. Nelson, Prinz and Dalke (1989, p. 88) report the results of a 5-year project using an Interactive Microcomputer system that combines "text, sign language, and animated pictorial graphics, in appropriate contexts to facilitate communication." We are told that this combination within rich discourse exchanges between teachers and children led them to make the connection between signed and written communication: "The children were highly motivated to encode and decode written messages since they could see that their own primary mode of communication (sign language) was represented in the materials presented on the computer" (Nelson, Prinz & Dalke, 1989, p. 87).

Some Deaf children do find their own way to linking signing and finger-spelling to reading and writing. Close observations of the two Deaf examination candidates referred to later in this article pointed to their 'reading aloud' and thinking and working out problems through 'quiet' signing. Nevertheless, it is only the full access to examination questions through sign language that enabled them to do this.

The Deaf child's limited success in literacy so far

Prinz and Strong (1998, p. 252) summarize the problem for us all: "The acquisition of literacy continues to be a major obstacle for academic achievement and vocational success for deaf individuals throughout the world." Paul and Quigley (1990, p. 100) confirm that 18- to 19-year old, severely to profoundly Deaf students read no better than 9- to 10-year-old hearing students of average ability. Hansen and Mounty (1998, p. 105) show that access to sign language materials for a variety of subject areas improve not only Deaf children's ability to read and write but also to understand and learn.

Recognizing the complexity of the skills required by the reader

Perhaps one of the reasons for the Deaf child's inability to read at an advanced level is that s/he is often stuck along the bottom-up path to advanced literacy. It must be remembered that the interpretation of texts or 'productive reading' "is controlled by the reader's personal imagination as well as by socially regularized conventions" (List, 1990, p. 71). Pedagogy for literacy for deaf children needs to be rethought. List warns of the danger of "methods which require reading word-by-word or sentence-by-sentence, or even more those which set isolated words or sentences beside pictures which themselves already present what the words merely repeat."

List considers the role of accessible sign language as an alternative route:

> The deaf must also construct meaning from printed text via the personal language they use in their everyday lives. This means that sign language – or the inner processes underlying the perception and production of sign language – plays an important role… It is therefore important to study the inner language procedures which the deaf develop within the medium of their own language in order to begin to understand how to use these procedures as a bridge for reaching the productive interaction between a person and a text which constitutes real reading and writing. (p. 71)

The time has come to move Deaf children beyond the 'barking at print' stage of reading.

Establishing the Deaf child's reading age

It would be helpful to be able to establish the Deaf child's reading age. Bamford and Saunders (1991) discuss the differences in results of reading tests which indicate that Deaf children rated with the same reading age as hearing children do not actually read in the same way. Reflecting the thinking of various researchers in the field, they suggest that:

> It is dangerous to assume that a deaf adolescent with a reading age of 9:0 years is behaving in the same manner as a hearing 9:0 year old with average reading ability. The deaf adolescent brings to the task quite different percepts, experience and cognitive abilities from those of the 9-year-old hearing child. Faced with reading tests which are designed for the hearing child and which may be linguistically too difficult, the older deaf child, in order to proceed with the task, may adopt other strategies which are too subtle to be picked up by such a global measure as reading age. (Bamford & Saunders, 1991, p. 206)

Such tests fail to reflect the reading processes used by Deaf children and do not indicate what the Deaf child's reading problems really are.

Bamford and Saunders (1991) also consider the findings of various studies that show that teaching reading to Deaf children is often used in order to teach language and the constant stopping does not help the development of strategies to make sense of the text, to derive meaning from the connected text. Often subject learning is itself jeopardized when every text is used to teach language instead of to concentrate solely on using it as a medium to develop subject-specific learning.

Several studies show that Deaf children usually lack internal speech (Bamford & Saunders, 1991, pp. 212ff). This results in their involvement with the low-level processing of the words and their constituent graphemes at the cost of the high-level processing that is required to access syntactic and semantic information to derive meaning from text. Even Deaf children who use internal speech do so less effectively than hearing children. Their difficulty may well be compounded by lack of the deep understanding of the pragmatic level of language that is necessary for decoding written texts and that develops as a result of rich language experience.

