PrECIVIM

Promoting Effective Communication for Individuals with a Vision Impairment and Multiple Disabilities

IO5: Best Practices Guide

PrECIVIM
Promoting Effective Communication for Individuals with a Vision Impairment and Multiple Disabilities

UNIVERSITY OF THESSALY

IKY

Erasmus+

Best Practices Guide

Intellectual Output 5 (IO5)

PrECIVIM
Promoting Effective Communication for Individuals with a Vision Impairment and Multiple Disabilities

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Erasmus+

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EXECUTIVE SUMMARY

The Best Practices Intellectual output is considered as one of the most significant outputs amongst all deliverables of the project. This is not to undervalue the workload or the collaborative scheme of the other outputs. It is because a Best Practices Output encompasses a condensed knowledge and experience of all members of a consortium and highlights all effective clinical and management strategies that are used at national and regional level.

The following Intellectual Output (IO5) focuses on screening inventories of the communicative profile of MDVI students, through techniques, materials, and strategies. It consists of two main sections; the first one deals with the methodology adopted in this deliverable to obtain relevant data (Section A) and the second one presents and describes the main characteristics of exemplary practices (Section B).

The present intellectual output aims to describe some examples of good practice of the implementation phase of the PrECIVIM project that organizations, schools or centers deliver to children with multiple disabilities and vision impairment regarding the development of effective communication skills. These interventions were a part of the PrECIVIM project and aimed at effective communication regarding children with MDVI, enhancing their acceptance and promoting their inclusion from a broader social context.

1. SECTION A

1.1 Core elements of the PrECIVIM project and participants

The present Intellectual Output (IO5: Guide of Best Practices) constitutes one of the deliverables of the Erasmus + European Project entitled “PrECIVIM: **Pr**omoting **E**ffective **C**ommunication for **I**ndividuals with a **V**ision **I**mpairment and **M**ultiple Disabilities” (code number: 2017-1-EL01-KA201-036289). The coordinating organization of the project is the University of Thessaly (Greece) and the leading organizations for the design and development of Intellectual Output 5 (IO5) are Amimoni and University of Thessaly.

In essence, IO5 refers to a Guide of Best Practices for the development of the communication skills of children who have **V**ision **I**mpairment and **M**ultiple Disabilities (MDVI). The present intellectual output includes: a. examples of good practice pertinent to screening inventories of the communicative profile of students with MDVI, and b. the main conclusions of the analysis of the data which have been collected through the implementation phase of the project.

The core elements of IO5 are two: a. the first one refers to the methodology adopted, namely the action research method, and b. the second one is pertinent to the implementation of the project and the collection of the best practices designed and developed by professionals. The input of this phase was feasible through reflective logs which were a collaborative outcome from all partners of the PrECIVIM project.

The participating organizations of Intellectual Output O5 (including the Project coordinator organization) are the following:

1. University of Thessaly (Greece-Coordinator)
2. Babes-Bolyai University (Romania)
3. University of Roehampton (UR) (UK)
4. Whitefield Academy Trust (UK)
5. "Amimoni" Panhellenic Association of Parents and Friends of the Visually Impaired People with Additional Special Needs, (Greece)
6. Special High School for the Visually Impaired Cluj-Napoca (Romania)
7. Special Primary School for Deafblind Students (Greece)
8. St Barnabas School for the Blind (Cyprus)

In addition, the schools and organizations that contributed to the development of IO5 are:

1. Whitefield Academy Trust (UK)
2. “IRIS” Day Center, "Amimoni" Panhellenic Association of Parents and Friends of the Visually Impaired People with Additional Special Needs, (Greece)
3. Special High School for the Visually Impaired Cluj-Napoca (Romania)
4. Special Primary School for Deafblind Students (Athens-Greece)
5. Special Nursery school for blind students in Greece
6. The Center for Education and Rehabilitation for the Blind (CERB)
7. St Barnabas School for the Blind (Cyprus)
8. Special School “Evaggelismos” (Cyprus)
9. Special School “Agios Spyridonas” (Cyprus)
10. Special School for the Blind (Athens- Greece)
11. Special school for vocational education for students with vision impairments and multiple disabilities (Athens-Greece)

1.2 Methodological considerations

The methodological framework of IO5 was the action research scheme. Relevant data were obtained during the implementation phase of the PrECIVIM project and in turn, were elaborated by Amimoni and the University of Thessaly. The collaborative action research team comprised members who were involved in schools and institutions and the implementation phase took place after the training. All professionals who were involved in the project filled in reflective logs jotting down their experiences and challenges while applying screening inventories of the communicative profile of students with MDVI (in total, nine different educational settings in four countries).

The implementation phase was very active and innovative because it brought new elements and perspectives regarding levels of communication in the population of students in MDVI in conjunction with collaboration between universities and schools or/and associations.

The following sections include a brief description of the design of the applied action research and the tools used to obtain relevant data.

1.3 The design of action research

Action research is a methodology which fulfills two important conditions; one is that it seeks the improvement of teachers' practice in order to enhance their students' understanding, using any appropriate tool and the other is that it seeks an understanding of the educational setting and context in general (Feldman & Minstrell, 2000; Kemmis & McTaggart 1988). All these procedures contribute to the formation of a dynamic process by which the diversity of the students is acknowledged, respected and served in the most effective way (Argyropoulos & Nikolaraizi, 2009).

Kemmis and McTaggart (1988), argue that there is a group of four fundamental aspects of action research.

There is a dynamic complementarity, which links these four aspects into a cycle, and ultimately into a spiral of such cycles. To do action research a group and its members undertake

- To develop a plan of critically informed action to improve what has already happened,

- To act to implement the plan,
- To observe the effects of the critically informed action in the context in which it occurs, and
- To reflect on these effects as a basis of further planning, subsequent critically informed action, and so on, through a succession of cycles (p10).

These cycles of development, described by Kemmis and McTaggart, have taken place in the present project and have constituted the backbone of the implementation (i. e. interventions based on the PrECIVIM training material, IO3). Figure 1 represents a “snapshot” of the core elements of an action research cycle. The characteristics of the cycles are described below and illustrate the process which was adopted showing the evolution of the process in this particular project. The quarters of the circle are not independent areas; they are mutually dependent and they overlap. For instance, observation is a procedure that takes place during the whole cycle. Notwithstanding, there is a “starting point” which is the top right quadrant of the plan, and the very general flow of the process follows a clockwise direction. It should be mentioned that this plan did not constrain the research in advance. On the contrary, the data-led the process and the products determined the flow of the research.

Action research is an inquiry conducted by teachers regarding their own teaching in their own classrooms and reflection is the stage which provides many insights for reconceptualization, planning, monitoring, and keeping track of how well things are going.

1st Action Research Cycle (taking notes)

Plan

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…….

Act

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…….

Observe

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……
……
……

Reflect

……
……
……

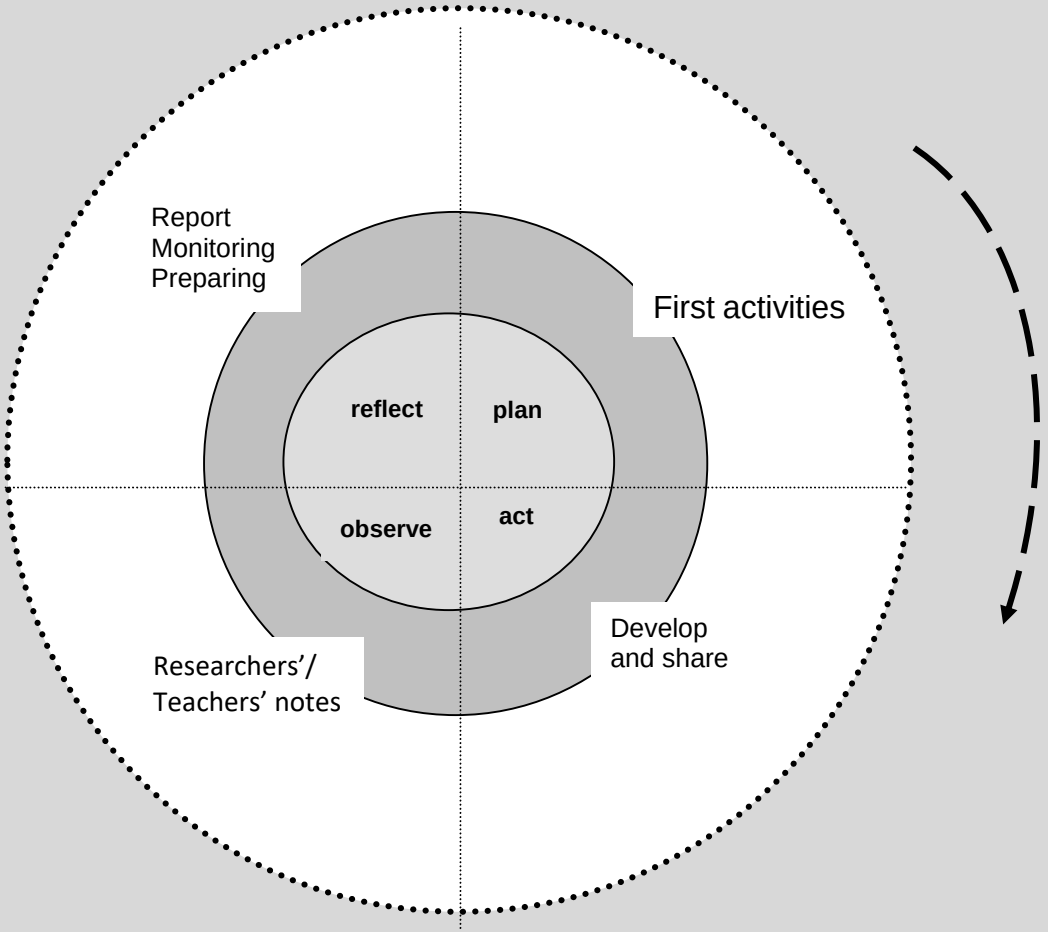


Figure 1. The Action Research Cycle

1.4 Reflective logs

The reflective logs consisted of the following steps: a. information regarding the student's profile, b. input regarding professionals' plan of their intervention, c. actions that were conducted during the intervention, d. professionals' observations during the intervention (i. e. student's reactions, responses, etc.), and e. professionals' reflection on the results of the implementation.

1.4.1 Students' profile

It is evidence-based that the development of communication skills in children with multiple disabilities and vision impairment (MDVI) may differ significantly compared with the corresponding ones in children with typical development (Chen, 1999). One principal difference between the above populations is the fact that children with MDVI cannot obtain enough information from their environment (McInnes & Treffry, 1982). Thus, it is extremely important to trace and highlight notable students' strengths, weaknesses in order to reach a suitable and effective intervention program. This is why the first part of the reflective log is dedicated to students' profiles.

1.4.2 First things first: the planning phase

Before teachers and professionals implement proper interventions regarding the development of communication skills and improve communicative behaviors, it is necessary to evaluate the preverbal communication with the appropriate assessment methods (Westling & Fox 2004). The assessment of children with MDVI communication skills is quite challenging regarding the combination of disabilities (Bruce, Godbold, & Naponelli-Gold, 2004). There is a variety of assessment tools for assessment of communication, ranging from formal methods such as standardized and non-standardized tests and scales to informal ones (Warner & Wolf Nelson, 2004). For this, the "plan" section in the reflective log precedes the intervention phase in order to improve professionals' preparation in terms of management and effective observation.

