

# Evaluation of using STS in teaching and learning - Educational effects



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## Introduction and aim of the evaluation

Spread the Sign (STS) project started nine years ago as a linguistic support to a student mobility exchange in vocational schools in Europe. The aim of the vocabulary in STS has been to help understanding and communication for vocational students when they arrive at foreign schools. Therefore it has been a big focus on vocational words and signs in STS. However, during the years until today in participating countries, it has been noticed that the great vocabulary source in STS can be used for many other target groups, e.g. for parents of deaf children and for social workers. Consequently, the need of signs for other living areas and the claim for better qualities, is raised. The coordinator of Spread the Sign writes on the website:

This webpage is administered by the Non-Governmental and Non-Profit Organization European Sign Language Centre. Though the primary objective of the Centre is to *make national sign languages available to people with hearing disabilities, the overall ambition is to make sign languages accessible to everyone*. This project is an ongoing process of documenting national sign languages, we have come quite far, but much remains (my italics).

The evaluation of the Leonardo project 2012-2015 Spread the Sign (here called STS or STS Dictionary) consists of analyzed documentation of an *educational intervention* from each participating country in relation to using *information and communications technologies* (ICT) and evaluation of the project from the point of educational effects. In our case we *investigate how ICT is used in group practice in learning national or other sign languages*. In addition, it was an intention to use the evaluation as a foundation to a guideline about using ICT in learning new signs.

Accordingly, the aim of this evaluation is how Spread the Sign (STS) can be used as an ICT-resource in group studies of sign language(s). The evaluation questions are:

- How accessible is STS for teaching/learning?
- What kind of conditions is needed for successful use of STS?
- What kind of cultural differences can be seen in use of STS?

The theoretical base of the evaluation is in socio-cultural perspective of learning. According to social-cultural perspective we have in each situation a possibility to learn and appropriate when we are in interaction with others. What and how much we learn depends on cultural circumstances in human practices. Therefore, the culture - in society, in schools, in classrooms - influences how we learn. As cultural individuals we are using different tools within the interaction with others.

There the tools – both linguistic and physical - are those available resources involved in the interaction with other people (computers, Ipads and cellphones are the digital devices in our focus, and STS as well is seen as a digital resource).

## Method

In each participating country one or two persons (educational agents) in the project team has been responsible for collecting data about the usage of STS in some learning groups/classes – from kindergarten to adult education. The educational agents have through observations of lessons and through interviews documented what and how the students and the teacher have done, with support of STS, in their teaching and learning and with what type of result. The educational agents have used a questionnaire (see attachment) made for this evaluation ensuring systematic evaluation design and comparable answers between the participating countries.

The data has been collected from four countries in the autumn of 2013, and from eight countries in the spring of 2014 and 2015. The idea of making these data collections at different times during the project period was for the opportunity to capture some possible new experiences when the project was in process. The tighter STS descriptions of experiences could be achievable in this way.

Observations and interviews in both the United Kingdom in two vocational classes and in Sweden in a refugee class for adults were done by the author. The purpose of the observations and interviews was to increase the understanding of the usage of STS in classroom situations, and to make more relevant analysis of data from other participating countries. In the data analysis there were also other documents used, e.g. two articles from Portugal and a presentations of disseminations from participating countries.

Before the start of collecting material, the educational agents in participating countries got information about choice alternatives of the study groups in relation to age, hearing status, skills in sign language, and course subject for group studies and teacher's STS-knowledge. The chosen groups/classes should use STS in their everyday educational activities. The educational agents were asked to prepare a few observations in the classrooms and interviews with 2-3 students at 10-15 minutes each. In addition, they got information about how to interview and a short training in how to observe.

The educational agents had the possibility to contribute with documents such as student notes, proposals for future usage of ICT and other course documents. The focus for the observations and interviews was on teaching, with support of STS, and the use of STS by the students as learning material in classroom. A part of that was to look at the use of ICT- resources in teaching and learning.

