The Practical Application of PICTOGRAM

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Swedish Institut for Special Needs Education
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Foreword

The inspiring response we have received from users of the symbol system Pictogram from pre-schools, schools for mentally retarded persons, day centres and homes has led to the creative development of our symbol glossary.

The availability of computers and a concept keyboard specially adapted for Pictogram makes it possible for people with different functional disabilities to write independently. This has lead to Pictogram being used as the main alternative to the written word today.

These picture symbols provide children and adults who lack the ability to read and write normal texts with a simple aid for their memories and thoughts, making it possible for them to keep diaries of what they have done and to plan what they are going to do in the future in their calendars.

The revised writing program “Write With Pictures” has a number of new and inspiring functions. One exciting addition to the program is that users can easily send e-mail messages to each other.

The symbol system provides rich opportunities to adapt communication maps individually to those whose cannot speak or those with very limited speech. Using speech synthesis and the concept keyboard called Flexiboard, speech communication boards can be produced for different needs.

Hoping that tips and ideas in this publication will bring joy to many “Pictogrammers”, we send our thanks for the inspiration we have received from all teachers and students at schools for the mentally retarded.

Hedemora, March 2001
Kerstin Falck
Introduction

It is now 16 years since the first edition of Swedish Pictogram was issued. At that time, there were 400 symbols. Since then, the symbol system has been updated in accord with the wishes of users and now includes more than 1,000 symbols.

During this period, Pictogram has continually been re-examined, developed and revised. In order to broaden our activities, an advisory Pictogram Board has been appointed. The Board is made up of representatives from the Swedish Institute for Special Needs Education, The National Swedish Association for Mentally Handicapped (FUB), The Swedish Handicap Institute (HI), the ala research foundation (ALA,) schools for the mentally retarded and day centres.

A cooperation agreement has been drawn up and signed by SIH and logopedist, Subhas Maharaj, Canada - the originator of the symbol system. This agreement gives greater freedom in our work with Pictogram both in Sweden and internationally.

This publication is also the result of requests from users asking for tips about how to go about learning to use the Pictogram system and how the symbols can be used in practice in different activities.

Recurrent statements and questions about Pictogram have cropped up at communication courses, in-service training days and workshops. Before we go into the actual practical educational part of this publication, we will discuss these different questions and endeavour to provide answers.
Common Questions About Pictogram

Why are Pictograms black and white without any other colours?

The technique of making picture symbols clear and easy to perceive visually in white against a black background, making them easy to read, is old and well-tried. We see these picture symbols everywhere in the world. They provide us with quick and important information, often seen from a distance, about restaurants, telephones, toilets, directions for travel, etc. We can easily interpret these international symbols without the need of a written or spoken language. Of course, Pictogram does not prevent anyone from looking at and discussing pleasant colourful pictures and photographs! However, Pictograms are picture symbols for communicating. They replace and support, where necessary, written and spoken language. Just as in the case of letters, Pictograms are in black and white, making them easy to read. It would be laborious reading a book with beautifully decorated letters in different colours.

Every detail and colour in a picture governs the way in which it is interpreted.

The special character of Pictograms - strictly stylised in white against a black background - makes it easy to recognise them even when they are very small. This is important, as Pictograms are used to keep diaries, such as Filo-faxes.

On Monday buy “kepa” present congratulate Kalle birthday.
Pictograms are difficult! What level of development is necessary in order to understand them?

Every language is made up of more or less difficult symbols. We do not expect young infants to understand all the words of a spoken language before we start speaking to them. We invite them to “bathe in the language” by speaking to them, reading stories, asking questions, commenting on pictures in children's books, etc. Given the proper stimulus, different levels of understanding are reached.

The same can be said of alternatives to spoken and written languages. Different individuals reach different levels, depending on their own situation, preconditions for alternative ways of communicating, and how much they are given the opportunity of “bathing in the language”. A small child that enjoys simple picture books, recognizing the cow and the car and showing this by naming them or imitating them, can also recognize the corresponding picture-like Pictogram. Experiments with children aged 13-24 months have proven this to be true.

Several experiments have been carried out where mentally retarded people of different ages have been asked to interpret new Pictograms without having learned them beforehand. It is true that many Pictograms are difficult and are wrongly interpreted. Words are also difficult to understand before you have learned their meaning. Quick tests of new Pictograms within personnel groups have given different interpretations. The correct interpretation is easily accepted and remembered without any problem. Adults and children who are mentally retarded also learn to interpret the symbols. By simply giving people with speech and language disorders the opportunity of “bathing” in sign language, Pictogram, Bliss or some other communication system, we have learned how far their understanding goes. Pictograms 1,000 symbols do not constitute a natural language that we have all around us, so a deliberate effort is needed to learn them.
To recognise is easier than to interpret a series of events and the symbolic meaning of …

These must be explained and learned.