1.4.3 The critical stage of observation

The next section of the reflective log deals with observation. Observation is considered to be one of the “favorite” strategies of collecting data because it bears authenticity and validity. A professional, by a thorough observation, will be able to describe, encode, quantify, and analyze the behavior which is intended to be evaluated. For this reason, the section which deals with observation in the reflective log provided a number of techniques and options, such as diaries, field notes, checklists, video recordings, audio recordings, discussions with the working team, assessment activities, children’s products, and so on (Eames, 1990; McNiff, 1994; McNiff, Lomax, & Whitehead, 1996).

1.4.4 The last but not least element of reflection

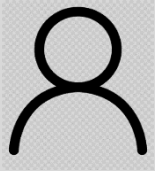
The last section in the reflective log puts great emphasis on reflection. Through this procedure the professionals had the opportunity to reflect on their own data, and grasp a deeper insight into their students’ understanding, improving educational practices and structure of their intervention programs (Feldman & Minstrell, 2000). In addition, professionals could elaborate and “interpret” their interaction with the student, becoming more aware and more sensitive regarding communication levels and alternative ways of enhancing interaction and communication.

2. SECTION B: Case Studies

Section B is an aggregated presentation of different case studies based on the action research method. Most of the cases are presented through single action research cycles (please note that all referred names are pseudonyms). During the implementation phase - in most cases - there were follow-up stages (i. e. second and third action research cycles), but it was decided by the writing team that it would be more beneficial for professionals and practitioners to present as many as possible single action research cycles presenting different interventions and approaches. Nevertheless, there are two cases (that of Kate and Matthew) with a consecutive row of two cycles, describing the characteristics of action research coupled with elements of formative evaluation.

All the below were based on professionals' reflective logs and are presented in two ways: a. through notes which are organized into the four basic phases of action research (i. e. plan, action, observe, and reflection), and b. through a scheme that was based on Figure 1.

2.1 Alkmini



Alkmini has low vision, developmental cognitive delays and autistic spectrum disorder. She communicates using limited oral speech, coupled with many personalized gestures, as body movements and face gesture. Alkmini usually uses one or two words to express likes/dislikes or to communicate her needs. She is willing to socialize and give feedback using yes and no, through gesture or using expressive language not necessarily related with the context of communication. Direct objects, concrete symbols and pictures are frequently valuable tools in her verbal communication.

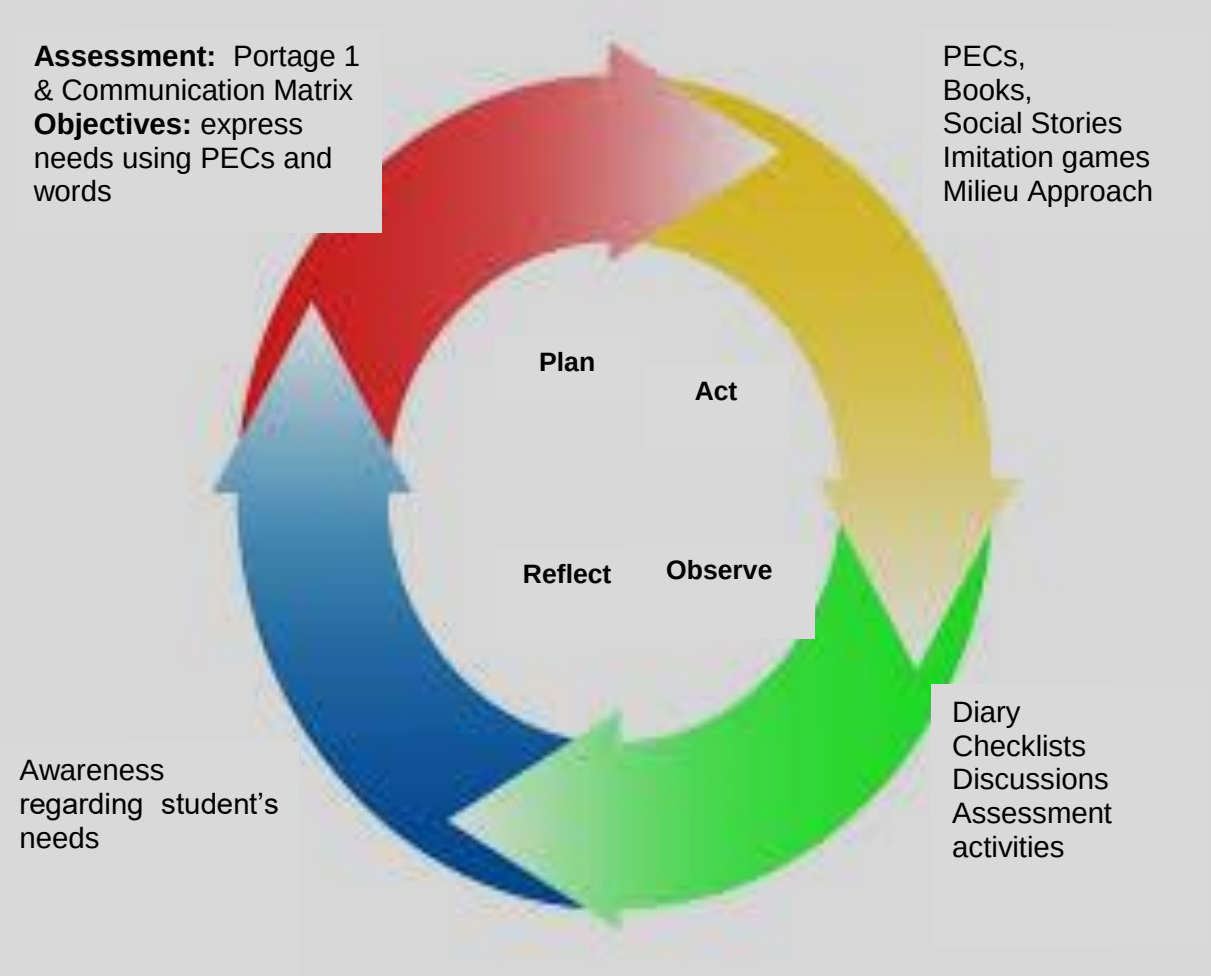
Plan: ***Assessment:*** Portage-1 and Communication Matrix

Objectives: We will try to use tactile/ visual adapted PECs and verbalize action (for example, an image with her face or her name to refer to the meaning "I" or image commands such as "in", "out", "pick up", "leave" and other actions or objects such as "song", "bird" to express her needs and desires).

Action: ***Methods/ Activities/materials:*** PECs, books, objects, hand on activities, social stories, Milieu Approach, routines based on imitations, games and actions.

Observation: we observed Alkmini's behaviors and kept notes through diary, checklists, discussions with the working team, assessment activities, and products.

Reflection: At the beginning of the intervention, Alkmini was a little bit anxious. Later on she became very enthusiastic and joined the activities during intervention. We presented and explained the objectives of the intervention and our intentions through this intervention to Alkmini's parents. We also collected useful information regarding Alkmini's preferences and interests and let the parents know about all this recorded observation. We now feel we have a better understanding of Alkmini's educational needs.



2.2 Ella

Ella is a 5-year-old girl with cerebral palsy and CVI. For communication purposes she relies on symbolic communication. She responds to her name and to acoustic stimuli by turning her head towards the source of the stimulus. She recognizes familiar people by their voices but she also uses her vision. Ella laughs when she enjoys an activity but refuses to cooperate when she doesn't like something. She sometimes responds positively or negatively by using words such as "na" for "yes" and "ada" for "no".

Plan: ***Assessment:*** Functional communication assessment.

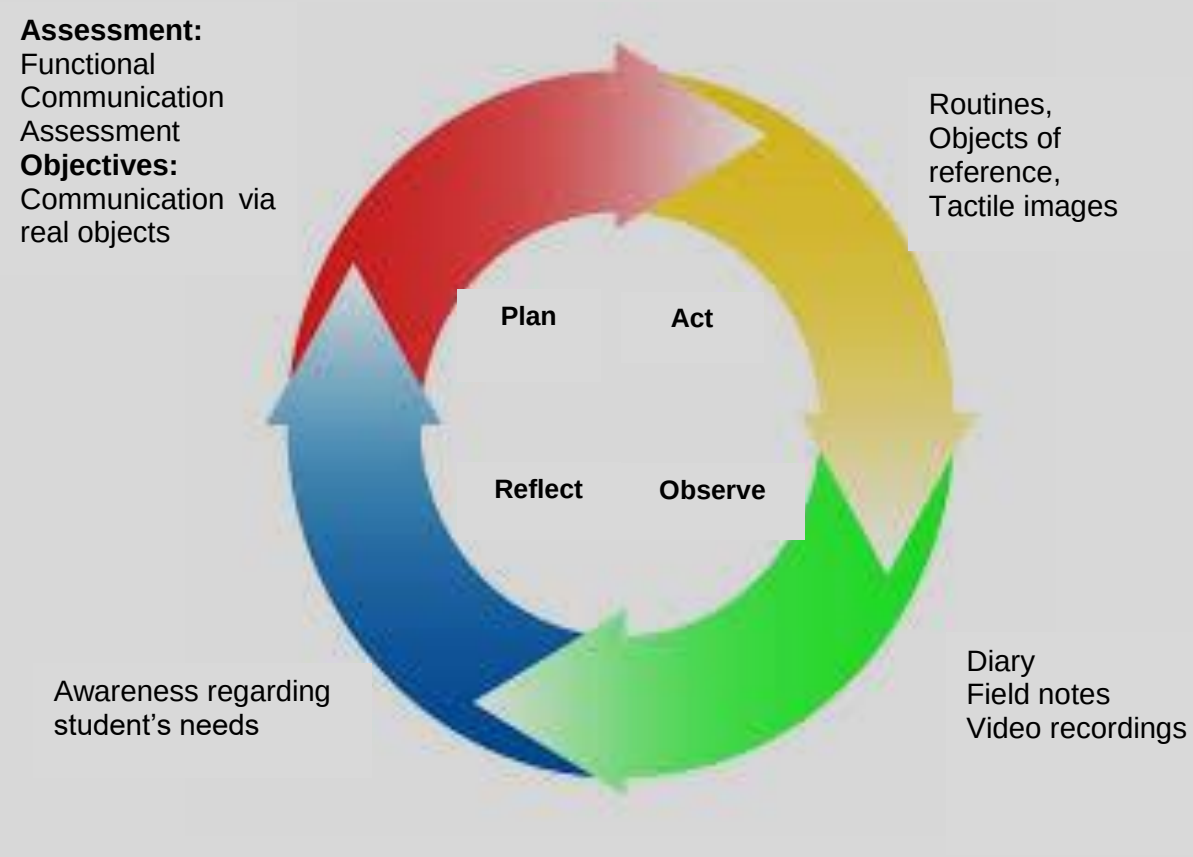
Objectives: we will present two-dimensional objects to her to identify and recognize. In turn we will ask her to figure out the category each one belongs to, so that eventually she will be able to communicate via photos of the actual objects.

Action: ***Methods/ Activities/materials:*** routine intervention based strategies, object identification, objects of reference, photographs of the actual objects (2D representations), educational environment promoting communication, communication diary.

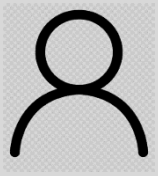
The activity was designed in order to promote choice (i. e. correspondence between cards and real objects). Each time two cards of the real objects were presented to Ella, who had to choose one or the other, which then meant that we would play with the toy depicted on the card.

Observation: Diary, Field notes, video recordings.