The data from the autumn of 2013 was preliminary analyzed and introduced at a meeting in Venice in February of 2014 (see attachment). The answers from the

spring of 2014 and 2015 were added to the presentation at the meeting in Madrid in June of 2015.

## Background

Before the evaluation results are presented, the preconditions for the study groups with course subjects and ICT-resources in classroom for analysis will be introduced. The groups are using support of STS in their lessons.

### Groups using support of STS

Four of the participating twelve countries were educational agents from Spread the Sign teams. The once who collected data in the autumn of 2013 were Lithuania, Poland, Estonia and Turkey. In Spain, Austria (2 groups), Portugal, Latvia, Germany (2 groups), Czech (2 groups) observations and interviews were done in the spring of 2014 and 2015. Observations and interviews in Sweden have been done in the spring of 2014 and in the UK (2 groups) in the spring of 2015. A total of 16 study groups were attending the evaluation work.

- In the evaluation of the usage of STS the eleven (11) out of 16 groups were deaf or hard of hearing. Eight groups of them were *vocational school* students in the age between 15 and 20 years. On an average it was 4-10 participants in each group. In the UK there were 1-2 immigrant students in the two classes which were observed. Observations were made in courses in Information technology studies and national spoken language. In one case (in Germany) it was English as course subject with the aim to learn German and English sign language. With this exception it was no courses about other languages, nor any preparing course before mobility exchange for the vocational students.
- In the two countries, Spain and Portugal, the evaluation groups were constituted by children in age 8 -12 years old in *integrated classes*. They had Natural and Social Science as course subject. STS was almost used for the deaf students in these classes.
- In Sweden the usage of STS was evaluated in the class with *deaf refugees and immigrants* from six countries in the age of 27-53 years, whereof one illiterate, studied Swedish and Swedish sign language.
- The five (5) groups had *hearing* participants who were often *college or university students or parents of deaf children*. Many of them were *social workers or teachers* as well. They were in the age of 16 -55 years. These groups were studying national sign language.

In addition, it is higher number deaf and hard of hearing students than hearing students in evaluation material. If the hard of hearing participant in vocational school are culturally deaf or culturally hearing cannot be seen in this data because students can study sign language as one of the school subjects. These differences can be significant how the data about the usage of STS in the classroom can be understood and analyzed.

The ages of the students is higher amongst the hearing participants which can be understood by their voluntary interest in learning sign language compared with motivation in younger students. They have ambitions to work among deaf people or to follow their deaf child linguistically. The mainly focus among the course subjects is on national sign language.

Hearing status of the teachers is missed in some data. In the eight noticed cases teacher for hearing students is almost a deaf person. The teacher in the integrated classes for the children is a hearing person. In the vocational classes the teacher can be a hearing or a deaf person. The teachers show a variation in their knowledge about STS which influences how they use STS in the classroom.

### ICT-resources

Preconditions with available information and communications technological equipment in classroom reflect which opportunities teacher and students have to use Internet and in this case STS, and to create educationally innovate work making further progress.

Availability of ICT equipment in the classrooms is very varied from one country to another. In one case the teacher may book equipment to the classroom, and the students can use ICT in library or visit computer class. In another case there is only one computer and tablet for the teacher. In the third case “the classroom has 11 pc; one belongs to teacher, the others are for students. There’s a smartboard for students as well.” In best case “each student has its own computer in addition to Ipad which they can use at home as well”, according to reports from the participating countries.

It is common that the number of computers or laptops in classroom is not enough, usually there are computers shared by 2-3 students. Sometimes the use of fewer computers has been solved by students doing the work in pairs or share the time with other students. It seems that students’ own smart phones become more important as learning equipment on lessons as well.

In all cases Internet is accessible through the different ICT-equipment solutions. A disadvantage to note in some countries is that Internet contact is slow and teacher and students are wasting time when the lesson contains some Internet ingredients.

