READY TEDDY, GO!

Addressing the social development, communication and interaction of students with SEN.

A guide for teachers, social workers, parents and educators.

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Content

1. Augmentative alternative communication systemas

Module Description:

The aim of this module is to aid the public, specifically Special Needs Educators, teachers and any individual that is collaborating with children with **Autism Spectrum Disorders** (ASDs), to understand the essence of a variety of therapeutic treatments, also referred to as **Applied Behavioural Analysis** (ABA), **Treatment and Education of Autistic and Communication Handicapped Children** (TEACCH) and **Picture Exchange Communication Systems.**

 Specifically, through this module learners will gain extensive knowledge on the several variations of ABA, including Positive and Negative Reinforcement, Prompting and Fading, Task Analysis and Generalization. In addition, following Topic 1-Applied Behavioural Analysis, the module proceeds to the methodologies that are being utilized, in order to implement TEACCH and Picture Exchange Communication Systems.

Figure 1. *Children playing*. *Source*: *Canva*

1.1.   Applied Behavioral Analysis

What is Applied Behavioural Analysis?

Behaviourism is a systematic approach in which John B. Watson aimed to incorporate into the essence of psychology, which at a period of time only included the analysis of internal thoughts, to a more observatory means of exploration. Hence, he re-shifted the field and only concentrated an *observable* and *measurable* behaviours.

For instance: Consider all the potential scenarios that could occur if you brought a 5-gallon tub of ice cream to work on a Friday:

- Your co-workers get excited and think that you're cool!
- For the ice cream party, your boss might tell everyone to leave a little early.
- You risk having a heated argument with your boss.
- Your bonus could be taken away if your manager is angry with you.

Therefore, your behaviour of bringing ice cream may vary in the future, depending on how it was received when you provided it. Depending on the outcome, you may bring it more or less frequently. In other words, the type of response that is generated after a behaviour (consequence), including a punishment or a reward, will determine whether that behaviour will be repeated again. However, when incorporating a punishment as a result, it will not always be perceived as an undesired or aversive outcome to an individual.

Therefore, it is vital to remember that each individual might be differently affected by a consequence and might not decrease their behaviour in the future (Fisher et al., 2021). In conclusion, this technique of documenting a response and then implementing the appropriate method for reinforcing or terminating a behaviour is also known as Applied Behavioural Analysis (ABA).

Applied Behavioural Analysis is the direct application of observation and measurement of behaviour, through the use of antecedent stimuli, positive reinforcement and other consequential techniques to result to an alteration in a specific behaviour (Foxx, 2008).
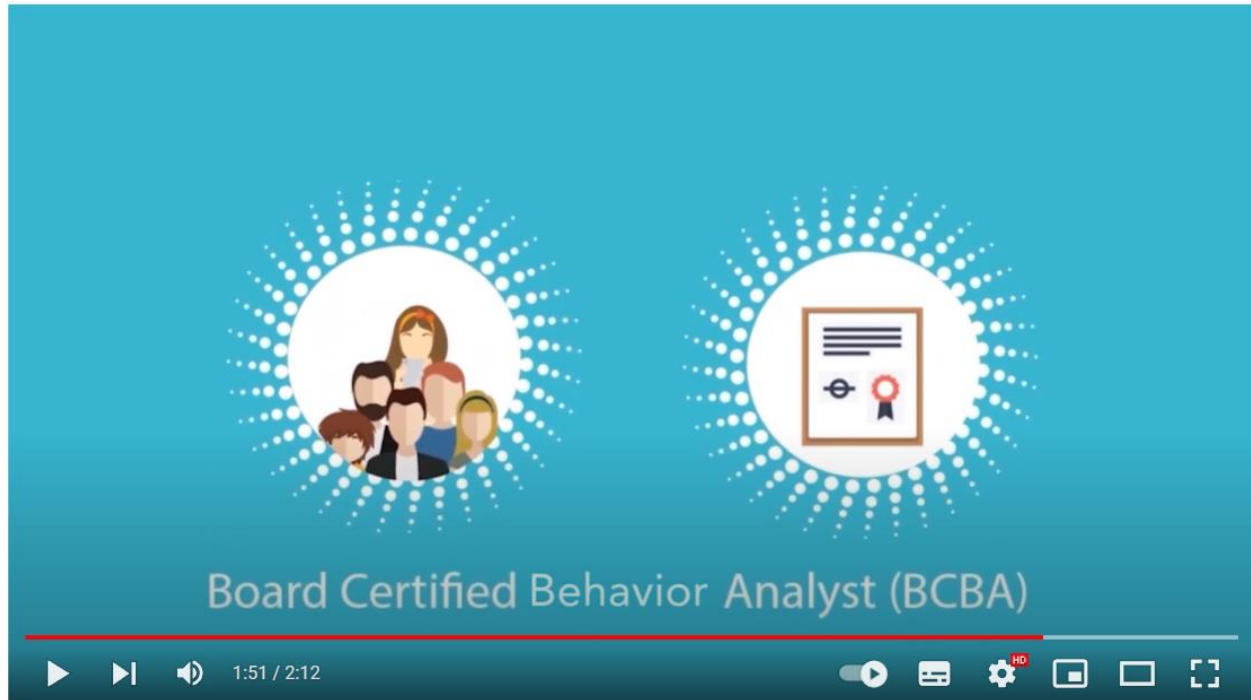
Figure 2. *Video "What is ABA Therapy?". Source: LEARN Behavioural.*