Language related arrangements in education

The Deaf child's language

It must be recognised that all children in Malta are expected to become bilingual by the end of their secondary education (Ministry of Education, 1999, p. 30). They are, in fact, expected to be bilingual and biliterate in order to access secondary education where most textbooks and resources are in English. Only a few subjects are taught in Maltese at secondary school. The Deaf child, therefore, has a more serious disadvantage than that of other deaf children in societies where the language of education is the same as the native language of the wider community.

Children who access their education through Maltese Sign Language

It is clear that children with a hearing-loss can be grouped depending on their language orientation. Deaf children of Deaf parents are recognizable by their native competence in their home sign language very early on in life. In Malta, this is Maltese Sign Language (LSM[1]). The number of children in this group is extremely small. However, there are also Deaf children who learn sign language either soon after diagnosis or at a later stage through some educational channel (Deaf peers, sign language interpreters). This group accesses a large percentage of school-based lessons and other activities through LSM. Much of what they do without the interpreter at school is usually not so language-reliant or a review of material accessed initially through LSM or continued with the help of a learning support assistant.

There is no denying that these children are very different from each other, not only because the first subgroup – and some of the second - is advantaged for having LSM as a native or near-native language, but also because each of the children in the second subgroup differs from the other both in sign language competence as well as in opportunities to use sign language beyond the school environment. Once again, it is a difference based mainly on parental support.

Sign Language Interpreters have only recently begun to interpret regular lessons through LSM to a small number of Deaf children from primary to post-secondary level. The children do not usually have Deaf parents and their parents may or may not be competent LSM signers. The interpreters (and the Deaf community) provide substantial LSM input and make it possible for the children to progress academically. A small number of Deaf children who recently completed their secondary education assert that it is interpretation into LSM that has given them access to subjects like Mathematics, Physics, and Biology.

Children who access their education mainly through spoken and written language

Most hearing-impaired children access their education through spoken and written language. It could perhaps be said that the degree to which they access education corresponds to the degree to which they access and develop language. Those children whose language competence at the beginning of formal education is good may have satisfactory access to school subjects especially if they have full parental support and are able to withstand the long hours of after-school coaching (Azzopardi, 1983, pp. 598-9). Often, one finds that they miss out on the more obvious knowledge that starts at home but also continues at school outside of official lesson time. Some years ago it came as a shock to note that a Deaf child who had gone through six years of primary education, where many weeks are spent preparing for Christmas in the Christian tradition, simply did not know that Christmas was about Jesus who was born in Bethlehem. That is only one example of how easy it is for a Deaf child to miss out on important information that is an integral part of the world s/he lives in. It is frightening to think how much more the child must have missed that is difficult to identify but that is assumed later on in the child's education and by the community s/he lives in. This 'missing out' can accumulate and accelerate and prevent a child from learning.

[1] Maltese Sign Language is known internationally as LSM not MSL. LSM is the abbreviation for 'Lingua tas-Sinjali Maltija' whereas MSL refers to Malaysian Sign Language.

The Deaf child's access to literacy
As already pointed out above, a Deaf child's failure to acquire a first language in any modality constitutes a great obstacle to the acquisition of literacy which is an essential tool for the acquisition of most school learning. This area, therefore, needs to be given priority for deaf children. Teachers need to have a clear understanding of the barriers:

> the hearing-impaired child arrives at the task with a double problem: not only does he not know the coding principles of the written symbols, he does not have adequate command of the phonemic code and language structures into which he must decode these symbols. (Bamford & Saunders, 1991, p. 209)

As explained above, sign language is generally seen as the best alternative route for addressing these lacunae.

Assessment

General considerations – extra time
Since Deaf children's hearing loss affects language in a variety of ways, there is some controversy about what can be done to facilitate their assessment without affecting the nature of the examination (Access: Disability Support Committee, 2007, Section 4.4). The Deaf candidate's own development and use of the spoken and written language are directly affected. There is also the fact that even where s/he can read and write, processing of language is slow. Extra time is required by all children with hearing impairment even if one could argue that some need much more extra time than others. This arrangement is largely uncontested though it can still be finely tuned in relation to individual degrees of hearing loss, the functional hearing for speech as well as whether the hearing loss is pre- or post- lingual.