Reasonably good vision is required to be able to assimilate Pictogram. Most people with bad vision prefer Pictograms to colourful pictures with lots of details. Others can find black and white pictures difficult. Let them try and see which system suits them best.

You can communicate with your friends if you have a common written language. Pictogram serves as such from the cradle to the grave.
Must the word be written on the Pictogram card?

In order to be able to find a symbol in the register or on the computer among 1,000 symbols in our picture base, it is necessary to be able to search using the word in question. It is also important that each symbol has a fixed meaning, otherwise there is a risk that too many interpretations are given, and sometimes the wrong interpretation. For example, when translating the symbol for *congratulations*, one country interpreted it as *thanks*.

![congratulations](image1)

in order to convey an idea and be correctly understood in the same language! It is, however, permissible to change the meaning for use in one’s own activities. For example, the symbol for *group* is often used for *class* or *assembly* in connection with school activities.

![group](image2)

The possibility of creating your own combination of symbols is described in the section: Computer program “Write With Pictures”.

Why do people have no neck?

In his book “The Graphic Design of Pictogram”, Manne Lidén explains why people have no neck in Pictograms. Attention is drawn to the neckless head. In the case of symbols where the mimic carries the meaning, the neckless head can be drawn larger in relation to the body without giving the impression that the picture depicts a child.

![angry](image3)  ![full](image4)  ![clover](image5)
The profile of a head with a neck would also require depicting other details of the face such as the chin and the nose. With no neck, the details are not needed. This can be seen in the following examples, where the neck has been drawn as a comparison to the corresponding neckless symbols.

Some people fear that autistic children could be frightened by symbols of neckless people. If this were the case, another alternative of communicating would, of course, be necessary. Just like other children, autistic children are different, even if they share a common disorder. Many of them accept and find it easy to use Pictogram.

**Is it allowed to colour Pictograms?**

Making picture books with Pictograms and colouring them is good fun and good practice. It doesn’t really notice, either, if you happen to colour outside the picture in the black area. You still get a good result! Otherwise, the basic idea with the symbols is that they should be white against a black background. Certain exceptions have been made in Sweden. Each day has its own special colour, and these colours have become meaningful. They are a great help for mentally retarded people in remembering the days of the week.

This is what the days of the week look like:

In the latest version of the computer program “Write With Pictures,” there is a “not” function in the form of a red cross that is laid over the symbol that is negative.

I am NOT angry. I am sad.
Generally, Pictograms are not coloured. Freedom to make personal changes in the symbols can, for example, be made use of by colouring the neutral flag symbol in order for it to symbolise a particular country before travelling there or getting a visit from a foreign country.

Sunday ice-hockey Sweden-Canada

Which Advent Sunday it is can be illustrated by colouring the appropriate number of candle flames. The text to the symbol can be changed in “Write With Pictures”.

Why have certain Pictograms been changed in the latest version?

Pictogram exists now in close to 40 countries in all parts of the world. The Swedish Institute for Special Needs Education issues a picture base for 13 European languages. International cooperation is important for practical and economic reasons. Symbols for foreign countries must be adapted in part or changed for cultural or other reasons. It is important that the design and syntax of each Pictogram is as pictographically correct as possible, in order to function within our own country and between countries. With reference to the guidelines in the book “The Graphic Design of Pictogram”, symbols have been stylised and purged from different details. As an example, the old symbols for cook and July have been replaced by new symbols.
Details in symbols that turn one’s attention to something in particular have been taken away. In this way such symbols have become more general.

Symbols that have more than one meaning cause conceptual problems and are difficult to search for on the computer. Therefore, symbols for

Among others, have been replaced by

Another syntactical interplay that will be a common feature is that the subject (the active figure) shall be completely white, whereas the object (that the subject relates to) is shown as a white outline. Therefore, the symbols for

have logically and consistently been replaced by new corresponding symbols:
By applying this model, it is possible to clearly show which measurement is being symbolised in a set of measures, whether decilitre, tablespoon, teaspoon or one-millilitre.

Words designating position are shown in relation to a contour line.

Another example of basic rules that apply to the continuing formation of Pictogram is that the symbols for room and building shall enclose the contents.

Here are the old and new symbols for living room and sauna:

The basic symbol for house is included in the symbols for home, school, café and museum.

All these changes will perhaps cause some amount of concern among the users. They have been reading Pictograms for many years now and find it difficult to understand that some of them now look different. However, the benefits are obvious. Of course, it would have been better if these rules had come earlier. But it is not more difficult to interpret the revised symbols.

None of us could have predicted the immense development and spread that Pictogram would have. Changes have led to a better system of symbols and should therefore be implemented as soon as possible.
Practical and Teaching Tips

At a communication course for training school teachers the question was asked: "When is a suitable time to start supplementary alternative communication training?" The answer given by the lecturer was that when you ask that question, it is high time! Language develops most intensively at an early age. The brain is then wide awake for language and it is important to take advantage of this fact early in life - even when dealing with children who have functional disabilities. Today, we have many positive experiences with infants when it comes to supporting communication with body language and signs used by the deaf. Mimics, body language, gesters and prosody make it easier to grasp the spoken language. When we communicate with small children, we use these channels spontaneously. Those who are gravely mentally retarded need this support throughout their lives.