Reflection: The activity was successful and needs to be continued. At first, Ella had difficulty to understand the activity and her choice was random. Through repetition and step activities (one item presented at a time) she started to comprehend what was expected. She then started to be more decisive in identifying photos. We also started to collect more information regarding her comprehension, likes and dislikes in order to extend the number of items. Then, we decided to include a new series of new items in a communication system and introduce them to her.



2.3 Luca



Luca lacks neuromuscular coordination, has no speech and tries to interact through physical contact. Although he does not use verbal language to express his needs, he is a communicative person and tries to express his needs or desires using nonverbal cues, such as gestures and vocalizations. He learns through tactual cues or through pictograms in order to convey a message in an emotionally/evocative way. He doesn't face any sort of difficulties regarding transitions between classes and he feels comfortable within the school environment while interacting with professionals. Finally, Luca responds and really enjoys audio material.

Plan: ***Assessment:*** Observation, parts of the Oregon project, INSITE Developmental checklist and Tactile symbols directory to standard tactile symbol list.

Objectives: The main short – term objective for Luca is to explore various textures by touch, 3 to 4 times for 3 weeks during school activities. Moreover, the long term objective is to enable him to recognize and to respond to various tactile stimuli. It is expected that during all these activities Luca needs to be assisted because of his touch defensiveness.

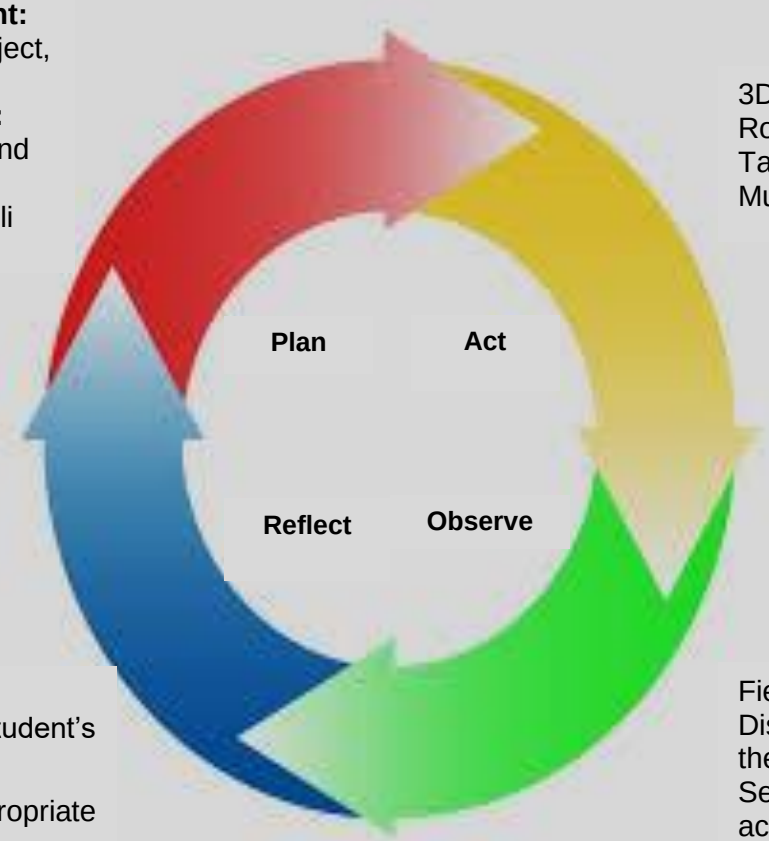
Action: ***Methods/ Activities/materials:*** routine intervention based strategies, object/ material identification, objects of reference, educational environment promoting communication, communication diary. The material was enriched with songs and haptic stimuli that we knew in advance he likes very much.

Observation: Discussion with the team, field notes, self-assessment activities, children's products.

Reflection: At first Luca reacted intensively because of his tactile defensiveness. The progressive interaction with these materials and the inclusion of the student's favorite toys to the activity along with constant guidance and praise were very helpful. For example, the most intensive reaction of the student was the sand-related activity. For this reason, we gradually introduced various materials aiming to help him touch sand in the long run e.g. initially legumes, then rice and, then sand. Thereafter, Luca was praised with a favorite toy or activity. As mentioned, Luca is rather communicative and seems to be

enjoying the interaction with the teacher. He showed what pleased him either with gestures or vocalizations. We collected useful information for each level of the intervention and the ability to design appropriate educational interventions.

Assessment:
Oregon Project, & INSITE
Objectives:
recognize and respond to tactile stimuli



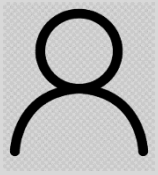
3D Objects, Routines
Tactile stimulation
Music

Awareness regarding student's needs

Design appropriate interventions

Field notes
Discussions with the team
Self-assessment activities
Children's products

2.4 Maria



Maria is 12 years old. She can talk but mostly about the things she wants. Most of the time she refers to clothing, going to shows and, eating cakes. Maria has some verbal/ speech stereotypes. She cannot pronounce the sound "r". Sometimes, when she wants to make a request, she can't breathe properly, because she is in such a hurry to ask for something.

Plan: ***Assessment:*** Portage Scale.

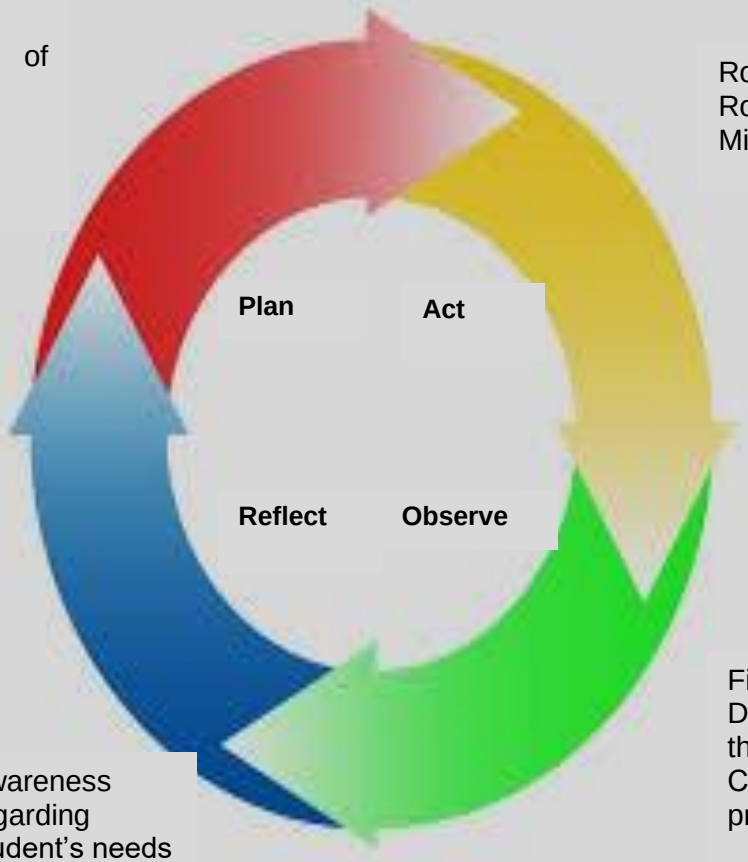
Objectives: to start talking in a clear and discrete manner and to be able to focus on other subjects as well.

Action: ***Methods/ Activities/materials:*** Communication routines, action – based routines, role play, provision of adequate response time, behavior modeling, following the child's initiative, tracking not guiding, using stimuli as reinforcements (Fruit, clothes, activities including eating/ dressing/ going to the market).

Observation: Field notes, discussions with the working team, children's products.

Reflection: Maria's most common reaction was to avoid the task in question. For this reason, it sometimes felt like "talking to a wall...". However, there were times that Maria seemed to practice or adopt some responses we had modeled during the intervention in the previous weeks. This data will be used to help us re-plan and set more specific objectives for Maria. Through the implementation of a variety of methods and strategies in the context of the present program, we revised the ways in which we approach our students. In addition, we revised and got a better grasp of strategies that are useful in educational interventions with other students.

Assessment:
Portage Scale
Objectives:
effective use of verbal communication

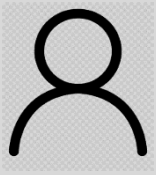


Role play,
Routines,
Millieu Approach

Field notes
Discussions with the team
Children's products

Awareness regarding student's needs

2.5 Ashley



Ashley is 8 years old , with severe mental disabilities, cerebral palsy, low vision, autistic spectrum disorder and, epilepsy. In terms of communication, Ashley is at the stage of non-conventional pre symbolic communication. She vocalizes and produces some syllables in a stereotypical manner like "ma-ma-ma". In cases of tension or self-regulation, Ashley may scream or resort to self-traumatic behaviors.

Plan: ***Assessment:*** Internal structured functional assessment questionnaire (non-standardized).

Objectives: short term objective: to provide chances for positive emotional engagement and tolerate an interaction of several minutes, to create an individualized communication pattern so that she can have a person of reference; long term objective: to reduce self-traumatic behavior.

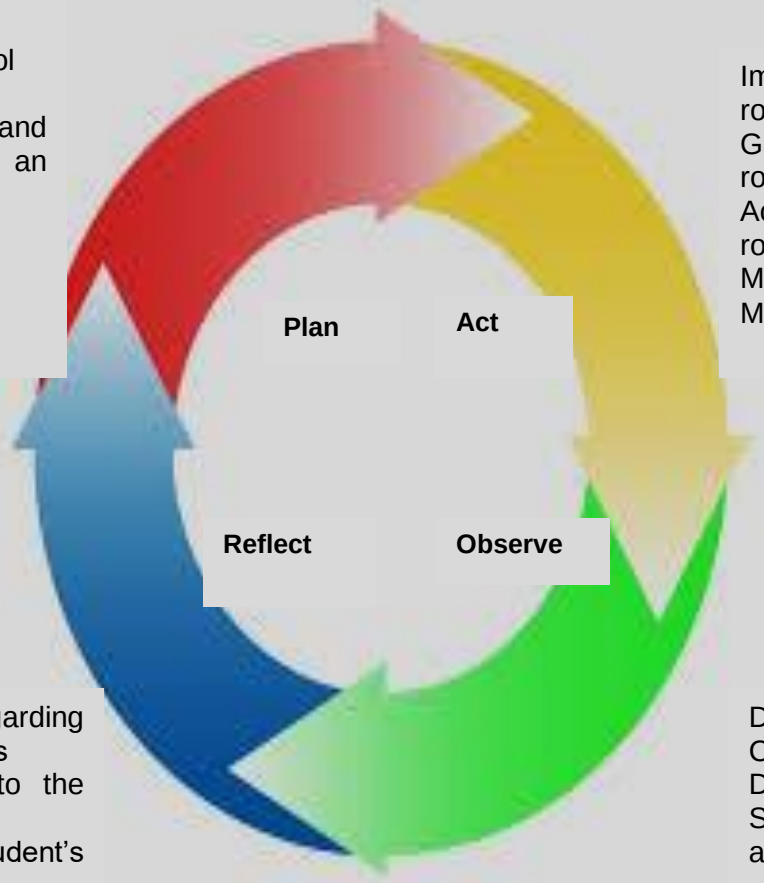
Action: ***Methods/ Activities/materials:*** Imitation based routines, game based routines, action based routines. To be more specific: specified moment of beginning and ending of the activity, time-out, turn-taking, focused attention, shared experience.

The activity included modified Makaton signs and body signs to specify starting (for example, 3 claps and start counting 1,2,3, “off we go”). During all activities favorite songs and music instruments were used.