Language beyond the medium?
Arrangements related directly to the actual wording of the examination questions and access to them as well as to the answers are not usually seen as straightforward.

(1) Knowledge of language or knowledge of subject?
Where arrangements for access are requested that relate to the actual language of the questions and answers for candidates with language-connected disabilities such as hearing impairment, difficulties arise. The question involved is whether it is possible to distinguish between knowledge of the subject itself and language as the medium or expression of that knowledge. Many heated debates have taken place over a number of years as to how much actual language is involved in various non-language examinations, how separable the language is from the actual subject matter, and how much the examiner is able to assess information beyond – or in spite of - the language that conveys the candidate's answers. Several characteristics of the written medium raise particular difficulties.

(2) Spelling
Though spelling is not an assessment objective in non-language examinations, it has long been established that spelling of technical terms must be correct for the use of the technical term to be considered correct. Is it possible for anyone to assess knowledge of subjects like geography or science or home economics without considering answers strewn with spelling errors probably accompanied by incorrect grammar as inferior to

those which are relatively neutral or with only occasional errors? It is debatable whether examiners can completely dissociate the written forms that convey the information from the information itself. Giving the student the benefit of the doubt in the spelling of carrier language is likely to depend both on the kind of spelling errors (*toung* vs *togon* for *tongue*) and the individual examiner's level of tolerance.

(3) Mixed language use

One established fact in bilingual Malta is that Maltese features prominently in subject teaching even where the textbooks are written in English by non-Maltese authors (see Camilleri, 1995). Many young secondary school children have enormous difficulty keeping to the one language in any technical discussion. Adults do not behave very differently. Teachers use Maltese and English to different degrees in the same lesson to different classes. Mixing is an accepted teaching strategy when addressing children who are Maltese-dominant (see Firman, 2008, p. 20 regarding the use of 'dominant' in this context) using textbooks written in English. Often technical terms and definitions are kept in English whereas a significant amount of carrier language in classroom explanations and discussions is in Maltese.

A good number of examination candidates are able to answer questions in English with no difficulty. Some of these candidates might, however, find it difficult to answer questions in Maltese in non-language subjects. Other candidates would choose to answer in Maltese if they had the option. Perhaps one needs to question whether a number of candidates who do not sit for the examinations in a variety of subjects might perhaps be encouraged to tackle them with a good chance of success if they could use Maltese or a mixture of Maltese and English instead of restricting themselves to English.

As things stand, if the student at the end of secondary education should have become a competent bilingual as expressed in Principle 10 of the *National Minimum Curriculum* (Ministry of Education, 1999, p. 30), why is it that only a few subjects are assessed through both Maltese and English and none through Maltese alone? One could conclude that the child with English as a dominant language (see Firman, 2008, p. 20) is being considered positively whereas the child with Maltese as the dominant language is being deprived of the possibility of using Maltese in order to express himself academically. Of course, one could argue that many secondary school leavers who do not use English competently may be academically weak. Nevertheless, there are school leavers with limited competence in Maltese who are academically weak but are at least enabled to show what they have learnt through a language medium to which they have access, that is, English.

A healthy debate on whether it is acceptable to run examinations in a choice of either English or Maltese for all subjects has already started. It may take some time to study the matter in sufficient depth. Allowing the use of both languages in examinations would surely reflect the bilingual teaching strategy that is now widely acknowledged. The Joint Council for Qualifications (2006) recognizes the problem faced by children in Britain (in a largely monolingual examination context) whose first language is not English, and allows the use of a bilingual dictionary in non-language examinations and, in some cases, extra time.

The case of the Deaf child is more acute since s/he has inadequate sensory access to the spoken language and continues to be at a great disadvantage notwithstanding years of education involving spoken and written Maltese or/and English.