Pictogram is used at many pre-schools today where mentally retarded children have been integrated into classes. In these cases, Pictogram has become a common model for all the children when it comes to learning to read and write. When they start school, we have seen that children who have been at training schools are well-acquainted with the symbols. Adults who have perhaps never had the opportunity of reading Pictograms before, interpret the symbols, but they also need to “bathe in the language” in order to get used to using the symbols in different connections. The teaching tips we give here are intended for pre-school children and students at schools for the mentally retarded. Many of these ideas can even work well with adults who are mentally retarded, but it is important that the exercises are then adapted for adults.

Early Pictogram Training
Playful Exercises for Pre-Schools and Training Schools

Picture Books

Simple picture books and storybooks can be furnished with Pictograms and drawn illustrations.
Pictogram Puzzles

Use the larger cards (10 x 10 cm) and cut them as suggested below:

Opportunities of integrating with students from elementary schools arise when playing outdoors or in connection with open air days. They can all "read" the same word and have the same chance of winning! One half of each symbol card is hidden somewhere close to the pre-school or school and the students are given the other half. Then there is a search for the half that is missing in order to complete the whole symbol.

Students practice recognizing details of the symbol and eventually perhaps the block word.

Another exercise that is appreciated, giving the same effect, is to show Pictograms on an overhead projector, hiding the picture at first with a piece of paper and gradually removing it so that the picture becomes clearer and clearer. The students may guess as soon as they think they know what symbol it is. Guesses may be made verbally, by sign language or by pointing to the Pictogram map. This exercise can be carried out individually or in groups. Maybe the word on the symbol card is enough for those who are beginning to read written texts!
It is amazing to see how children with weak vision at the training school can easily see and recognize small details such as a horse’s hoofs or a pig’s feet without any practice!

**Memory and Lottery Games**

With the help of a computer, you can easily compose your own games. An advantage here is that a card that disappears can easily be replaced.

**Colouring Books**

Symbols that depict objects with definite colours, such as tomato, spruce, squirrel, etc., can be copied to a larger size and put into picture books. Perhaps it is necessary to see a lemon first to know that it is, in fact, yellow.

Of course, it is quite alright to colour a car, a dress, a flower, whichever colour one wishes.
What is the correct colour for these pictures?

tomato
citron

spruce
squirrel

Overlays for Copying
Fish Dam

Fishing is exciting! It is a way to get the students together and get them to concentrate on something. Robust paper clips are fastened to colourful fish made of cardboard. Pictogram symbols are then fastened to the backside of the fish. A magnet fastened to a fishing rod serves as a fishing “hook.” When the students get a bite, they can explain what they have caught in words, sign language or on the communication map.

Secret Letters

Simple commands are written with Pictograms. Each command is put into an envelope and the envelopes are passed out to the students. Each student then has to carry out the command.

There are, of course, a great variety of tasks that can be given, and these can be adapted to the students’ age and level of understanding.
Treasure Hunt

Treasures are hidden in different places in school. Each room should have a door sign. Before this game can be played, the students must understand the position words, in, on, under, etc. They are not obvious and need to be learned! The symbol for search shows someone searching under a table. The instructions will be easier to understand if they are given in this way:
Orienteering

Pippi the doll has hidden herself somewhere in school. She has left a Pictogram message to explain where she is, and we must follow her instructions.

The search for Pippi may start like this:

The next piece of information is on the chair in the nurse’s room.

In this way, the search continues from room to room. Perhaps Pippi will finally be found behind the curtain in the searchers own classroom! This exercise can be adapted to suit adults, for example, by hiding the daily newspaper when students are just about to check the evening’s TV programmes.

Can the Baby Read?

Writing stories about animals with Pictograms can turn out completely wrong. 

The following sentence illustrates this:

The cat was frightened and climbed up the old tree.

It is important that we who can read and write disregard the written word on the symbol. We are dealing with people who read the symbol in the picture and interpret it according to their inner thoughts. For such a person, the above sentence could read: The cat frightened an old man up into a tree.
Pictogram is a way for people to communicate. Verbs, adjectives and adverbs are related to human experiences.

![Pictogram symbols](image)

However, speaking about animals and people and choosing verb symbols by random, without writing down anything with Pictograms is OK in the following language game:

Size 10 x 10 cm Pictogram cards comprising the categories: people, professions and animals are shuffled together. Put the cards in one pile upside down. An activities (verb) category is placed in a separate pile. The student takes one card from the verb category and interprets it, e.g. read. Then he or she takes a card from the other category, e.g. baby. Can a baby read? No! Baby and read are put into the "no" box. The game continues with everyone interpreting the symbols and expressing themselves in words, by sign language or via the communication map.
This game becomes even more exciting if the students are divided into “yes” and “no” teams. Cook - daddy. Can daddy cook? At this point the discussion heats up! Both teams want to win!