Observation: Diary, Discussions with the working team, Meeting notes with the working team, Self-assessment activities.

Reflection: Ashley responded positively most of the time. She enjoyed listening to the songs and the body cognition game but she has not yet shown signs of active involvement. Ashley started to recognize the activity’s routine, the space and the environment where it took place as well as the starting point of the session. Moreover, it was noted that when Ashley had a stroll before the session she was calmer and more organized so this will be included in the next interaction. Another modification to the intervention in the long run will be that we will provide more opportunities for her to promote alternative choices e.g. a music instrument, a toy, etc).

Assessment: functional assessment tool
Objectives: engagement and tolerate an interaction

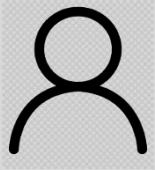


Imitation based routines,
Game based routines,
Action based routines
Makaton
Milieu Approach

Awareness regarding student's needs
Modifications to the intervention regarding student's needs

Diary
Checklists
Discussions
Self-assessment acivites.

2.6 Juliet



Juliet communicates using limited oral speech, combined with many personalized gestures such as body movements, facial expressions, etc. Juliet usually uses one or two words for preferred needs, objects or expressing likes/dislikes, do or don'ts in her communication. She is willing to socialize and provide positive or negative feedback through gestures or by using expressive language such as "yes" or "no" but not necessarily in relation to the context of the interaction/ communication. Most of the times, the direct objects, concrete symbols and pictures are valuable tools in her verbal communication. Juliet has low vision, cognitive delay and, autistic spectrum disorder. She finds it difficult to articulate

most sounds. She may miss many of them or replace them by others. Because of this, she lacks clarity in speech which makes it difficult for others to understand her. Regarding listening and following instructions, Juliet is able to follow a book line on a page if assisted by the teacher with simple questions, (e.g. what do you see? /hear? /what do they eat? /drink?); the answer is usually provided by Juliet in one word or gesture.

Plan: ***Assessment:*** Direct Observation, Portage -1 (language development- adapted), Communication Matrix

Objectives: short term objective: to use tactile/visual adapted PECs, (2 set/cards), and verbalize action e.g. (‘student’s name/) me/I- out/or pick/; pick-stick/or leaf’ for expressing her needs, wishes., or ‘bird-sing/); long term objective: to use a structured sentence to express her needs, wants, and emotions.

Action: ***Methods/ Activities/ materials:*** AAC, PECs**,** books, objects. More specifically, activities were based on: a. onomatopoeia (i. e. creating a word that phonetically imitates the sound that it describes), b. sounds, c. tactile exploring. Also, activities were designed to develop hearing discrimination sounds. PECs were used such as: a timetable routine for the weather/places and, outdoor activities. Visually adapted social stories were also used to reduce any type of anxiety before going outdoors in the park to explore the environment. For example, books such as “In the park” which include tactile and visual pictures. Moreover, other supplementary material was used to improve participation in class environment, such as tactile and symbolic visual resources, different types of assistive technology, software

programs for communication and pronunciation for children, musical devices with echo, audio, tactile stimulation and, social story books, hand puppets and objects related to the stories.

Observation: Diary, Checklists, Discussions with the working team, Assessment activities, children's products.

Reflection: we felt that the amount of information recorded, was valuable in order for us to plan the following steps. Setting the objectives with the parents, and being able to design the activities with them, convinced us to carry on.

Observing Juliet's reactions and reflecting on our notes, enabled us to be more aware regarding aware: a. Juliet's specific and unique needs, b. difficulties and, c. opportunities that can be provided, when designing and planning the activities. We feel we can design our intervention programs more effective and that we can be more precise regarding our objectives after a thorough assessment and observation. The information from the data and observation phase will allow us to analyze if the opportunities created through the previous intervention encouraged and engaged the student to communicate. On the other hand, projecting and designing more pragmatic and adapted activities, is vital, in order to detect the next needs and therefore the next steps in developing new communication opportunities for the student.

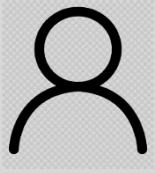
Assessment:
Portage-1
Communication
Matrix
Objectives: use
PECs

PECs,
Books,
Real objects
Social Stories
Milieu Approach,
AAC

Awareness regarding
student's needs

Diary
Checklists
Discussions

2.7 Kate (Action Research Circle 1)



Kate is 7 years and 6 months old. She has motor difficulties, vision disorder, mental retardation and, epilepsia. She hasn't developed verbal communication. During a school day Kate often performs challenging behaviors such as crying, outbursts of anger and, self-injuries (head beating or hand bite). These behaviors are often hard for us to interpret.

However, Kate expresses wishes and needs, through body guidance. More specifically, she guides the adult's hand towards a game or object she desires. When she wants to eat, she gives the spoon from the communication board to the educator. It is noticed that Kate uses the same object, the spoon, to express other needs such as thirst. Her sensory, cognitive and, social difficulties create a barrier in the

development of motivations for interaction, game development and communication.

Plan: ***Assessment:*** Direct observation, the Communication Matrix.

Objectives: Kate performs challenging and self-injury behaviors. The objectives were distinguished in long-term and short-term respectively: a. the long term objective is to interact with the adults in her familiar environment, and b. the short term objective is to use an object of reference to make a request.

Action: ***Methods/ Activities/ materials:*** It was planned to use the basic principles of the Milieu approach, communication routines and, objects of reference. In specific, design of predictable routines with specified start – end points, provision of time for "time – outs", following the child's initiatives, pausing the activity so Kate has the opportunity to ask for "more". These activities were supported by imitating her behavior by repeating Kate's vocalizations and movements, repeating tactile games, using real objects (e.g. musical instruments) or other sensory material – tactile (Wilbarger brush or vibe massage).

Observation: Diary, Discussions with the working team, Meeting notes with the working team.

Reflection: Kate responded instantly to the interaction and to the imitation games with the adult and on some occasions she used one or two objects of reference concerning a wish. Moreover, at the beginning of the intervention, Kate's behavior was – and sometimes still is – challenging. This challenging

behavior was dealt with distraction or negative reinforcement. The information and the methodology helped us feel safer and more confident during the intervention. The data gathered will help improve the design of the next steps since it will be easier to assess the level of communication for the student and choose more appropriate and more focused intervention methodology.

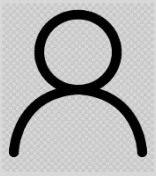
Assessment:
Communication Matrix
Direct observation
Objectives:
reduce self-injury behaviors, use objects of reference

Routines, objects of reference, Milieu Approach

Awareness regarding student's needs
Design the next steps
Choose appropriate material

Diary
Discussions with team
Meeting notes

2.8 Kate (Action Research Circle 2)



In the following months Kate showed some signs of positive response to interacting with the adult and she sometimes used one or two objects of reference to express what she wanted. Thus, we followed the designed activity with the plan of proceeding further with the objective to build on her communicational and interactional skills with the adults.

However, during these last months of intervention, the student was often disorganized without us being able to identify what triggered her. At those times she mostly resorted to self-injurious behaviors.

Moreover, it should be noted that Kate was diagnosed with premature puberty, for which she was treated. There were also changes in her medication (concerning dosage, mostly).

Plan: ***Assessment:*** Direct observation, the Communication Matrix.

Objectives: Although, in theory, the objectives for the student remain the same: a. to develop interaction with the adult (long-term objective) and, b. to use an object of reference to request (short term objective) it is necessary to modify the intervention taking her present needs into consideration. More specifically, the short term objective for her at the moment is to sustain an appropriate stimulation level allowing her to interact safely without turning to challenging behaviors (e.g. self-injury).

Action: ***Methods/ Activities/ materials:*** The basic principles of the Millieu approach, communication routines, objects of reference, to express request. Same strategies as before were used in order to avoid Kate's emotional over flooding and with the main aim of creating those circumstances to allow a

communicational response from her. To be more specific, predictable routines with specified start – end points, provision of adequate intervals for “time outs”, following the child’s initiatives and pausing the activity so that she could have the opportunity to ask for more.

The activities were mostly behavior imitation (sounds and movements). Stimuli (mostly visual) were presented and used as a reinforcement. Tactile stimuli were used to restrain challenging behavior.

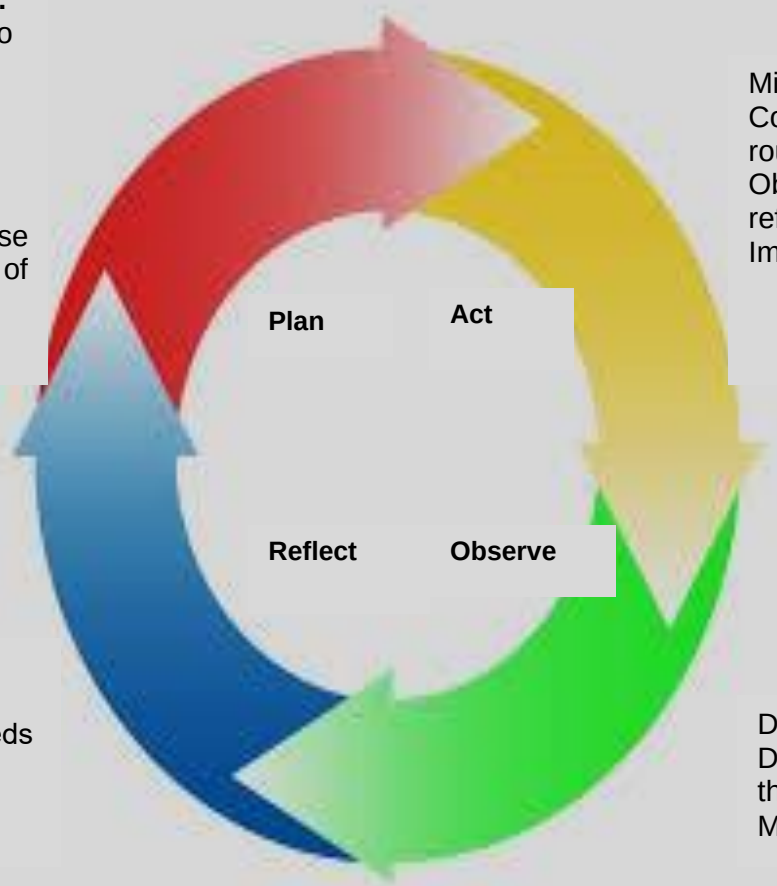
Materials used: Wilbarger brush– tactile interaction, optic fibers, toys with light and, bracelets with bells.

Observation: Diary, Discussions with the working team, Meeting notes with the working team.

Reflection: The short term objective was partially met. Kate was calmer during the longer period of the session. The use of tactile stimuli helped a lot to restrain challenging behavior and to help her focus and achieve joint attention for a few minutes. The self-injury behaviors, which at that time (since other means were not at all effective) were dealt with her being positioned (“restricted”) in her wheelchair. The emotional outbursts were dealt with small intervals during the session. At the beginning, it was very difficult for her to accept being “restricted” to her wheelchair. Kate accepts that now. Moreover, she can now remain focused during the stimuli provided, visual or acoustic. If we manage to sustain this level of cooperation we can then “return” to the initial short term objective: that is for her to use an object of reference in order to ask the visual stimuli/ games, she wants. The information and the methodology helped us feel more confident and safe during the intervention. Moreover, this

process highlighted the significance of other important issues during the session. These issues concern Kate's neurological disturbances and her medical treatment which affect her overall picture.