(4) The Deaf child's access to the language of examination papers
The modification of examination papers for hearing-impaired and Deaf candidates is intended to simplify the language. Modification may include the use of Maltese along with English. Alternative arrangements to paper modification for Hearing-Impaired and Deaf candidates include the assistance of a communicator both to give them access to any instructions spoken by the invigilator(s) as well as to facilitate their access to examination questions. In these instances, the communicator usually uses a considerable amount of spoken Maltese along with facilitative signs.

The reason for the modification is, of course, that with a significant degree of hearing-loss from birth or soon after, a child is unlikely to have full or complete access to spoken language and may only learn the language of his/her family as a foreign language with a great deal of what amounts to direct teaching by family and significant others. Even with substantial input, some Deaf children still do not have what one could call a full first spoken language. On the other hand, Deaf children have no problems accessing sign language provided they have meaningful input. Deaf children's access to sign language is now actively encouraged in education:

> In British schools in the past the main approach to the education of such (deaf) children was through speech, relying upon an aural code. This approach failed to produce good levels of language and education. More recently there has been a substantial change of attitude, and there is now willingness to explore the combined benefits of oral and manual forms. (Evans, 1987, p. 181)

This approach that includes sign language is currently used not only in Britain but across Europe and in the United States which boasts a University for Deaf students where American Sign Language is the regular medium of regular as well as academic communication.

It is expected that through the medium of sign language Deaf children will be able to access education and be prepared for the assessment of the various components of the full curriculum that parallels the assessment of hearing children.

(5) Maltese Sign Language as a medium
In view of the 2007 SEC examinations, two Deaf candidates who were the first on the island to have had an LSM Interpreter in the classroom throughout their secondary education requested to have an interpreter instead of a communicator and to use LSM for their examinations. This was an unprecedented request. The first language of both candidates was LSM.

It was decided to run a pilot study with the collaboration of the two secondary schools involved whereby the students would use LSM for their school 'mock' examinations, which are usually held before Easter of the year when they are sitting for their SEC examinations. The study was expected to throw some light on the implications of using LSM as a medium in examinations with a view to making recommendations regarding its further use. An LSM Interpreter would sign the carrier language of the examination questions, using flashcards showing the written technical terms with minimum disruption to the signing flow. The students would answer both in writing and in LSM which would be voiced over into English by the LSM interpreter and written by a second sign language interpreter acting as scribe.

The mock examinations assisted by the interpreters were filmed using a digital camera. This was done both to act as a record that could be checked should problems arise as well as to provide data for further study of the implications.

The results of the study showed that the signing of questions as well as of answers did not give the candidates any unfair advantage. Nevertheless, The ADSC[2] decided that the signing of answers would only be adopted as a backup to the candidates' written answers in the SEC examinations at this stage. The SEC examinations were also filmed.

(6) Technical and carrier language

One advantage of the introduction of the interpreter using flashcards for technical terms was that there was no problem with having to distinguish between technical and carrier language on the spot. Two interpreters worked on the examination paper immediately before the start of the examination in order to write all the technical terms on pre-cut flashcards. Flashcards were necessary because signing may contain a certain degree of iconicity (Azzopardi-Alexander, 2008) and so signing the technical language/terminology could be considered as identifying the concept(s) that the question(s) referred to and should therefore be avoided. The interpreter could point to the respective flashcards instead of signing the technical terms. This would not interrupt the signing flow in any substantial way. This was an advantage over the workings of a communicator since it is easier to work with pre-determined distinctions between technical and carrier language.

(7) Use of Sign Language for questions and for answers.

Sign language was used in different proportions in the different examinations. When the candidate felt s/he could not communicate through a written answer s/he signed after writing it down. The candidates expressed the need to answer in sign language as a backup to their written answers only in language-rich answers. It is worth reporting that the in-school examiners were delighted not to have to work at interpreting the answers of the candidates in subjects like Physics, Biology, and Physical Education where the candidates' written language was not clear. However, the use of signing for answers is currently still a stumbling block. Further study might result in recommendations that could be acceptable at some later stage. Currently, the signing of answers remains acceptable only for use as a backup in the case of a candidate who had written an answer that was difficult to interpret but seemed to have substantial elements of the answers. It is not known whether any of the signed answers written by the interpreter-scribe in the 2007 examinations were used by any of the SEC examiners.