Some sentences must never be written down! Everyone knows that dogs eat and sleep, but in a written symbol sequence with Pictogram, this becomes absurd!
What Do You See?

Some symbols are not so obvious. They need to be explained if they are to be understood and remembered. This is the case with symbols for the seasons, for example.

The basic symbol for the seasons is the branch of a tree, and the symbolic meaning for each season is shown by the leaves on each branch. There are no leaves on the symbol for winter, small leaves on the spring symbol, fully developed leaves on the summer symbol and falling leaves on the autumn symbol. These symbols are not easy to understand, but must be explained time and again. One way to do this is by breaking off some winter branches and saving them. Spring leaves (made of light green silken paper) can be fastened to one branch, whilst summer and autumn leaves can be pressed and enclosed in plastic and then fastened to other branches. Skiing, spring flowers, bathing in the summer and mushrooms are typical symbols for different seasons, but they have a lower symbolic value. They guide one's thoughts to the act of skiing, picking flowers, etc. Even mentally retarded children must be given the opportunity of learning to interpret graphical symbols as an alternative to written language. In this way they can develop a tool for their thoughts when it comes to remembering things and planning their lives. Today, we have many positive experiences showing that this is possible for many of them who cannot read.
Combining Pictures and Pictogram Sequences

The course of events from colourful pictures taken from worn-out story books and picture books, photos and digital pictures of activities in schools or day centres can easily be described with Pictograms with the use of the computer program ”Write With Pictures”. The pictures are placed in the classroom and the Pictogram sequences are divided up among the students, who are to find the correct picture for the Pictogram sequence. This exercise gives mentally retarded people who cannot read and write and who have speech impediments the opportunity of re-coding symbols in sequence and putting them into words in their own inner thoughts.

This is a lot of fun with endless variation. Even personnel in Sweden and other countries on training courses have appreciated this as an enjoyable feature of their training … perhaps not as much as the treasure hunt which ends with a reward in the form of some sweets or a small present.
Match the Pictogram sequence with the correct picture!
Here, Johan is reading a Pictogram sequence for Subhas Maharaj during his visit to Fyrklöverskolan in Hedemora.

Linda has read her work instructions, and is now carrying out the job.
Who?

The question symbols are difficult. It is necessary to understand that ? stands for a question. An amazing number of students manage this after a certain amount of practice. Language - the tool of our thoughts is thus developed.

Who/what am I thinking of ... An example of how questions can be formulated and varied.
What do you need?
Draw a line between the thing and the activity.

- resa
- ståda
- cook
- sew
- bake
- kastrull
- sewing needle
- rolling-pin
- dammsugare

Overlays for Copying
What do you need?
Draw a line between the thing and the activity.
Who gets what?
Draw different coloured lines from the person to the object.

king  candle

girl  scissors

Lucia  car

frisör  docka

chaufför  slott

Overlays for Copying
Who gets what?
Draw different coloured lines from the person to the object.

postman

key

grandfather

cow

farmer

snow

caretaker

letter

snowman

glasses

Overlays for Copying
What belongs to?
Draw a line to the correct object.

Overlays for Copying
What belongs to?
Draw a line to the correct object.
Pictogram as an Aid in Reading

Many people who are mentally retarded learn to read simple “cementing-words” as they read. If Pictogram is supplemented with a number of such words, the text becomes linguistically correct. One suggestion is that such highly frequent “cementing-words” can be: are, have, shall, one, want, to, and, now . . .

Reading can then be adapted to the correct age and level of development. “Dad rows and mum is sweet” is hardly of interest after many years of learning.

With new functions in “Write With Pictures”, Pictogram inspires those who are mentally retarded to enjoy some exciting reading.

Lisa is going to buy a new dress for the dance.

Per is going to buy a new shirt and trousers.

It will be fun to go to the party and dance.

Lisa is in love with Per.
We Write With Pictograms

Shopping Lists

It heightens a person's self-esteem when he can read his shopping list himself when he is at the shop. If the signs in shops were written in both words and Pictograms, it would be a great help for those who cannot read, for those who have poor vision and even tourists and immigrants who cannot speak or read the language.

Here is an example of a shopping list:
Letters

It is truly exciting to be able to write a letter oneself using Pictograms, deciding the contents and being able to read it to see if it is correct.

Guests from all over the world come to our school to see how Pictograms are used to teach mentally retarded people. Professor Mei Lin from Taiwan sent a box of sweets from his home country, after which all the students contributed to writing the letter below. Mei Lin rang and said in English that she had understood everything. Communication over the boundaries and language barriers!

We are also clever enough to write letters!

Here is the letter:

Mei Lin!