In addition, the number of computers, laptops or tablets and the existence of a projector or smartboard in the classroom regulates what kind of work the teachers can prepare for the students and what kind of innovative work they can create. For example, if there is only one computer for everybody in the classroom where topics, pictures etc. are projected by data projector, the lessons seems to become very teacher-dominated. An educational agent from one of the participating countries writes:

The process of learning is provided using lecturer's computer with the Internet connection and projector. Lecturer is using CDs, laptops for learning; students use their smartphone. During the lessons the laptops, the internet, as well as sometimes smartphones and printed materials are used.

When there are a fewer amount of computer workstations than the number of students, it can create unrest in the classroom because students change their workplaces to work on the PC a lot of times during the lesson. Some of the educational agents say that it is easier and faster to work if every student is working with their own tablet or smart phone instead of having PC- workstations.

## Results

This chapter shows many kinds of teaching and learning situations which gives a good picture about the usage of STS in different contexts and the many opportunities that STS offers. STS is a linguistic information source here and now, and STS can be a first step for students to develop their educational use of Internet. For the students skilled in national sign language STS allows a big base for analysis of signs through comparisons. STS also encourages to learn other spoken and sign languages.

### Work methods - The point of departure is the word

How STS is implemented as a work method is depending on a cultural point of view which traditions and type of knowledge in teaching exist in the participating countries. In addition, because of the construction of STS, the given start is to begin with the word.

Task: Look up in the dictionary five verbs beginning with the same letter. Each student has **one letter** (for example "P"). Each student shows the verbs and then they can think up sentences using these verbs.

The most common work method we can find, is in the lessons in national sign language: "The teacher introduces new signs and supports the students in the practice of the dialogues." This is a useful example of teacher-dominated learning of words and signs. In addition, explanations of concepts are often needed in introduction of new signs. A dialog between students emerges and concrete

communication situations are created when knowledge about new signs in different topics/contexts is growing. The teacher supports the students practice dialogues like these.

Basic dialogues and basic vocabulary (numbers, months, colors, seasons, etc.) will be presented and practiced. Especially during these exercises STS is used. After the presentation of each sign by the teacher, the students are able search the sign in STS and repeat the vocabulary. In this way it is possible to take into account the different learning tempo of the students. Later, students were asked to practice small dialogues and "show them off".

When students meet a new word, they learn to write that, then to read with teacher (lipreading) and then they learn the sign with support of STS or dictionary book. If they can't find the sign of a word in any of these materials they ask an interpreter and take a photo of the sign.

New signs through the teacher. But the teacher encourages using STS. They are told by the teacher that there is the possibility to look up new signs in the STS-database and that furthermore they can compare signs from different Sign languages. (No specific tasks) The teacher (deaf) is having a rather good connection with the students. He is answering questions very patiently and tries to make sure that everything is understood by the students.

As best the lesson has a bilingual approach with contrastive analysis of the two languages - the spoken language and national Sign language. In less successful cases the lessons are about looking for sign after sign alone and place those in the beforehand prescribed dialogues.

Exploitation of Internet resources is generally varied in the work methods. The most common Internet material is STS - of course - in the Sign language course – but how are other Internet resources used? In the refugee and immigrant class in Sweden the students are working individually or in pairs to fill “work books” in Swedish – in Internet. They are using Google-pictures, many other Internet sources and CDs produced by the folk high school for deaf in Sweden.

For the students in the integrated classes in Spain and Portugal the content of the lesson in Natural and social Sciences is introduced by two teachers, one using an oral language (tutor) and the another one using sign language (co-tutor). Power point-presentations are used as support. In addition, the lessons are re-explained and students are asked to highlight the aspects they consider as more important. The documents about these classes don't contain anything about using Internet. However, in many countries it isn't yet common to use Internet sources as classroom material in everyday teaching.

The teacher is not often using this internet resource. In some cases STS is used to clarify ambiguous Signs by looking up how the Sign is displayed in STS. Not all the Signs in STS are in Latvian Sign language.