Assessment:
Communicatio n Matrix
Direct observation
Objectives:
develop interaction, use objects of reference

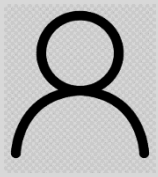


Milieu Approach,
Communication routines,
Objects of reference,
Imitation games

Awareness regarding student's needs

Diary
Discussions with the team,
Meeting notes

2.9 Daniel



Daniel has a very low level of verbal communication. He started to use sounds, as an effect of cochlear implant. Daniel uses full gesture and body/face expression, in communication, as the student is also blind. Hand-on-hand strategy is required for understanding the needs or engaging Daniel in an activity.

Plan: ***Assessment:*** With modifications – The Oregon project, and Callier-Azusa Scale (H)

Objectives: to use sounds and total communication to express the needs and tactually match objects of reference to specific sounds (short term objectives). The long term objective for him is to use verbal speech to communicate his basic needs spontaneously.

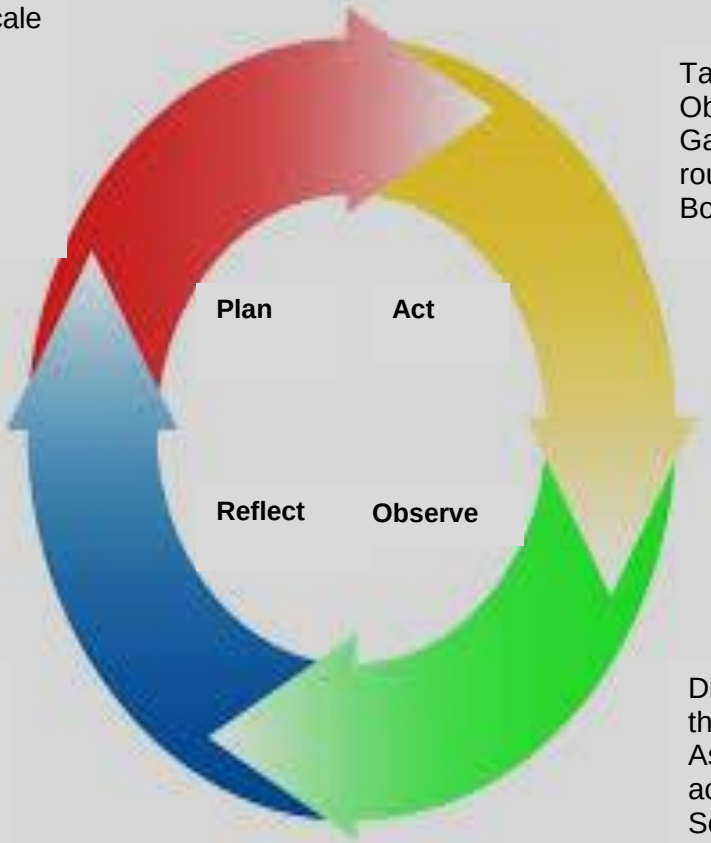
Action: ***Methods/ Activities/ materials:*** Tactile PECs modified to tactile, objects of reference, game-based routines in indoor and outdoor activities, hand on hand guidance/ support and material such as books as audio resources, educational toys, sound jars and toys, "listen and repeat" games, and "say it just like me", were used.

Observation: Discussions with the working team, Assessment activities, self-assessment activities

Reflection: The objectives were achieved with verbal prompts and hand-on-hand support which is a positive start considering Daniel's disability and condition. He showed a very high level of tactile exploration and verbal sound

communication using audio and tactile resources, as well as objects of reference. The data and the records are to be used as an evaluation guide for the intervention and a monthly/ yearly progress of the child.

Assessment:
Oregon project,
Callier-Azuza Scale
Objectives: use total communication

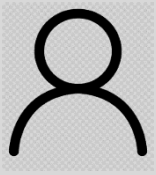


Tactile PECs,
Objects of reference,
Game based routines,
Books,

Awareness regarding student's needs

Discussions with the team,
Assessment activities,
Self-assessment activities

2.10 Matthew (Action Research Circle 1)



Matthew is a young adult who does not have any verbal communication. He is trying to communicate using alternative ways of communicating. For example, he often tries to attract attention by using his physical strength, seeking for a hug or for general contact with the others. He gets excited when he is involved in individualized activities. Mathew mostly communicates using hand gestures and often changes the tone and volume of his voice. He also points with his finger to indicate objects. Mathew uses imitation as a tool for learning (by using his functional vision), which is very helpful for him as well as for the professionals. Moreover, it seems that he grasps an understanding of the usage of various objects, when the use of these objects is modeled for him and the verbal prompt is kept clear and simple.

Plan: ***Assessment:*** Functional assessment, speech therapist's assessment, psycho-educational plan, prior documented observation and educational essays, information from the family.

Objectives: The long term goal is to improve his ability to keep himself occupied in the classroom and to promote the autonomous completion of tasks. To do that we need to build on his capability to increase the time sitting in a chair. In order to achieve that the planned steps include a gradual increase of the time he is engaged in an activity with a corresponding reduction of the support provided, physical (hand-on-hand guidance, modeling) or verbal.

Action: ***Methods/ Activities/ materials:*** The Milieu approach, predictable game based routines and action based routines. The material used were specified working surface and

cognitive building activities (object matching game/ card matching game/ correlation card matching game).

Examples of structured activities are provided below:

- Both student and professional sit on a chair and work together for 5 minutes. After that, the professional invites the student to repeat alone for 5 minutes (the professional is sitting next to the student during the whole procedure.
- When achieved (3 out of 5 successes for 2 consistent weeks), the professional asks the student to continue alone (without the professional's presence) for 2 – 3 more minutes.
- Increase attention span (both professional and student work together for 10 minutes) then,
- When achieved (as described above) the student continues the activity alone for 2 – 3 minutes.

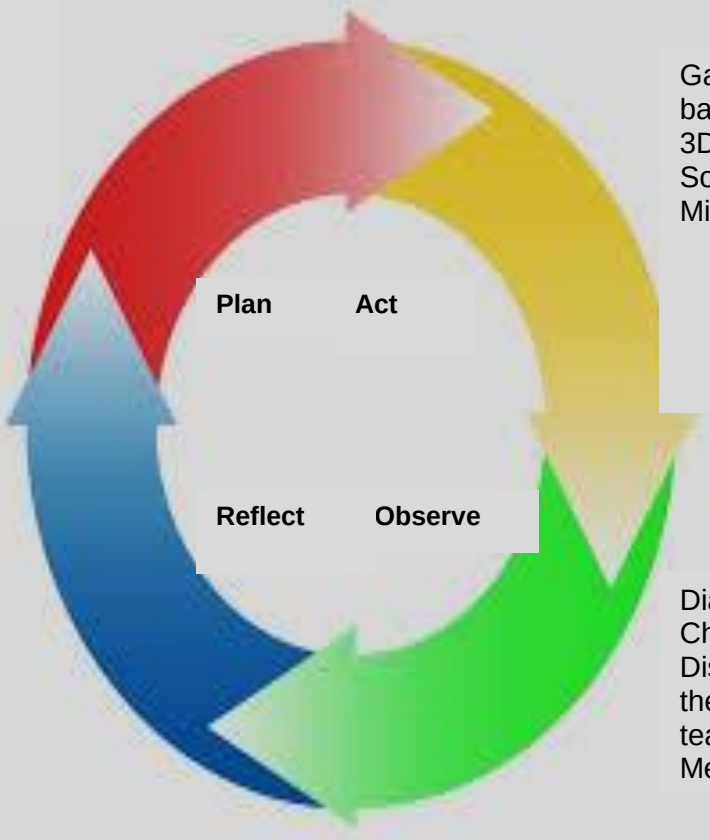
Observation: Diary, checklists, Discussions with the working team, Meeting notes with the working team.

Reflection: The short term objective was achieved. Mathew increased his chair time and managed to continue the game alone without our physical presence required. Repetition and setting demands in a firm and steady tone were very useful. Mathew is very happy whenever he is involved in an individualized activity; for this reason, he remained cooperative through every step of the intervention. However, there were long periods of "stagnancy". It should also be noted that there were several periods of regression whenever the student was absent for more than a couple of days and couldn't follow the repetition and consistency of the educational program. As a

result, significant amount of time was needed to reach the level he was at, before his absence.

This achievement helped us proceed because we were able to build on the student's potential to become more independent during tasks. In specific we aimed to increase his attention during activities and let him take more initiatives. Thus, it seems that we need to explore his interests/ preferences amongst a variety of different games. I would be happy to see this activity generalized in the classroom by the students: that is for him to initiate functional interaction with other students.

Assessment:
Functional assessment tool
Objectives:
engagement in activities

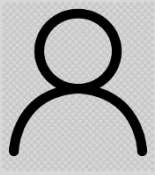


Game and action based routines,
3D objects,
Social Stories
Milieu Approach

Awareness regarding student's needs

Diary,
Checklists,
Discussions with the working team,
Meeting notes

2.11 Matthew (Action Research Circle 2)



Matthew showed some progress regarding the objectives we have set. He succeeded at a constant rate in the activities performed in the previous intervention thus allowing us to proceed with the next steps of the intervention.

Plan: ***Assessment:*** Functional assessment, speech therapist's assessment, psycho-educational plan, prior documented observation and educational essays, information from the family.

Objectives: The objectives remained the same. More specifically, the long term objective is to improve Matthew's ability to keep himself occupied in the classroom and to promote the autonomous fulfillment of tasks. On the other hand, the short term objective is to increase the time of Matthew's active involvement to activities with a progressive disengagement on the part of the professional.

Action: ***Methods/ Activities/ materials:*** The Milieu approach, predictable game based routines and action based routines. The materials used were specified working surface and cognitive building activities (object matching game/ card matching game/ correlation card matching game). Successful completion of the task is followed by a favorite external activity.

Activity structure (the activity has been modeled and performed by Matthew with the trainer, successfully in previous trials):

- Verbal command "on your own" and autonomous performance with the trainer present by the working area. Required working time: 2–3 minutes.
- Then, Matthew is asked to continue alone. Trainer leaves the working area observing from a distance. Required

working time: 3–4 minutes. The task is reminded, if necessary. On success, he is praised.

- Break provided. 5–7 minutes.
- A slightly more complicated task required, e.g. categorize (boy – girl) or correlation card matching game (rabbit eats…). The same procedure followed. Required working time: 8–10 minutes.
- The favorite external activity follows after successful completion.

Observation: Diary, check lists, Discussions with the working team, Meeting notes with the working team.