(8) Sign Language equivalence to spoken language

Since all SEC examinations are written examinations, apart from the short oral and aural components of language examinations, one could argue that allowing sign language as a medium is equivalent to allowing hearing candidates to be examined in the spoken medium, that is, through oral rather than written examinations. Although there are similarities, it is fairer to compare the use of sign language to allowing blind candidates the use of a reader-cum-scribe. It is important to consider how dependent

[2] The ADSC is the ACCESS – Disability Support Committee that is responsible for access arrangements for SEC and MATSEC as well as University examinations.

the development of literacy is on the prior acquisition of the spoken medium. "Many students who are deaf have problems with reading and writing because of their difficulty in acquiring … the conversational form (spoken and/or signed) of the language in which they are trying to read or express via writing." (Paul, 1998, p. 1). Thus the use of sign language by the Deaf child must be considered on a different plane from the use of spoken language by the hearing child. In fact sign languages can also be written (see Azzopardi-Alexander, 2003). However, since the writing system for sign languages is laborious and not so commonly used, and since one needs to know the language represented by the writing system, it would be just as difficult for an examiner to "read" written LSM and more practical for an interpreter to transcribe the LSM into written English at the time of the examination.

(9) Interpreting Hazards
As with any interpreting exercise, there are possible chances of *bona fide* errors in sign language interpreting. There are areas of vocabulary that carry more risks than others. It must be remembered that LSM is not the same as the signed form of spoken Maltese but a manual language with a different grammar altogether. No interpreter of LSM so far has LSM as a first language. It is a fast developing language especially in the academic fields in which it is being utilized at present (see Azzopardi-Alexander, 2003) as a result of the introduction of educational interpreting as recently as 2001.

(10) Sign Language for thinking
Throughout all of the SEC (and mock) examinations there was evidence that the two Deaf candidates used LSM to work things out. There were many occasions when they used their hands to sign quietly (using very small or incomplete signs that could be considered analogous to mouthing words without voice as part of the thinking process). This may have been done to repeat what the interpreter had signed as the candidates looked at the written questions, or to work things out to plan what to write, or simply as part of the problem solving process required by the examination questions. This indicates that signing candidates need to be accommodated separately to avoid influencing each other and to avoid causing a distraction to hearing peers. More importantly, it shows that the signing Deaf child can also develop a language for thinking. We know that "literate thought is dependent upon the acquisition of a first language (especially the conversational form) at as early an age as possible" (Paul, 1998, p. 307), whatever the modality.

Conclusion

Close observation of the Deaf candidates during SEC examinations led to the conclusion that the use of sign language by Deaf candidates for both questions and answers gives them full access to the examinations. Use of sign language for questions comes part of the way to enabling them to access the examinations.

Until it is possible for Deaf candidates to use sign language for the answers to examination questions, most of them will be limited to the less language-reliant subjects. The efforts made by Deaf candidates to learn the spelling of technical terms as reported by the interpreter are remarkable. The efforts were rewarded by success. One might be pushed to conclude that the more one demands of a student the higher the targets reached. Nevertheless, one must recognize the fact that the time a Deaf

candidate needs to study a subject is already many times more than that required of a hearing candidate. This in itself is an important consideration.

One may view the use of Maltese by hearing students as similar to the use of LSM by Deaf students. The request for the use of LSM by the Deaf student may be seen as justified only because of the link to the impairment. Deaf students do not have auditory access to the spoken medium as hearing students do and so cannot learn the spoken language naturally and unconsciously.

Apart from being a different language, LSM is a visual-manual language. The difference referred to above is not so much that it is the Deaf candidate's first language but that it is his/her *only* fully accessible language. However sophisticated the technological aids that the Deaf person is fitted with, there is still incomplete access at best. Certainly, Deaf candidates who do not have a cochlear implant, do not have sufficient access to spoken language and so they cannot learn it in the same natural, unconscious manner that a hearing child does. To a greater or lesser extent it needs to be taught on a one-to-one basis. Even then, the Deaf child's competence can only very rarely be considered comparable to that of a hearing child.