We can here note that STS can be a channel for teacher and students for new learning experiences by Internet. The research literature from recent years about

the use of Internet in teaching shows that the knowledge about how to use Internet in lessons is generally only emerging. In the next chapter the evaluation material from the twelve countries shows how STS as Internet access is used in teaching.

### How STS is used in teaching

There are many examples in this chapter demonstrating how STS is used in teaching. This quote below shows the most common way to use STS. It is, moreover, an example from teaching beginners in sign language. *Teacher demonstrates new signs and students look these signs in STS*, repeat and practice them with each other.

The students learn Sign language mainly in the dialog. The first lessons start with simple dialogues. Moreover, also the German finger spelling and basic vocabulary (numbers, months, colors, seasons, etc.) will be presented and practiced. Especially during these exercises STS was used...After the presentation of each sign by the teacher, the students were able to call the sign by STS and repeat the vocabulary. /.../ Later, students were asked to practice small dialogues and "show them off". When preparing the dialogues the students have unknown vocabulary in STS called and practiced.

STS can also be used in individually teaching. Sometimes a student gets individual work with aim to describe the work result for others in Sign language. There the student is encouraged by the teacher to *make use of STS in preparing the presentation*. It can be many other kinds of individually teaching with support of STS, one of them we can see in quote below.

The class has a hearing teacher who signs at the same time when speaking. The students are in age of 16. There are three students working individually in the classroom, the fourth pops up after the break. One of the students is from Poland and has CI. He has been in the UK in two years and has developed well according to the teacher. The assistant uses STS for review of certain words with him while he is looking in iPad. This is not used and according to the teacher he doesn't yet manage it independently. The words written on a paper is about litre and other measures that the student shows with finger spelling to the assistant who looks for signs and words in STS. They play with these words in different ways as well but not with support of internet.

The observation shows how the immigrant student is learning new English concepts without comparisons with any other languages. In this level the student isn't yet ready to use STS as Internet support. *Through continuous access to an iPad he is prepared by the assistant to manage STS and Internet himself in near future*. The next example shows how STS can be used in both homework and in lesson. This connection with each other can be seen as good boost in learning new concepts.

A deaf female teacher is teaching four male students in age 16 in national Sign Language on level 2. The theme for the lesson is travel. The teacher uses key words on Smartboard, poses some questions now and then about students' experiences, such as what they can about the names of airlines. The students sit in a row without table with any opportunities to note anything. Although it's teacher-dominated teaching students are active and the teacher is enthusiastic. The students are discussing the names of cities and countries they had chosen in their homework supported by STS. In this discussion students are comparing differences and similarities between signs and STS is used. The students are usually working individually because the teacher want have control about their progression, she says.

In discussion about comparisons between signs, *STS gives an easy access at the same time for many students*. This kind of teaching can be developed in group work or pair work in more independently way for students. In the beginning tutoring by teachers can be necessary until the students learn the work method with support of STS.

We have seen some examples of using STS in lessons. Although STS is a dictionary it can be used as digital resource in many ways in teaching to motivate students to look and use new signs continuously. However, it seems that STS is used much at home to fulfil homework as we can see in next chapter.

### **STS as information source**

Homework with the purpose to look after new signs seems to be most common in national sign language courses for beginners and for students in vocational schools who are learning vocabulary on new topics. When STS is used as support for homework it can be seen as information source here and now.

After each lesson lecturer assigns homework: check the signs you do not know (lecturer has to choose and prepare the signs at first). The following lesson students show what they have learned and the lecturer checks whether they worked at home or not.

Students use the STS dictionary especially during homework. For example they should prepare a narration in the Sign language on a given topic. If they do not know a sign they can look it up. Task: Look up in the dictionary 5 verbs beginning with the same letter. Each student has one letter (for example "P"). Each student shows the verbs and then they can think up sentences using these verbs.

As the chapter about work methods already has shown that it is the teacher who introduces new signs. The teacher also encourages to look up new signs in STS. The collaboration between the teacher and the students is often ongoing to find the way to understand implications of the new signs and words. Here is no difference discovered between course subjects. It means, although learning signs with support of STS must be facilitated by teacher in particular in signing on new topics.