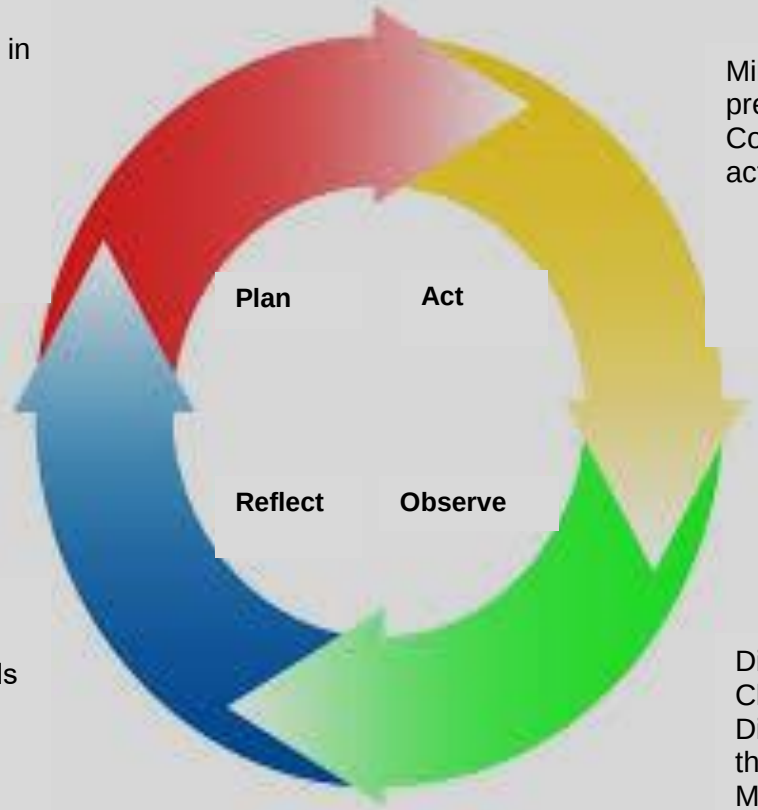
Reflection: Although Matthew showed important progress with the first part of the intervention he still needed time to understand the procedure he was asked to follow. Until then, he would stop and seek a way to interact with us or he would be distracted and do nothing at all. However, Matthew remained seated, which was an important success. Repeated modeling of the task and physical and verbal guidance were provided during that period. Moreover, after a successful effort, the demand of him performing “on his own” was always a prerequisite. Usage of standard vocabulary, appropriate voice tone, repetition, and praise helped significantly.

The short term objective was achieved. Matthew was increased his chair time and he gradually increased “alone” working/ playing time before we needed to return to the working area together to complete the activity.

We can use this and move on to explore more interests and gradually promote choice between activities.

We would be happy to see this activity be generalized in the classroom by the students: that is for him to initiate functional interaction with other students.

Assessment: Functional assessment tool
Objectives: engagement in activities

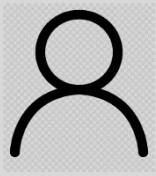


Milieu Approach, predictable games, Cognitive building activities

Awareness regarding student's needs

Diary, Checklists, Discussions with the working team, Meeting notes

2.12 Dylan



Dylan is an 8-year-old who faces severe developmental delays in mobility, cognition and, vision. He has cerebral palsy. Dylan uses a wheelchair and is completely dependent. Besides his difficulties, he is a happy child, who expresses his needs with shouts and smiles. He has no verbal communication, however, he does produce random repeated sounds, often using consonants that are simple to produce, such as: “ma”, “ba”, “ko”. Dylan shows his pleasure or displeasure by producing inarticulate sounds. He understands basic commands such as “take” or “give” and, “lift your head”. He likes games and participates in several activities with joy. He recognizes familiar people by their voices but he also uses his functional vision.

Plan: ***Assessment:*** Functional/ educational (non-standardized) assessment, direct observation, transdisciplinary team assessment.

Objectives: The long term goals are a. to increase participation and autonomy during the feeding process, b. to help him to acquire a better understanding of prompts, and c. to enhance communication. To work towards this direction, we have set the following short term goals: a. to improve his grasp when holding an object, b. to help him become more involved in the feeding process, c. to understand prompts, and d. to express his desire for something.

Action: ***Methods/ Activities/ materials:*** The following strategies were used by PrECIVIM training manual to achieving the goals of therapeutic intervention. The development models

and the observation are based on the initial observation from the chapter Evaluation of communication. From the chapter Communication development in children with MDVI, we use the suggestions for language development and communication in the natural environment.

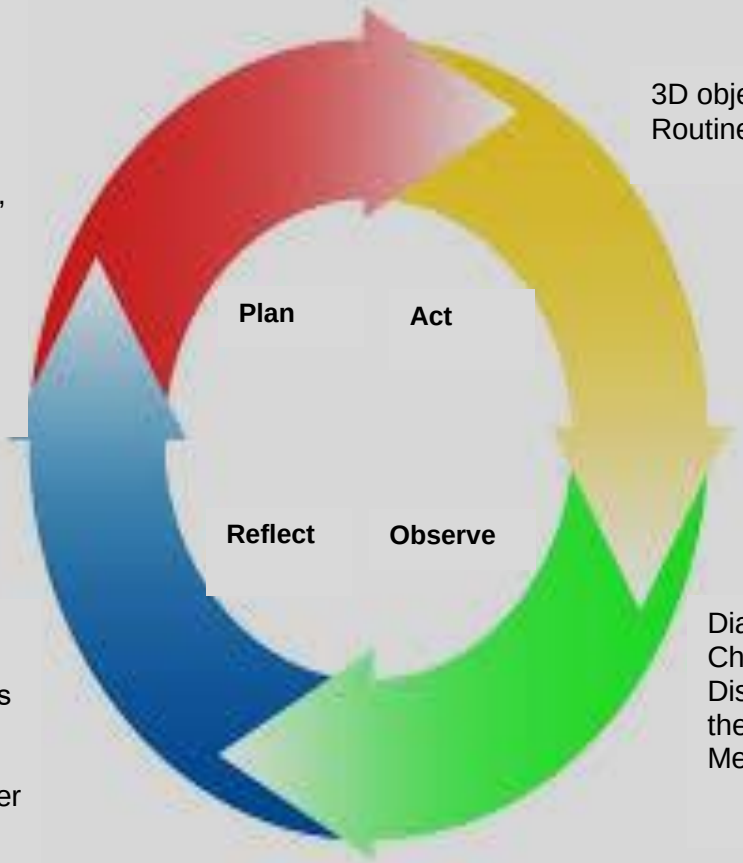
The material used were the actual objects we use with the child during his daily routine. The activity took place during the daily feeding procedure. Before eating, the trainer placed the two objects on the table. After that, the trainer asked Dylan to find the spoon on his own and to take it by himself. The same procedure took place with a straw (e.g. “Dylan can you find the straw to drink your refreshment?)”.

Observation: Diary, check lists, Discussions with the working team, Meeting notes with the working team.

Reflection: Dylan responded to the process with joy, although at first he did not present the required attention and laughed all the time, a behavior which was not reinforced in any way. We provided time for the behavior to fade and we kept setting the same prompt. The student did improve his grasp when holding objects and seemed more willing to participate in the feeding process. Dylan also started to express his wants and needs.

We believe that through the intervention process, a better relationship between teacher and student was developed.

Assessment:
Direct observation
Objectives:
increase participation in feeding process, enhance communication

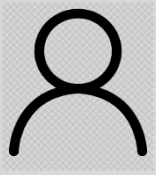


3D objects
Routines

Awareness regarding student's needs
Better relationship between teacher and student

Diary
Checklists
Discussions with the working team,
Meeting notes

2.13 Olga



Olga's medical diagnoses include focal epilepsy (i. e. the predominant symptom is recurring seizures that affect one hemisphere of the brain). In addition, Olga has left hemiparesis which resulted in difficulties to maintain her balance due to limb weaknesses which then lead to an inability to properly shift her body weight. More specifically, she is unable to move her left hand, to grasp or to grab objects. Olga has also been diagnosed with a vision impairment and she needs to wear glasses but she doesn't like them very much. She usually throws them away. Nevertheless, she can see people and objects when they are quite close to her and in her vicinity. She needs time to explore objects and usually she keeps the objects very close to her face. According to her medical records Olga has learning difficulties which have a negative impact on her understanding regarding language and learning. As a result, big delays take place regarding the development of Olga's play skills, attention skills and self-help skills. Finally, Olga's Educational Health Care Plan (EHCP) states that she has difficulties in a. tracking and lifting toys and passing objects between both hands, b. making a choice between two items, and c. focusing in group activities (as she gets easily distracted by noise). According to her EHCP, she gets tired very quickly and struggles with eye contact. She is non-verbal and most of time she's reliant on adult support.

Plan: ***Assessment:*** we used the communication matrix as a tool for assessing the student's communication skills. It seems that she masters pre-intentional and intentional behaviors.

Objectives: Olga needs support to convey her needs and wants. For this, we used methods of unconventional and conventional communication. In the short-term, the objective we set for Olga was to learn to use specific vocalization to

indicate what she wanted to do, whereas the long-term goal was to develop robust responses to specific stimuli. Establishing predictable routines, offering opportunities for choosing and decision-making, giving sufficient time to explore, encouraging student interactions and providing imitation, game, action and reference-based routines were appropriate activities and strategies to use for the achievement of these learning objectives/targets.

Action: *Methods/ Activities/ materials:*

Regarding the activities, we planned to use intensive interaction as a tool to meet these objectives since this type of intervention works well for her as it is stated in the students' Education, Health and Care Plan (EHCP) that. This observation was also confirmed at meetings with parents and previous teachers. More specifically, we used routine-based interventions, imitation-based routines, action-based routines, game-based routines, and reference- based routines. We felt that these specific interventions would be beneficial as the Resonance Board provides opportunities to imitate the child's behavior (for example use the Intensive Interaction Approach). Olga is a person who loves music and responds well to audio cues at the beginning of a session. She also uses music to self – regulate. She likes to listen to "Kidzbop" - a band of teenagers in North America - who cover contemporary popular music songs. She likes to bop her head to some favorite music and wave her stronger right arm wildly in the air. We felt that one of these songs was an appropriate audio cue to use before our resonance board session in which we explore a number of items (wooden spoons, chains, marbles etc.) to different musical genres. This was previously a session that she chose to disengage from as she did not like some of the music that was played in the background.

The materials we decided to use were tactile and sensory objects such as wooden spoons, chains, marbles, scrubbers, velvet material set to different musical genres.

Observation: Diary, Video recordings, discussions with the working team, and assessment activities.

Reflection: The main challenge we faced was that Olga could get anxious in group-based sessions, which could trigger self-injurious behavior (banging head with hand and foot). A member of staff was asked to work with this student throughout the intervention, to remove her from the group and work 1:1 if she displayed such behaviors.

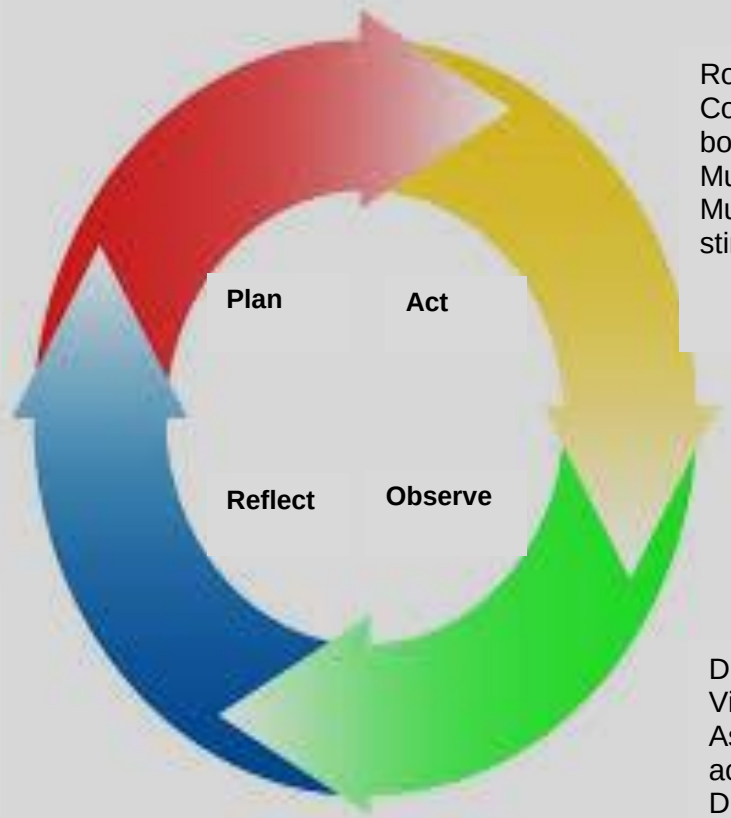
We quickly realized that Olga loved to play with bags of marbles because she spent more time with this type of objects than other. We changed the order of the songs/resources and she consistently chose the marbles. It was also noted that she made a cooing vocalization as she ran her fingers through the marbles over the course of the intervention.