The Deaf child must acquire sign language as a full first language within the critical period for language learning. Fischer (1998) considers this to be important particularly because "deaf children have a right to *all* worlds, and that providing early exposure to sign language in school and at home will provide deaf children greater access to the best of all possible worlds …", that is both the Deaf and the hearing world.

It is necessary to view all this within the position of Deaf candidates in the Maltese Educational system. It needs to be said that it was not until the late eighties that the first Deaf candidate sat for SEC examinations. At that time sign language did not feature in the Deaf child's education at any level. The level of education reached by the candidate was considered remarkable in view of the limited professional support available at the time. The Deaf men and women who followed as examination candidates in the nineties assert that they currently require sign language to access a variety of opportunities in adult life, particularly staff meetings, training programmes and conferences. They consider that they would have done much better with an interpreter in the classroom. They remember clearly the long hours in mainstream classrooms understanding very little and waiting to get home for their parents' help.

Some Deaf students in the nineties were able to access some classes in secondary school with the help of the one teacher of the Deaf who was a fluent sign language user. When the sign language interpreting service was introduced in 2001, the use of sign language in education and assessment became a more realistic possibility. Thus in 2007, after accessing secondary education with the help of the LSM interpreters, it was to be expected that the first two candidates, as described above, would make their request for the use of LSM in the SEC examinations.

Deaf students in secondary education have been expected, at best, to sit for the least language-dependent examinations at SEC level. These are usually Art, Mathematics, Graphical Communication/Technical Drawing and Physics. One of the 2007 Deaf candidates also sat for Biology and Physical Education as well as English

Language. Unfortunately, the targets for achievement in language are still very low partly because students are not usually expected to sit for their SEC examinations in languages. Spoken and written language is considered as a necessary evil which cannot be bypassed since it is used as a medium for all subjects. There is little teaching of advanced language skills by mainstream teachers to Deaf students who lag behind their peers to a considerable extent, and the teachers of the Deaf who feel they cannot cope with the demands of language teaching within the two or three short weekly visits at secondary school level. Unless Deaf students are supported extensively at home, they stand little chance of overcoming the language obstacles.

The Deaf students' curriculum shrinks when there is inadequate communication between the student and the teachers involved. This restriction must be limiting the development of literate thought whether it is considered as determined by the level of literacy as well as if it is extended to include reflective and creative thinking.

The development of a high level of literacy along with the resulting ability to develop reflective and creative thinking may seem a near-impossibility, an unrealistic goal for Deaf children. It should, nevertheless, be the quest within the education of the Maltese Deaf. The "development of critical, logical and reflective thinking… should be the ultimate educational goal for all students who are deaf, indeed for *all* students" (Paul, 1998, p. 308):

> …as many teachers of students who are deaf have wondered, how is it possible to teach or interact on a deep, meaningful level with school subjects such as science and social studies if you are working with students who possess neither communicative proficiency nor academic proficiency in the language of instruction or the language of print? (p. 307)

As Deaf candidates have succeeded in going beyond the minimum expectations, we can, perhaps, begin to see that logical, reflective and creative thinking may well be accessible to Deaf children through the alternative avenue of sign language.

Educational interpreters could replace the present learning support assistants on a full-time basis to provide the Deaf child with full access to the National Minimum Curriculum. This would then encourage more parents to opt for LSM for their children to prevent frustration and failure rather than to adopt sign language as a consequence of failure.

References

Access: Disability Support Committee (2007). *The University of Malta and students with disability.* Malta: The University of Malta.

Azzopardi, M. (1983). The Deaf Child in the bilingual Maltese society: Communication. In C. Magarotti (Ed.), *Proceedings of the IX Congress of the World Federation of the Deaf: Deafness Today and Tomorrow Reality and Utopia (pp.595-601).* Palermo: WFD.

Azzopardi-Alexander, M. (2003). *Dizzjunarju Il-Lingwa tas-Sinjali Maltija, Volume 1 Annimali (Animals).* Malta: Outlook Coop.

Azzopardi-Alexander, M. (in press). *Iconicity and the development of Maltese Sign Language.*

Bamford, J., & Saunders, E. (1991) *Hearing impairment, auditory perception and language d*isability (2nd ed.). London: Whurr Publishers.