 Click on this **2-minute video** to learn more about the specifications of ABA!

Specifically, behaviour-analysis focused for Autism-Spectrum Disorders (ASD) uses reinforcement techniques in controlled and uncontrolled environments to enable the children to develop and learn new competences. Essentially, simple to advanced skills are deconstructed into manageable chunks and are taught methodically. Making it pleasurable for the student is a top focus. The learner is more likely to display acceptable behaviour both during and after the teaching

Figure 3. *Teacher & student. Source: Freepik*

engagement with carefully prepared guidance and reinforcement. Problematic behaviours, on the other hand, are not encouraged. To create a successful intervention strategy, some analysis may be required to identify the function(s) and reinforcers for these behaviours.

Nonetheless, prior proceeding to the sub-categorizing techniques that compose Applied Behavioural Analysis, it is essential to fully understand the various processes, of which this

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methodology is based upon. The objective of this methodology is to deduct conclusions from realistic scenarios and evaluate how a positive behaviour can be repeated and how a negative behaviour can be eliminated. Therefore, by applying this technique into the educational field the objective of ABA is to help educators and parents comprehend:

〉 How behaviours operate;
〉 How a behaviour can be impacted by the environment;
〉 How learning occurs.

However, in order for an ABA treatment to be successful, the practitioner should ensure that they integrate all 7 dimensions in the intervention plan of the child. The 7 dimensions include:

1. Generality;
2. Effective;
3. Applied;
4. Technological.
5. Conceptually Systematic;
6. Analytic;
7. Behavioural;
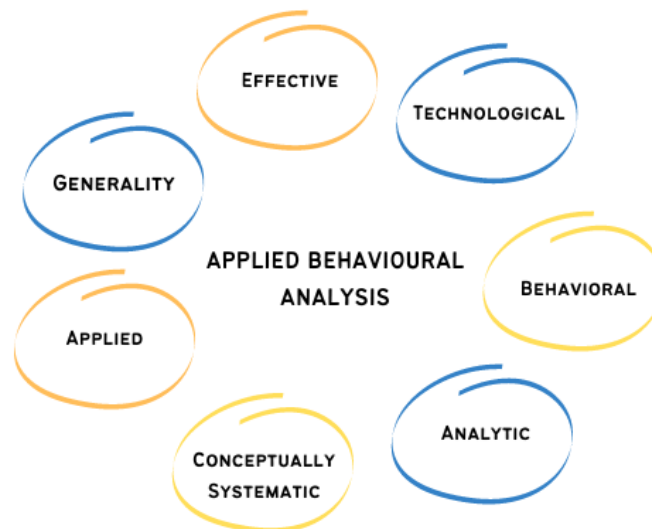
Figure 4. *The 7 dimensions of ABA. Source*: *Wolfe & Neisworth, 2005*

1. Generality:

When a behaviour is in need of change, this behaviour adjustment is not supposed to occur instantaneously, neither should it last only for a short period of time. The essence of this treatment is to ensure that the skills acquired within the intervention are not affected by the individual's external factors, including their environment and the individuals surrounding them. ABA is frequently carried out in a controlled environment atmosphere or in a setting that is more clinical in nature.