We did feel that we made progress as a team in recognizing that the pupil made a “coo” like vocalization exploring a specific item during a session she previously disengaged from. The student responded well to the intervention and engaged more as the project progressed.

We were unable to recognize any form of conventional communication by her when she wanted a particular resource or when she wanted to carry on with a particular activity. This will require further work and continued interventions. We agree with Hewett and Nind that intensive interaction is an effective strategy to develop communication methods in pre-verbal students. The strategy is also linked with the communication

matrix assessment tool by Rowland to indicate at what level the child is able to communicate and allow the adult to formulate ideas and plan ways to promote more effective levels of communication especially for MDVI students.

Assessment: Communication Matrix
Objectives: use vocalizations to express needs & desires

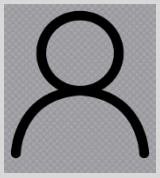


Routines,
Communication board,
Music
Multi-sensory stimulation

Awareness regarding student's needs

Diary,
Video recordings,
Assessment activities,
Discussions with the team

2.14 Noah



Noah is an adult with MDVI. More specifically, he has vision impairment, mental disability, and challenging behavior. Noah doesn't have verbal communication. He communicates with a limited range of nonverbal sounds (mumbling, screaming) and displays self-harming behaviors whenever he is stressed. These nonverbal sounds – vocalizations alongside his face mimics and tension of the voice are interpreted as a means to express mostly biological needs. The intensity of these vocalizations depends on the urgency of the need or desire, at the given moment.

Noah communicates his needs at a pre-intentional level until they are satisfied. He has very low tolerance limits, which may lead to tantrums. When calm, he can locate the source of a sound and may focus attention on it or follow simple guidelines. Most of time he is unwilling to engage in any kind of structured activity (for example, return the chair to the table after having lunch/ return the plate to the bench etch). Setting requests may trigger challenging behaviors.

Plan: ***Assessment:*** Functional assessment, individualized psycho-educational plan, useful information from the family about home routines.

Objectives: The long term objectives for Noah are: a. to establish a connection between pictogram and activity, b. to engage in an activity for more 3 minutes, and c. to effectively recognize and use landmarks to walk more independently. The short term objectives are: a. to be able to identify objects, and b. to expand walking time, using the sidebar independently.

Action: ***Methods/ Activities/ materials:*** To proceed with the objectives we used suggestions from the tactile symbol directory, the development of predictable routines, provision of time for breaks, observation and utilization of stimuli. The activities involved meetings with the team, environmental modifications (using the dining room before other trainees to reduce tension triggering factors),

providing a safe and secure environment, routine-based intervention in natural context, repetition and predictable program. A big range of materials was used such as: dining room sidebar and corresponding reference objects such as spoon for the dining room, plate for the dining room and ringing bell for the music therapy. The activities chosen were based on the fact that Noah exhibits mood changes in an unexpected manner during the day as well as to the fact that he engages in an activity for a limited time. Therefore, the first activity was linked to a strong incentive, such as food and the second one to music therapy, which seems to be a favorable activity.

Observation: Field notes, Discussions with the working team, Meeting notes with the working team and daily observation.

Reflection: Noah is feeling more independent when walking and uses the site marks, however, we need to continue and proceed to the next site marks (ringing bell for the music therapy session). At first, it was difficult for him and he resisted in cooperation by moaning or by stopping during the intervention and a lot of repetition – in a steady calm voice – was necessary. In general, he still responds negatively whenever he is asked to do something. The most unexpected event was that the student proved to be more capable to start walking independently than expected; this event made us re-consider his status of capability. This also helped us keep an open mind regarding his potential and be more patient and optimistic about the outcomes of our efforts. Moreover, this data assisted to set new realistic goals by taking the appropriate steps, such as planning a sensory desensitization intervention program to help him start tolerating touch and to

start using touch as a means of communication. It will also help identify the factors that add up to the student's "learning" – (feel safe, aware and cooperate).

Assessment:
Functional assessment tool

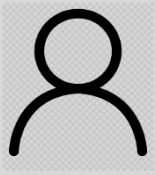
Objectives:
connect pictogram and activity, engagement in activities, use landmarks to walk

Routines,
Tactile symbols,
Objects of reference
Music

Field notes,
Discussions with the team,
Meeting notes

Awareness regarding student's needs

2.15 Evelyn



Evelyn is blind and manifests autistic behavior. The use of language is repetitive and echolalic. Sometimes she uses isolated sounds and words which are irrelevant to the specific moment and specific context. Evelyn expresses her needs using questions addressed like "Do you want…?" When she wants more of something she asks "Do you want more?" When she refuses a task, object or activity she just puts the object away or pushes everything that is in front of her. Evelyn doesn't understand the process of communication, and doesn't use verbal language in an intentional way but as a result of an interaction. She is sensitive to sounds, textures, people's voices and she reacts by covering her ears with her hands. She likes singing nursery songs.

Plan: ***Assessment:*** The Oregon Project, Callier-Azusa Scale (G, H), Observation in different environments and interview with the parents.

Objectives: The long term objectives are a.to be able to express her needs using proper format of a sentence (I want …), b. to express refusal, acceptance or discomfort in a socially accepted manner, and c. to express her feelings using appropriate words. The short term objective is to use objects of reference to express denial, discomfort, and acceptance.

Action: ***Methods/ Activities/ materials:*** Specific interventions in developing communication skills were used: the Milieu Approach, routine interventions, objects of reference, PECS, rewards, explaining and verbalising every action. We used objects instead of pictures for PECs, because the student is blind. We also used music and play activities, which the student enjoys (playdough).

Observation: Checklists, assessment activities, self-assessment activities.

Reflection: We felt that we partially met our objectives. The student communicated her needs, but she used echolalia. I also set some objects of reference and identified the objects and activities that could be used as a reward. We tried to implement routines but we felt like we needed to extend the period of intervention for more accurate results.

In general, Evelyn responded well to the intervention but sometimes refused to interact, especially when the task was too complex for her. Moreover, she refused to use some objects during the intervention process, thus we tried to replace them with more suitable ones that were acceptable by Evelyn.

We feel that we can use the information from the PrECIVIM manual to implement long term interventions (which are more effective) to develop communications skills.

The data help us identify the strengths and weaknesses of the intervention, and understand which approach is more effective.

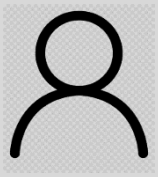
Assessment:
Oregon project,
Callier Azusa Scale
Direct observation
Interviews
Objectives: express needs, refusal & feelings.

Routines,
PECs,
Objects of reference
Music
Milieu Approach

Awareness regarding student's needs
Design appropriate interventions

Checklists
Assessment activities,
Self-assessment

2.16 Mike



Mike is a four-year old student. He has been diagnosed with cerebral palsy and athetosis, hypotonia, sensory process difficulties, psychomotor retardation, and cognitive vision impairment (CVI). Regarding communication skills, Mike does not use formal or symbolic language. Sometimes, he may respond to simple guidelines, such as “please keep your fingers out of your mouth”, but generally speaking he seems to not have stable and discrete perceptions of objects (including that of the human body). When he wants to make a contact, he chooses to move or to roll to the other person. Mike expresses his preferences by smiling or by short vocalizations (non-consistent reactions). Based on personal observations, I feel that Mike is at the pre -intentional communication level. He has not developed joint attention, even though he seems to be capable to respond to simple verbal prompts or guidelines mainly concerning home routines. On the other hand, he is greatly motivated by his older brother and shows great interest in being with him. He enjoys standing with support, moving his legs, as well as being in the water. He can enjoy eating food, while he sometimes tries to explore his playground by rolling towards and touching things.

Plan: ***Assessment:*** The Oregon Project, Communication Matrix, Functional assessment scales for the main areas of interest (vision, hearing, cvi range).

Objectives: The long-term objectives were based on Mike’s assessments regarding his difficulties in sensory processing, visual, cognitive and motor restrictions, as well as his difficulties with sustained attention. Thus, the long term objectives for Mike are: a. to initiate communication in a verbal/ nonverbal manner, and b. to learn to touch an object – paired to an activity. To do that we need to create a shared space and routine with an adult where Mike can exhibit joint attention and built up the communication skills from there. In turn, we set short term objectives such as: a. to develop joint attention in imitation, game and action routines, b. to facilitate systematic verbal (at his level) or nonverbal signs of response to continue the activity,

c. to familiarize him with action routines- pairing a familiar object with a repetitive daily activity (food, diaper changing etc), and d. to involve the family to the process by helping them establish meaningful (for them also) routines using imitation, game and action routines.

Action: ***Methods/ Activities/ materials***: Basic principles and suggestions were accumulated from development of communication, communication assessment, individual assessment plan, Milieu's approach, routine based interventions.

The activities used were: 1) greeting and goodbye songs, specific play activity with face and body gestures, with imitations prompts, stop and go technique - the child should have a sign to continue the behavior, 2) choice between two familiar toys to play and follow the child's cue, 3) adaptations of toys to be more accessible and usable (switch connected with the familiar toys), 4) follow the child's movement (rolling to touch his surroundings) and provide meaningful verbal and nonverbal feedback , and 5) parent – child observation in their routine interaction and suggest some adaptations. The material used were: 1) the trainer's body (face and hands) visually intensified to attract and maintain his visual attention as well as tactile stimuli (meaningful objects or toys, favorite fruit and favorite toy) to have a more unified and stable perceptive channel, 2) big yellow Switch connected with familiar sound toy.

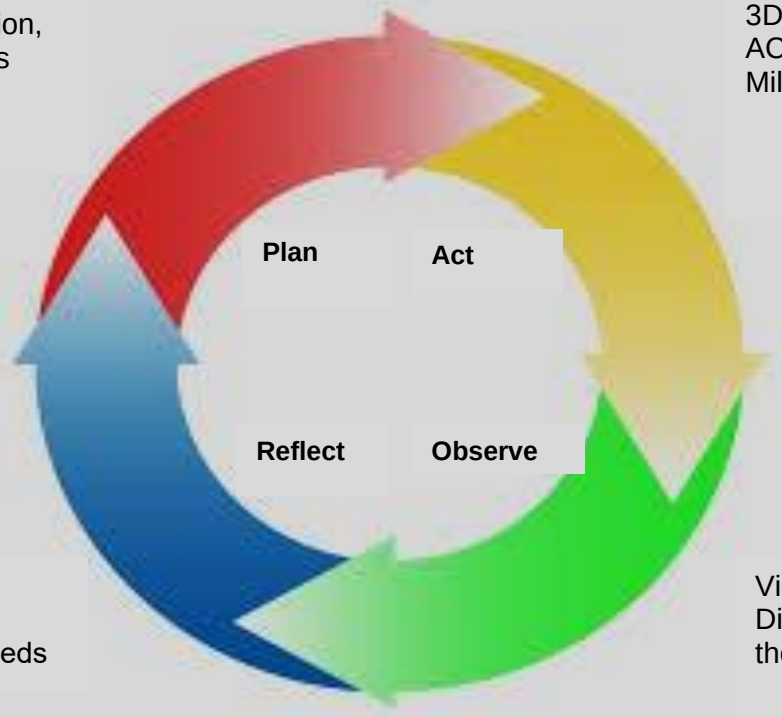
Observation: Video recordings, discussions with the working team.