Hello Taiwan woman

Fun you visit

You kind give sweets to school tanks

Sweets tasa nice nice

You fly to Taiwan good bye

Sisa hug from Fyrklover school
The Weekly Lunch Menu

Perhaps the most read message each week is the school lunch menu! It is important for both children and their families to know what food is going to be served at school. Pictogram contains many food symbols, and most dishes can be written down. The lunch menu is copied so that all can take it home and read it among other important messages on the refrigerator door. If there is no symbol for certain foodstuffs among the Pictograms, just supplement them with pictures from an on-line cookery book with pictures.
We Go to Camp School

Activities at school camp can be planned and written down with Pictograms in the same way as activities at school during the week. Taking part in the planning of what needs to be packed is important. These lists are sent home to the student’s families to be read together with the children. In this way, the family is blessed with a common written language.

Besides these things, more is packed according to the wishes of those who are going to camp school.

Photos and digital pictures of all the adventures at camp school are then put together with Pictograms to tell the story!
Periodicals

“YT-bladet” is a newspaper that is issued once a month in connection with occupational training in Avesta. The students take photos and save pictures on the computer. These pictures are then combined with Pictograms when they write in their LL-newspaper. Here, we see how Maria has chosen to write a report about picking potatoes in Rembo and what they later did with the potatoes.
**Songs**

Many songs are written with the help of Pictograms. The Swedish Institute for Special Needs Education issues such songs. Those who find it difficult to speak, appreciate being able to partake in singing songs that they can read on Pictograms, singing by sign language.

Take, for example, a melody that everyone knows, say "Yellow Submarin," together with simple block words. Everyone can read this song and take part when the whole school sings it together. It is also fun to make signs with this. In this way you can make a Pictogram song - Let’s call it "A Sun and a Boat and a Cabin and a Fish":

```
A ☀ and a 🚢 and a 🏡 and a 🐟 ,

a 🏡 and a 🐟 , a 🏡 and a 🐟 .

A ☀ and a 🚢 and a 🏡 and a 🐟 ,

a 🏡 and a 🐟 , a 🏡 and a 🐟 .
```

etc.
Pictograms for Orientation in Space and Time

Signposting Different Environments

In environments where Pictogram has become a common written language, even those who lack the ability to speak, read and write have the opportunity of finding their way around in time and space. They become less tied to the “here and now”.

Throughout the world today certain Pictograms are being used to signpost public services. It has also been easy to carry out better signposting for mentally retarded people at schools and day centres.

Signs are put up on the doors of all rooms with special functions, such as toilet, office, classroom, doctor, nurse, janitor, supervisor and headmaster. Mentally retarded people recognize these signs irrespective of which school or day centre they happen to be in.

It would be good if Pictograms were used more generally, even outside of schools and day centres. In Umeå, where Pictogram is published and being developed, the local public transport company has been making use of Pictograms for signposting.
In kitchens and rooms where different materials are kept it is easy to find things when the contents of drawers and cupboards are marked with Pictograms. In this way, students at school learn to keep their school work in order. Everything SHALL BE kept in the right place!

It feels safe, being able to find one's way to the nurse's room and knowing what she is going to do.

walk to nurse blood test pee test
Orientation of Time

Pictogram makes it possible for children and adults who cannot read and write to orientate themselves in time. To start with, perhaps just one symbol is shown for the next activity.

Now we are going to eat.

The Annual Wheel

The school day is begun with an orientation of time. The year, the season and the month is marked on the annual wheel.

The page for the month of March shows that the sports holiday is over, school again, cold weather, but the sun promises spring!

The most important events of March have been planned. It’s good to know what is going on and to be prepared. It makes one feel safe and secure!
Monthly Schedule

The day, the month, the year, and perhaps visitors, name-days, weather and birthdays are noted down here.

Students who have reached the higher level at the training school have many years of experience in reading Pictograms. At the school, they have chosen to use the A-4 pages from the desk calendar. These are collected in a binder and the year's activities are written down on the monthly pages, using 10 x 10 cm Pictograms. Between each monthly page, enough room can be left to keep as many photo pages as is needed.

The monthly symbols serve as register pages in the annual calendar. The students are good at communicating by sign language and can easily orientate themselves using the monthly symbols, all of which are associated with the signs of sign language.

As in the case of the colours used for the days of the week, the monthly symbols are a good aid in the orientation of time by their logical association with cultural events and typical weather during that particular month. They are suitable for Sweden, but are typical examples of Pictogram symbols that need to be changed to suit the situation in other countries.

Aiding communication by means of sign language has been accepted at the training school for many years now. It may, however, be appropriate to explain why sign language and Pictograms look the way they do. Not everyone is familiar with this!
Sign Language for the Months

you are freezing
make a snowball
the snow is melting
It’s OK to fool others
things are shooting and growing
decorating a midsummer pole
It’s hot and sweaty
fruit month
the leaves are falling from the trees
rain and nasty weather
the frost has gone down into the earth and it is difficult to dig
a time when many lights are lit
The Swedish Institute for Special Needs Education in Umeå publishes a monthly book that is used at many schools and day centres. Students note down what they have done at school or at the day centre on the left page and what they have done or plan to do during their leisure time on the right page.