The teacher assists students in the comprehension of the text, if the vocabulary with the help of STS isn't understood, more extensive explanations of the teacher in national Sign Language are necessary.

The quote below illustrates the most common way to use STS as information source – often at beginner level in learning national sign language there it is important to quantify vocabulary.

Students should find signs that they do not know. They make sentences from these signs. Lecturer checks the correct use of the signs. Students broaden their vocabulary this way. Instructions: Find 3 words for which you do not know the sign. Use the signs in the sentences. Write down the signs according to the hand position. Use the STS dictionary.

In order to use STS on more different and creative ways than only as information source, it requires more sign language skills which is shown in the next chapter.

### **STS as base for analysis of signs through comparisons**

The two Spanish interpreters who studied BSL in the UK were interviewed about their experiences about the use of STS. One of them said:

I am sure that STS's quality is not sufficient for level 3-6. It is enough for everyday use, such as for staff, in the deaf school etc. For example the parents don't study more than up to level 2.

At higher levels of professionally focused training in Sign Language STS can be one of the sources to probe characters of signs from different perspectives. For example in one of the observations in the vocational school, described here earlier, the sign language teacher used comparisons showing different characters of signs for cities. Her purpose was to let students to discover and discuss evolvment and hand shape forms of these signs. STS as a dictionary has thus a rich ground material to many kind of comparisons between signs, and possibilities to explore implications of the signs. In addition, STS with the access to signs from many other countries contributes to rich comparisons between Sign languages.

### **STS in learning spoken languages and other Sign languages**

It is not uncommon that comparisons between different sign languages are used in lessons in national sign language courses to facilitate the understanding of implications of new signs. STS can also be used as a support when teaching other spoken languages (other than the national language - in many cases English).

In this course, it is not primarily about the acquisition of Sign language, but rather with the help of STS teaching English, in particular to assist the text comprehension of English texts. In English lessons often problems arise since a translation of the English vocabulary in the German language only help, if the corresponding German vocabulary is known. STS can offer support here. With the help of the corresponding

English and German signs the students are able to understand the meaning of the vocabulary.

For the procedure: The students are reading the English text and mark unknown words. Then they enter the English vocabulary in STS and then they switch to the German signs. In this way, students learn not only the English signs, they also immediately open up the meaning of the German word by the corresponding German gesture. If all unknown words are cleared, the text is behaving in DGS and then they repeat the new vocabulary in DGS and English Sign language again.

This way to learn words in other spoken and written languages can be helpful in many cases, as in receiving deaf refugees and immigrants in varied ages. If the person doesn't know any sign language, pictures can be used instead, as in deaf immigrant classes in Sweden. This need can increase in several countries. For example, in every class in the vocational school in the UK they have one or two deaf students coming from another country without the knowledge in English. STS is used extensively for these students. The two Spanish interpreters who studied BSL say in interview that, in comparison to their fellow students, it's easier to learn a new sign language when you already know one from before.

Because the comparisons of signs seem educationally effectual in the learning of new signs and words it is important that STS as program can easily contribute to this development. One of the users mentions some technical shortages in their reports and how they affect the teaching and use of STS:

During the comparison of Signs in the STS-database it is rather inconvenient that the language (German (Austria)) has to be chosen every time. It would be better, if a language once chosen would remain until another language is chosen. There should be a short instruction (written or screenshots) how one can compare two signs simultaneous. The teacher proceeded after the principle of trial and error". And in testing of the STS-database it is not quite clear how the comparison of two different signs works, because there are no instructions. The color, where you choose the word category is not good, because it is hard to see

### **STS as channel to use ICT even more**

STS is an information and communications technological resource. Assuming students must be prepared to learn to use ICT in many educational ways, and that these skills are indispensable prerequisite for future engagement in society, we can ask how the use of STS can contribute to find and use these possibilities and resources.