Bartolo, P.A. (2001). Meeting the diversity of student needs: The development of policy and provisions for the education of children with disability in Malta. In R.G. Sultana (Ed.), *Yesterday's schools: Readings in Maltese educational history*, Malta: PEG.

Camilleri, A. (1995). *Bilingualism in education. The Maltese experience*. Heidelberg: Julius Groos Verlag.

Evans, L. (1987). Reading through Sign: The Application of theory into practice. In J. Kyle (Ed.), *Sign and school (pp. 181-194).* Clevedon, U.K.: Multilingual Matters.

Firman, C. (2008). A study of word-level decoding skills of 7-Year-Old Maltese Children in a bilingual environment. Unpublished doctoral dissertation, University of Malta.

Fischer, S.D. (1998). Critical Periods for Language Acquisition. In Weisel, A. (Ed.). *Issues Unresolved. New Perspectives on Language and Deaf Education (pp. 9-26).* Washington D.C.: Gallaudet University Press.

Garton, A., & Pratt, C. (1998). *Learning to be literate. The development of spoken and written language (2nd ed.).* Oxford: Blackwell Publishers.

Gregory, S. (1995). *Deaf children and their families.* Cambridge: Cambridge University Press.

Hansen, E.G., & Mounty, J.L. (1998). Interactive video technology and Sign Language for learning and performance support for Deaf students. In A. Weisel (Ed.), *Proceedings of the 18th International Congress on Education of the Deaf, Tel Aviv, Israel. Volume 1*. Tel Aviv: Israel.

Joint Council for Qualifications. (2006). *Access arrangements and special considerations: Regulations and guidance relating to candidates who are eligible for adjustments in examinations. 1 September 2006- 31 August 2007.* UK: Author.

Knight, P., & Swanwick, R. (1999). *The care and education of a Deaf child.* Clevedon, U.K: Multilingual Matters.

Krashen, S.D., & Terrell, T.D. (1983). *The natural approach to language acquisition in the Classroom.* Oxford: Pergamon Press

Kyle, J. G., & Woll, B. (1985). *Sign Language: The study of Deaf people and their language.* Cambridge: Cambridge University Press.

List, G. (1990). Immediate communication and script: Reflections on learning to read and to write by the Deaf. In S. Prillwitz & T. Vollhaber (Eds.), *Sign Language research and application: Proceedings of the International Congress on Sign Language Research and Application 1990.* Hamburg: Signum Press.

Marschark, M. (2002). Foundations of communication and the emergence of language in Deaf children. In G. Morgan & B. Woll (Eds.), *Directions in Sign Language acquisition (pp.1-28).* Amsterdam/Philadelphia: John Benjamins B.V.

Ministry of Education (1999). *National Minimum Curriculum*. Malta: Klabb Kotba Maltin.

Morgan, G., & Woll, B. (2002). Introduction. In G. Morgan & B. Woll (Eds) (2002). *Directions in Sign Language acquisition* (pp. xi-xx). Amsterdam/Philadelphia: John Benjamins B.V.

Nelson, K., Prinz, P., & Dalke, D. (1989). Transitions from Sign Language to text via an interactive microcomputer system. In B. Woll (Ed.), *Language development and Sign Language: Papers from the Seminar on Language Development and Sign Language Bristol 1986 (pp. 77-94).* Bristol: Centre for Deaf Studies, University of Bristol.

Paul, V. P. (1998). *Literacy and Deafness: The development of reading, writing and literate thought*. Boston: Allyn and Bacon.

Paul, P., & Quigley, S. (1990). *Education and Deafness.* New York: Longman.

Petitto, L.A. (2000). On the biological foundations of human language. In K. Emmorey & H. Lane (Eds.), *The Signs of Language revisited* (pp. 449-474). New Jersey & London: Lawrence Erlbaum Associates.

Prinz, P.M., & Strong, M. (1998). The interrelationship between cognition, Sign Language and literacy. In A. Weisel (Ed.), *Proceedings of the 18th International Congress on Education of the Deaf. Volume 1*. Tel Aviv: Israel.