This book serves as a contact book between the school/day centre and the student’s home or residence.

It also serves to help the users remember things. What was it we did…?

**Weekly Schedule**

At most training schools the weekly schedule hangs up on the wall.
The colours for each day help the students to get to know the weekly rhythm. They plan the day’s activities and know what is going to happen. Important events that the students look forward to are marked clearly on the weekly schedule. Abstract words like wait (how long?) and then (when?) become clearer and more easy to understand. The students can feel safe and sound and look forward to future events. Any feelings of insecurity that often used to lead to uneasiness, nagging and aggressiveness, are thus reduced.

The class reads the weekly schedule. All activities for Monday are planned in detail.

Important weekly events are noted down. Buns to be baked on Tuesday. A visit to the dentist on Wednesday.

On Tuesday we eat pizza and go to the cinema. On Friday we eat fish and congratulate Kalle who turns eight.
Calendar

Planning times in different ways during the year has shown that students, with the help of Pictogram, have got a better understanding of time in the longer perspective. At Fyrklöverskolan in Hedemora, students at the lower and intermediate levels of the training school use the same calendar as the teachers.

A lot of exciting things happen in December! It is also exciting to turn the pages of the calendar and see how many weeks there are left until one’s own birthday. Maybe there are many months left. Many pages left in the calendar means waiting a long time!
The calendar has two pages for each week with lots of room for many Pictograms. Between the week’s pages there are two empty pages in which digital photos of class activities can be glued. At the end of the year, the students have a complete documentation of school work during the year.

The general planning of activities each month is hung up on the classroom wall.

Desk calendars have been enlarged so that there is room for 25 x 25 cm Pictogram symbols in the spaces for each day. Birthdays, outings and visits are planned and notes about the weather are entered.
The Quarter-Hour Clock

The quarter-hour clock has come to mean a lot for many care-receivers of different ages. Often, when a mentally retarded person gives the correct answer to the question: “What’s the time?” others will say: “He can tell the time.”

In fact, such correct answers do not always mean that the person understands the relationship between what he sees on the clock and the actual time. The person cannot judge the relationship between “quarter to seven” and eight o’clock when a longed for TV programme starts. It has therefore been noted how many mentally retarded persons in their uncertainty stand at bus stops or sit in front of the TV and wait, in order to be sure that they do not miss the bus or the programme.

The quarter-hour clock shows how much time is left until the next activity by dots - each one representing a quarter of an hour. When all eight dots are black, there are at least two hours left before the activity in question. When all the dots are white, time is up! There is a signal and all the dots start blinking.

In the example below, there are five dots left until eight o’clock. The time is actually quarter to seven. The mentally retarded person interprets the five black dots as giving him enough time to make some coffee or go to the kiosk before the programme starts.

The concept keyboard has 128 squares that can be programmed. The different squares are programmed with the signs that are sent to the computer when you press them.

The time is set by pushing out the hour and minute hands on the black clock-face at the back. This is then pushed into place on the white plastic frame, which is then fixed onto the quarter-hour clock which reads the time automatically. Pictograms are often used to inform about the activity in question. The correct day is marked by colouring the frame of the symbol. In this case a brown frame for Thursday.
Computer Technology Makes
Pictogram Accessible

Pictogram has become an alternative written language for those who cannot read or write. During the 1980’s most schools and day centres did not have computers. At that time, only printed material published by RPH-sär in Umeå was available. Material that is easily printed today using computers was then cut, glued and copied by hand. In order to be able to write using a conventional computer keyboard, it is necessary to be able to read and write. It was therefore impossible at first for Pictogram users to write themselves and use Pictogram. They had to rely on help from personnel or relatives. Today, they can manage many writing jobs themselves and play with the symbols thanks to a concept keyboard called Flexiboard. Flexiboard serves as a keyboard, but can be programmed so that you can press the concept keyboard to produce numbers, letters, pictures, symbols, block words or phrases, depending on which program is used and what you want to show on the monitor.

Flexiboard has been around since 1996. In this section we show some examples of how the concept keyboard works with different writing programs and game programs that are connected to Pictogram. With the 1,000 symbols as a base, overlays of Pictogram symbols that are placed on top of the concept keyboard can be programmed for different themes. These overlays of Pictogram symbols are saved and stored in different sets. There is enough room for 100 overlays in every set. Each student or user can have his own set for personal needs. When the overlays have been saved and stored, they can be printed. The overlays are given a code that the concept keyboard can read. In the following example we see the “Fyrklöverskolan” set - a general set that all the students at the training school enjoy using.