We can also ask which role the teacher has in developing interest in students to use the Internet, for example stimulating students to do some video clips to YouTube supported by STS. Some kind of net games can also be possible to create in lesson activities supported by STS. Learning other sign languages can be motivated by Skype or Facetime contacts with deaf from other countries. Some of

participating countries are only touching these questions in evaluation reports mentioning that Internet resources generally aren't used so well in classroom, and others not at all.

STS can contribute to use ICT in school context in more interactive ways but it requires imagination and new ways to see lessons. According the evaluation, the suggestion here is - instead of the guideline - to create an online discussion forum *Using of SpreadTheSign (STS) in education* for sharing ideas, tips and creative advices how to use STS on better and more exiting ways in teaching.

### Summary of the advantages with STS

As the earlier evaluation reports have shown the advantages with STS are many when comparing with the dictionary book, according to the interviews in this evaluation.

- As internet resource STS is *easy accessible* with no cost. Everybody has free access to it and it is always open anywhere you are. It is quick to find the right sign and everybody can seek the words/signs independently.
- As internet tool STS is *easy to use* with no need of help. It is available as an app and perhaps mostly used in smart phone. The app is also easy to use to short conversation with hearing persons.
- As internet dictionary STS presents signs by body movements and gestures which is more *effective to learn the signs right*. For example it enables understanding of a given word by observing the corresponding gesture in different Sign languages: STS helps to visualize new concepts.
- As international dictionary STS gives possibilities to many kind of researching of signs, for example through analytical *comparisons between sign languages or between national sign language and national spoken language* from different aspects.
- As big "storage" of signs STS can *offer to set up online courses with STS-vocabulary*. An example of it is online-course as a teacher in Doncaster in UK has designed. This course has a self-motivating limitations to fulfill tasks: you can't continue to next level before you have done your tasks on the level before. The role of teacher is however important as motivating support in this kind of courses.

To sum up, what you as student needs to make the most out of STS? You have access to internet (with ICT- equipment as phone, computer or tablet) and you know how to use ICT. You know the words are the departure looking signs in

STS. And the best of all, you have an enthusiastic teacher with good skills in sign language guiding you in contexts of the signs and words.

## Discussion

Now it is time to draw outlines with some conclusions as answer to the evaluation questions. The aim of this evaluation is how Spread the Sign (STS) can be used as an ICT-resource in group studies of sign language(s). With this aim the evaluation questions are: a) how accessible is STS for teaching/learning; b) what kind of conditions is needed for successful use of STS; what kind of cultural differences can be seen in the use of STS.

The data of observations and interviews about the using of STS in classrooms has been collected by one or two persons in the STS-teams in the participating project countries in autumn 2013, and in spring 2014 and 2015<sup>1</sup>. More data as articles is collected from some of participating countries. The articles haven't been included in the systematically analyzed material but they have contributed as contrastive material in the understanding of results.

### Accessibility of STS for teaching/learning

Accessibility of STS can be seen in many ways, for example which kind of availability of ICT there is in classrooms, how many devices and how available they are during lessons every day, how the use of internet is integrated in teaching or which kind of traditions teachers have about the use of internet. Availability of ICT is very varied between countries. In addition, in most of cases the students can work same time with internet in classroom if they also use own smart phones. However, the results in this evaluation data indicate the use of internet is generally not very common in everyday teaching in classroom with exception of Sweden, there the immigrant student's work with Google-pictures and with many other internet sources most of the lesson time.

In most cases STS is used as information source when the teacher asks the students individually or when the students work on pairs looking certain signs to use them in a dialogue practice. Among the hearing students STS is used most at home for looking signs to fulfill their homework. The use STS as information source can also have unexpected effects. As a suggestion, the regular use of STS in integrated classes could make sign language more visible and on that way have effect to create group affinity between hearing and deaf students in classroom.

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<sup>1</sup> Most participating countries haven't English as their national language which can have influenced how nuanced reports they submitted.

According to the results, because all students today have a smart phone and access to an app, the pedagogical access to STS can be even more improved by technical solutions and pedagogical instructions. For example, there should be a short instruction (written or screenshots) how two signs can be compared simultaneously.