Reflection: The results are contradictory. In general, Mike liked the joint attention routine games and I was more successful in facilitating a bit the joint attention for short periods. But he didn't initiate meaningful contact and he needed time to respond or didn't respond at all.

Sometimes, during the session he seemed to be disorganized because of his sensory difficulties. Due to the sensory processing problems and the fluctuation of responses there were sessions where Mike was preoccupied with oral hyperactivity, which blocked his attention and movement even though he was still enjoying the activity. The activity was modified to this level and the intervention was focused to help him regulate in a sensory manner where some of the game routine techniques were implemented. I will use some of the videos from the beginning and the latter phase of the intervention to succeed a better “communication” with the child. Perhaps a slight modification of the used techniques and their meaning of these techniques to the child may help to this direction.

Assessment:
Oregon project & Communication Matrix
Objectives:
initiate communication, touch objects

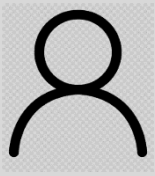
Songs,
3D objects,
ACC,
Milieu Approach



Awareness regarding student’s needs

Video recordings
Discussions with the team

2.17 Amelia



Amelia is 14 years old with cerebral palsy, mental disability, and a vision impairment. Regarding expressive communication skills, the student can communicate verbally but only by choice. She presents a form of selective mutism, since she uses spoken language to communicate with one parent (even though the dialogues may be limited) but not with other familiar people in her surroundings (school or family). Amelia uses a few words at school such as “bye”, “yes”, “good morning” or some names e.g. Nickolas but they are context irrelevant. The main means of communication to the student is by using AAC devices: Amelia responds by choosing between two options (e.g. answer questions from a lesson or choose what she wants to do). Switches and/ or objects are positioned appropriately in her surrounding in order to facilitate tracking and tracing. In terms of receptive communication, she can comprehend and follow several guidelines such as “give me please”, “put it in the basket please”, “can you change your posture for me please?” etc. When she really likes something such as music or when it’s her turn to perform a task, she is very excited and laughs.

Plan: ***Assessment:*** Direct observation during activities (in and out of the classroom), conduct meetings with Amelia’s parents, collect information regarding Amelia’s background (including relevant medical assessments) in conjunction with therapists’ and psychologists’ assessments.

Objectives: The general objectives for Amelia concern: a. her social skills, e.g. to participate to routines that take place in the classroom, to develop useful habits during group activities, to interact with classmates, b. her comprehension and communication skills, e.g. to become more time orientated (day, months and seasons) in a verbal and sensory manner, to be able to listen to an age appropriate story and respond to simple questions with her AAC device, c. to use AAC devices, switches or tablets as a means of interaction or

entertainment, and d. other fields concerning everyday life skills, sensory skills etc.

Action: ***Methods/ Activities/ materials:*** Milieu approach, AAC. Activities include action based routines and game based routines: a. the "good morning" routine where the students need to participate using a communication device (repeated action) and choose greeting, and b. alternative and augmentative communication devices: during the activities two simple switches are used. The switches are placed diagonally, on her left and on her right hand. She then has to listen to the messages and choose one of two to respond to questions. These switches are also used by Amelia when she wanted something to drink or to eat.

Material used: songs, interactive board, large dices, communication dices, musical books, table board games, various textures or scents for the days of the week, tablet, switches.

Observation: Diary.

Reflection: We are still working on the objectives but it is certain that there is a stable progress. We are still confronting difficulties regarding Amelia's oral expressions (although she has that skill) and choices that are based on a reasoning (e.g. I ask for water because I feel thirsty, etc.).

Amelia was very cooperative, she liked to have our attention and handled alternative and communication methods quite well. We felt this was an opportunity to reflect on the objectives and the planning of our educational intervention under a different prism and a method to renew our educational approach.

Assessment:
Direct Observation
Objectives:
participation,
interaction

Game based
routines,
AAC,
Music
3D objects
Books

Diary

Awareness
regarding
student's needs

3. CONCLUSIONS

Most of the children who participated in the PrECIVIM project during the implementation phase were at pre-intentional communication level regarding the model of development of communication (Rowland, 2012; Rowland & Schweigert, 2000). The children in question tried to communicate through different ways such as crying, fussing, smiling, body movements, and other nonverbal behaviors to show comfort or discomfort (Brady, Steeples, & Fleming, 2005). On the other hand, professionals and parents try to interpret these behaviors and introduce an acceptable communication code in order to establish a robust communication platform. The communicative behaviors at this level of communication may be unusual and therefore sometimes it is difficult to identify and interpret them. Also, teachers' and professionals' responses (e.g. talking, signing) may not be understood by children with vision impairment and multiple disabilities (Chen, 1999). Children with MDVI demonstrate peculiar and non-purposeful behaviors, which may bring about great difficulties to the professionals in terms of planning and implementing effective intervention programs. For this, there is a need to conduct thorough assessments in order to trace any "signs" of any type of interaction and start communication in a meaningful and functional way with the children in question (Ayyildiz, Akcin, & Guven, 2016).

For the aforementioned reasons, it is helpful for the teacher or the professional to collect information regarding a child's needs, preferences, interests, and communicative behaviors. In order to improve the communication skills of children with MDVI, it is very important to identify unique, individual communication behaviors of these children (Ayyildiz, Akcin, & Guven, 2016; Janssen, Riksen-Walraven & Van Dijk 2006).

Every student with multiple disabilities and vision impairment (MDVI) presents a unique educational challenge. Teachers and other professionals need support and training to understand how these students experience and understand the world (Dammeyer & Ask Larsen, 2016; Chen & Downing, 2006). The present intellectual output refers to teachers and professionals who work with students with MDVI. Assessing communicative skills and design and

implement relative interventions is a challenge. The PrECIVIM project bridges assessment and intervention and underlines the need of assessment for the development of individualized educational approaches (expressive and receptive communication modes, adapted materials, assistive technologies, instructional strategies, multisensory approaches) which would promote the development of communication skills of students with MDVI (Bruce, Luckner, & Ferrell, 2018). Section B constitutes a series of examples of different case studies in four countries. Action research method, expressive and receptive communication modes, adapted materials, reflection, and training material were the core elements which composed the common platform upon which many teachers and professionals worked hard.

It is worth mentioning that all these interventions which took place in different educational settings with different social-cultural characteristics had common elements regarding techniques or practices such as:

- ✓ detailed description of the student's profile before any type of intervention
- ✓ regular use of non-conventional symbols (i. e. words, signs, or picture symbols) or frequent use of simple basic vocabulary (minimal words rendered with a toned voice)
- ✓ task analysis in simple little steps or break down an activity in easy steps
- ✓ clear-stated starting and finishing stages of an activity
- ✓ clear boundaries in every task
- ✓ modeling before asking in order to increase self-regulated learning
- ✓ stability of the learning environment
- ✓ repetition of the activity in order to build familiarization and engagement
- ✓ many short breaks
- ✓ flexibility in changing or adapting the intervention program due to the student's behavior
- ✓ use of reward systems
- ✓ systematic use of students' favorite colors, toys, materials, sounds, etc.

In conclusion, this work led to the synthesis of a Best Practice Output which incorporates on one hand ***generality*** regarding levels of communication in the population of children with MDVI and globalized practices, and on the other hand, ***locality*** regarding culture, social context, and working environment.

4. References

Argyropoulos, V., & Nikolaraizi, M. (2009). Developing inclusive practices through collaborative action research. *European Journal of Special Needs Education, 24*(2), 139-153.

Ayyildiz, E., Akçin, N., & Güven, Y. (2016). Development of Preverbal Communication Skills Scale for Children with Multiple Disabilities and Visual Impairment. *Journal of Human Sciences, 13*(2), 2668-2681. doi:10.14687/jhs.v13i2.3718

Brady, N.C., Steeples, T., & Fleming, K. (2005). Effects of prelinguistic communication levels onlevels on initiation and repair of communication in children with disabilities. *Journal of Speech, Language, and Hearing Research, 48*(5), 1098-1113.

Bruce, S.M., Godbold, E., & Naponelli-Gold, S. (2004). An analysis of communicative functions of teachers and their students who are congenitally deafblind. *RE:view, 36* (2), 81-90.

Bruce, S.M., Luckner, J.L., & Ferrell, K.A. (2018). Assessment of Students with Sensory Disabilities: Evidence-Based Practices. *Assessment for Effective Intervention, 43*(2), 79-89.

Chen, D. (1999). Learning to Communicate: Strategies for Developing Communication with Infants Whose Multiple Disabilities Include Visual Impairment and Hearing Loss. *reSources, 10*(5), 1-10. Published by California Deaf-Blind Services.

Chen, D., & Downing, J. (2006). *Strategies for children who have visual impairments and multiple disabilities*. New York: American Foundation for the Blind.

Dammeyer, J., & Ask Larsen, F. (2016). Communication and language profiles of children with congenital deafblindness. *British Journal of Visual Impairment, 34*(3), 214–224. https://doi.org/10.1177/0264619616651301

Eames, K. (1990). Growing your own: supporting the development of action researchers within an action research approach to whole-school development. *British Journal In-service Education, 16*, 122-127.

Feldman, A., & J. Minstrell, J. (2000). Action research as a research methodology for the study of the teaching and learning of science. In A.E. Kelly & R.A. Lesh (Eds.), *Research design in mathematics and science education* (pp. 429–55). London: Lawrence Erlbaum Associates.

Janssen, M.J., Riksen-Walraven, J.M., & Van Dijk, J.P.M. (2006). Applying the diagnostic intervention model for fostering harmonious interactions between deaf-blind children and their educators: A case study. *Journal of Visual Impairment & Blindness, 100*(2), 91-105.

Kemmis, S., & McTaggart, R. (1988). *The Action Research Planner*, (3rd ed.), Victoria, Australia: Deakin University.

McInnes, J.M., & Treffry, J.A, (1982). *Deafblind infants and children*. Toronto: University of Toronto Press.

McNiff, J. (1994). *Action Research – Principles and Practice*. Macmillan Education Ltd.

McNiff, J., Lomax, P., & Whitehead, J. (1996). *You and Your Action Research Project*. London: Routledge.

Rowland, C. (2012). *Communication matrix: Description, research basis and data*. Retrieved from: https://webcache.googleusercontent.com/search?q=cache:T-ZcGfQM5ScJ:https://communicationmatrix.org/Uploads/Pdfs/CommunicationMatrixDataandResearchBasis.pdf+&cd=1&hl=en&ct=clnk&gl=gr&client=firefox-b-d

Rowland, C., & Schweigert, P. (2000). *Seven levels of communicative competence. In Communication development and teaching strategies for children with severe and multiple disabilities: Presymbolic communication and tangible symbol systems*. Portland: Oregon Health and Science University Design to Learn Projects.

Warner, C., & Wolf Nelson, N. (2000). Assessment of communication, language, and speech. In B.A. Bracken (Ed.), *The psychoeducational assessment of preschool children* (3rd ed. pp.145-185). Boston: Allyn & Bacon.

Westling, D.L., & Fox, L. (2004). *Teaching students with severe disabilities* (3rd ed.). New Jersey: Merrill Prentice Hall.