In the word processing program "Write With Pictures"or "Flexiword", the students can write about what happens during the winter months, about the fun they have at Christmas, Lucia, etc. Erasing mistakes and printing stories is easy, as these commands are programmed into the overlays of Pictogram symbols.
<table>
<thead>
<tr>
<th>winter</th>
<th>December</th>
<th>January</th>
<th>February</th>
</tr>
</thead>
<tbody>
<tr>
<td>winter illustration</td>
<td>December illustration</td>
<td>January illustration</td>
<td>February illustration</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>cold</th>
<th>Christmas</th>
<th>Lucia</th>
<th>bridesmaid</th>
</tr>
</thead>
<tbody>
<tr>
<td>cold illustration</td>
<td>Christmas illustration</td>
<td>Lucia illustration</td>
<td>bridesmaid illustration</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Father Christmas</th>
<th>Christmas crib</th>
<th>fun</th>
<th>present</th>
</tr>
</thead>
<tbody>
<tr>
<td>Father Christmas illustration</td>
<td>Christmas crib illustration</td>
<td>fun illustration</td>
<td>present illustration</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>visitor</th>
<th>travel</th>
<th>woman</th>
<th>man</th>
<th>play</th>
<th>read</th>
<th>rest</th>
<th>TV</th>
</tr>
</thead>
<tbody>
<tr>
<td>visitor illustration</td>
<td>travel illustration</td>
<td>woman illustration</td>
<td>man illustration</td>
<td>play illustration</td>
<td>read illustration</td>
<td>rest illustration</td>
<td>TV illustration</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>you</th>
<th>teacher</th>
<th>girl</th>
<th>boy</th>
<th>sister</th>
<th>brother</th>
<th>grandmother</th>
<th>grandfather</th>
</tr>
</thead>
<tbody>
<tr>
<td>you illustration</td>
<td>teacher illustration</td>
<td>girl illustration</td>
<td>boy illustration</td>
<td>sister illustration</td>
<td>brother illustration</td>
<td>grandmother illustration</td>
<td>grandfather illustration</td>
</tr>
</tbody>
</table>
Language, Speech and Reading Exercises in Pictogram

Pictures can be interpreted in many ways. Pictograms are most often used according to their basic meaning and are therefore suitable for language, speech and reading exercises. You do not have to guess.

“Write With Pictures” now has some new functions and will in this way make Pictogram more “linguistic”. A precondition for this is that users are given many opportunities of thinking in a linguistic way!

The reason why Pictogram has been viewed as difficult is that efforts have been made to find symbols for events that are important to communicate, even when these are difficult to describe in pictures. One example of this is the symbol for wait. How can a picture symbolise waiting? Many good suggestions, such as “wait in line”, “wait for the green man”, etc., have resulted in giving up. None of them fitted waiting for the break or for spring. Using an hour glass as a general symbol for waiting was seen to be too difficult.

Students at the training school looked quite puzzled, too, when they were confronted with this symbol. The question: What must you do when you see this on your computer screen? was all that was needed to get the correct answer, verbally or by sign language.

The symbol for I, together with a noun, functions just as well for “mine” and many other linguistic finesses will prove to be possible if the users are given the opportunity of thinking in a linguistic way in different exercises. The “not” function and the possibility of writing simple block words makes the glossary of symbols and the language richer.

My mummy has no car

“My mummy has no car” is something that people who can hear and speak often hear their deaf teachers say when they are teaching them sign language. When it comes to Pictogram, thinking is governed by the symbolic meaning of the picture. We who can read are misled to read the word on the symbol card and thereby lose the symbolic meaning of the picture.

Speech Training Supported by Pictogram

Teachers and students can find Pictogram and its computer program useful in connection with speech training. Exercises for different difficulties in pronouncing words can be varied and made to be fun. All the programs we have accounted
for here are useful in this regard. Special overlays of Pictogram symbols for the concept keyboard with speech or speech synthesis are useful for speech training, and help students to listen, imitate and write down their speech homework themselves.

An example of such overlays of Pictogram symbols is sheet 42 (L-connections), taken from the "Fyrklöverskolan" set. Here you can play and practice, and the student can write down his speech homework himself in "Write With Pictures".

Rhyming practice is important for all pre-school children. With Pictograms they can practice listening themselves to find the right word that rhymes. Pictogram symbol sheet 31 - "Words that Rhyme 2" - is an example of how the great supply of pictures makes choosing easier. Together with the student, the teacher can "read" the rhyming word that the student has suggested and written in the "Write With Pictures" program.
Communication Boards with Pictograms

“Speech” communication maps that have been programmed to say words or phrases make it easy for users to partake in discussions and to express their own wishes aloud in their class or working group. All you need is a computer and a concept keyboard! Picture Base Pictogram contains sound files that speak the fixed meaning of the symbols with a woman’s voice.