It seems, since STS is accessible enough for teachers and students, STS as an internet resource for teaching/learning could be exploited even more pushed by teachers who are interested in new ways of learning. For example, a teacher can have lessons as a video conference online together with a class from another country when the both groups have studied vocabulary on some shared topic.

### Conditions for successful use of STS

The role of STS as a classroom activity in day-to-day practices is varied. It seems STS is mostly used as a digital information source which can be more actively consumed in the classroom. The use of digital sources is often regarded as something separate - as a supplement - from teaching. Therefore, perhaps, STS is not often used in other teaching as in sign language lessons. STS is more often used as a homework tool by students to increase their vocabulary with new signs. What more STS can afford to interactive learning in the classroom has not widely been discovered.

The evaluation shows that the need for foreign academic signs/words for mobility exchange is slowing down and the need for every day signs in the own national sign language has expanded. In addition to increased vocabulary of every day signs the role of the teacher is important how ICT, and in this case STS, can be effectively managed for learning.

The role of the teacher is important how STS can be used. It is not enough only to introduce new signs and encourage using of STS as an element of *didactic discussion between teacher and students*. At the first, the teacher must be prepared to be as a scaffold to create *meaningful participating in lessons* for students. To work collaboratively and to write linguistically well are e. g. two important skills in society there the teacher can develop the use of STS on new visual ways. For example students can together with support of STS create small visual edutainments in YouTube which combine learning with entertainment. At the second, the conditions for modern learning are to have a *critical approach*. How can the teacher scaffold students to discuss about concepts (signs, words and phrases) and challenge them? How can the teacher use STS to contribute to this discussion in the classroom?

Cultural differences in use of STS had not been noticed in data from the participating countries and neither in observations and interviews between countries. However, it is a surprise that teaching still is dominated by questions

and answers between teacher and students. It is possible there are differences how teaching/learning is influenced by the theoretical understanding of pedagogical questions and how the deafness in this context is understood, as disability or linguistic capacity/attribute. Anyway, the data is too small to indicate anything in this case. By contrast, it seems that economic possibilities influence which access to ICT the evaluated classes have in the participating countries.

### Conclusions about STS as internet dictionary

“Welcome to learn sign language! This webpage is a teaching aid to make sign language accessible to everyone”, is the statement on the website of Spread the Sign. This evaluation as two earlier evaluations in Spread the Sign project shows STS fulfills the need to learn sign language in many groups partly through vocabulary for beginners, partly through vocabulary on specific areas. The evaluation can state, moreover, that for other groups STS is a great source for probe different kind of signs and using of them. However, to use STS more as information source e. g. to play dialogues, to contact foreign classes, to play edutainments, good skills in sign language (and an enthusiastic teacher) are needed.

STS shows a large picture of signs<sup>2</sup> used here and now in the participating countries. The STS- teams are almost producing signs in vocational schools which fact can reflect in choices of alternative signs. There it can for example exist more signs used in specific regions nearby vocational schools than from other regions. (Traditionally deaf schools have produced signs spreading over nearby region.)

STS as dictionary is an ongoing digital process producing by teams who are more representing users than linguistic experts<sup>3</sup>. This dictionary has potentials to expand in vocabulary and improve quality of signs in near collaboration with users which provides more opportunities for increased critical approach<sup>4</sup>. To ensure its usefulness STS needs to be continually updated and critically discussed by users.

We haven't anymore authorities or agencies deciding which signs or words shall be used, and there is no owner of the words or signs. It is users themselves who decide which signs/words are good (or right) enough or bad. The good ones are shown through they'll be remained and the bad ones disappear. In ongoing digital form, STS can be seen as a democratic Internet product as Wikipedia.

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<sup>2</sup> But not of Sign languages

<sup>3</sup> The experts, as linguistic researchers, are continuously used in linguistic discussions for example in international STS-meetings.

<sup>4</sup> This question has become evident in international STS-meetings.