If your computer is equipped with speech synthesis, it is possible to program the Pictogram symbol sheet so that complete phrases or your own choice of words is read. This is done in the command to Flexiboard and in the word processing program “FlexiWord”. In the example “Speech communication map - I want to”, the student can express his/her wishes him/herself without being referred to a yes or no answer. In order to say “I want to speak to Kalle”, the student would press on the squares “I want to” and the photograph of Kalle. The student can also say “I don’t want to . . .” and emphasize the not, if Kalle is nagging him, by pressing “lay off!” Those who cannot speak are often exposed to the risk of being pressured by those around them, which leads to their giving up!

The areas you press on the overlays of Pictogram symbols can vary from one area covering the whole keyboard to each square being given its own meaning. It is the user’s needs and capacity when it comes to maturity and motor skills that is decisive.

The possibilities are many. Each user who has his own computer and concept keyboard should have his own set of Pictogram symbol overlays, so that he can quickly change from one communication map to another.
The Use of Synonyms and Connections in Pictogram

Just as in the case of visual sign language, logical connections with Pictogram can give new conceptions. In the word processing program “Write With Pictures” it is possible to put symbols together and write down a suitable word on the card.

The symbol for group is generally used for a group of people and can stand for assembly, everyone, the class, the team, etc.

By simple, logical connections, the symbolic meaning becomes clearer, as in the following cases:

- school + group
- sing + group
- ice-hockey + group

In the same way, combinations with the day symbol can express special days, such as:

- candle + day
- name + day
- like + day

In contrast to detailed pictures, Pictogram symbols are generalised to a great extent. For example, the symbol for man does not have any governing details with regards to appearance or clothing. It symbolises all men.

Verb symbols for activities such as eat, walk, sleep, etc., apply to all people regardless of their age or gender. Many symbols can also synonymously stand for different phenomenons.

- comb
- comb
- I
- me
- you
- you
When practicing language and reading, sentences become correct by adding the “cementing words” *shall* and *now*.

![ shall ](image)  ![ now ](image)

I shall comb you now.

The symbols for *January* and *July* can also stand for *freezing* and *sweating* in the sentences “I am freezing” and “I am sweating”.

![ January ](image)  ![ July ](image)

I am freezing  I am sweating

*Talk, say* and *speak* are symbolised by one and the same Pictogram.

![ speak ](image)

Synonymous concepts such as *workplace* and *office* only need one symbol.

![ office ](image)

The sign language glossary often refers to such synonymous signs.

As in the case of sign language, Pictograms are visual. There are many similarities between these visual languages. The Pictogram symbol for *like* can even stand for *wish* and *want*.

![ like ](image)  ![ like ](image)  ![ like ](image)  ![ birthday_present ](image)  ![ CD ](image)

The corresponding signs in sign language are carried out with simple hand movements against the chest.
Final Comments

Pictogram is continually being developed in accordance with the wishes of users. There are now over 1,000 symbols and they are being updated all the time. Marking public premises in the community makes it easier for people with different functional impediments to find their way around. New teaching aids for basic speech training and reading are being developed in pre-schools and schools for mentally retarded people.

This technique offers new opportunities to people with speech and language difficulties when it comes to communicating with others. Pictograms are perfect for fax and e-mail messages and maybe we will soon be able to send Pictogram messages via our mobile telephones.

Many new ideas are being hatched all the time, but they must wait until the new methodics book is issued. And so we conclude this brochure which replaces earlier versions. However, the door is open for future ideas.

Perhaps you have your own wishes and ideas! If so, you are welcome to share them with us!
References

Pictogram Material:
Pictogram card box 1-4
Pictogram (overlays for copying)

Bragée Mette (1996) - Fruit
Bragée Mette - Vegetables, Root Vegetables and Potatoes
Bragée Mette - Events Book 1
Bragée Mette - Events Book 2
Johansson Anita (1992) - Alfons och Milla Pictoversion
Johansson Anita (1992) - Titta Madicken, det snöar Pictoversion
Falck Kerstin (1989) - Pictogram Cross-Word
Falck Kerstin (1989) - Pictogram Song Book
Falck Kerstin (1990) - Pictogram Game 1
Falck Kerstin (1990) - Pictogram Game 2
Lidén Manne (1999) - Graphic Design of Pictogram
Svensson Anna (1991) - Monthly Book for Day Centres
Svensson Anna (1991) - Monthly Book for Schools
Burstedt-Wallin, Sandvik (1999) - Twelve Month Work Book

Video:
Falck Kerstin (1993) - Pictogram: Total Communication

Computer Programs:
Write With Pictures, The Swedish Institute for Special Needs Education
Flexiprogram, Handitek, Brändavägen, 795 32 Rättvik. Tel: 0248-79 89 80
Flexiboard, Gewa, Box 92, 191 22 Sollentuna. Tel: 08-594 694 00
Quarter-Hour Clock, Gewa, Box 92, 191 22 Sollentuna. Tel: 08-594 694 00

ICA-bilder:
Trollreda, Box 146, 461 23 Trollhättan