However, despite the fact that the programming is originally carried out in this setting, the treatment plan should be created to reflect the patient's actual surroundings. Essentially, this technique will ensure that the behavior is generalized to various circumstances and situations and persists over time. While it is ideal to have a consistent staff during ~~your child's~~ treatment, the child should also have access to other children and professionals to practice their newly acquired abilities. A treatment is not deemed successful or effective until generality is attained.

2.   Effective:

The interventions being employed must also be successful, by ensuring that the objectives reflect and are pertinent to the client and their community's culture. "*Is the intervention working?" or "Am I seeing the desired progress?*" are two crucial questions to ask. Frequent progress-monitoring of the collected data and observation of how the child is responding to the treatment, are the two variables answering these questions.

3.   Applied:

The specific treatment objectives that require priority are formulated according to the significance level the patient and their family place. Each person's socially relevant actions are unique to them and are the skills that will help them fit in with their environment more successfully and effortlessly. In other words, for a treatment to be socially valid, it must cause and maintain adaptation during the child's daily life.

For instance, if the child is engaging in a tantrum behaviour, because they have specific wants and needs, but has not acquire the skills to effectively communicate these necessities, the appropriate intervention tailored to this situation, is to teach the child how to effectively communicate their wants and needs. Thus, this objective would be a socially valid objective. It would not only exert an immediate-beneficiary impact on the child's daily life, but I would also benefit the individuals that interact with the child, including family members, teachers, friends. The treatment team must always take the client's importance of the intended behavior change into account when choosing therapeutic strategies.

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4. Technological:

The therapeutic intervention should be described so clearly, so that if there is a possibility that another individual would like to repeat the process, they will be able to replicate it, without any difficulties. All of the strategies that make up an intervention should be precisely identified and described in order to enable this. Consider your favourite cake-baking recipe from Pinterest as an illustration; it is clear, simple to follow, and beautifully written. Although using behavioural analytic therapies on individuals is undoubtedly more difficult, the same principles should apply.

Even if the technique described is unclear or difficult to understand, it is unlikely that everyone on the treatment team will approach treatment the same way. A technology behavioural intervention is simple to duplicate and has a high level of treatment integrity.

5. Conceptually systematic:

An intervention that is conceptually systematic is one that is grounded on research and adheres to applied behaviour analysis principles. Is this intervention congruent with the principles that have been found to be effective as identified in the research?

6. Analytic:

The analytical approach explains that the decisions being made are derived from the data, establishing that the interventions utilized are based on the gathered data. When analysing the data, we need to identify and alter certain factors if the intervention method is not cultivating the desired change in the intended behaviour.

We can establish a trustworthy link between our intervention and the development of the positive behaviour, once the intervention has been improved and the data reveals an improvement in the intended direction. This tackles the question of plausibility: will the intervention utilized and the data demonstrating the change, be adequate to indicate a trustworthy functional relationship?

7. Behavioural:

In order to modify behaviour, it must be observable and measurable. If we can observe behaviour, we can collect data to quantify it, and then we can alter it (Cooper et al., 2007). The word "behaviour" is not only used to refer to undesirable activity; it can also refer to suitable or desirable behaviour. Behaviour analysts aim to modify some behaviours while simultaneously enhancing others. In addition, it's critical to talk about "behaviour change" in terms of how it affects the child's life as a whole, not just their behaviour.

Figure 5. *Children holding hands*. *Source*: *Freepik*

Evidently, ABA has been particularly effective in lowering extremely harmful behaviours including violence and self-harming behaviours. Applied behaviour analysis (ABA) is recognized as an evidence-based practice treatment strategy for people with autism spectrum disorder because it has demonstrated effectiveness in educating individuals with a variety of learning styles and developmental challenges (ASD). This indicates that there is a substantial body of research that has repeatedly demonstrated its efficacy. This also implies that the intervention can be beneficial for individuals, families, and professionals. A sleep routine, social skills, learning how to ride a bus, learning how to multiply numbers, and many other new abilities could be taught as examples of what could be learned.

Learning is deconstructed into smaller chunks to aid in step-by-step learning. Data collection is done to monitor the learner's progress toward the learning objective. Positive reinforcement is a crucial component of ABA because it encourages students to master skills, even those that are extremely challenging for them. Understanding what reinforces each person's conduct is crucial for behaviour modification because everyone has distinct reinforcers. In order to prevent dependence on reinforcement, reinforcement can then be decreased (or faded) over time and when a person develops new skills. (Bailey et al., 2017).

Figure 6. *Breaking puzzle pieces*. *Source*: *Freepik*
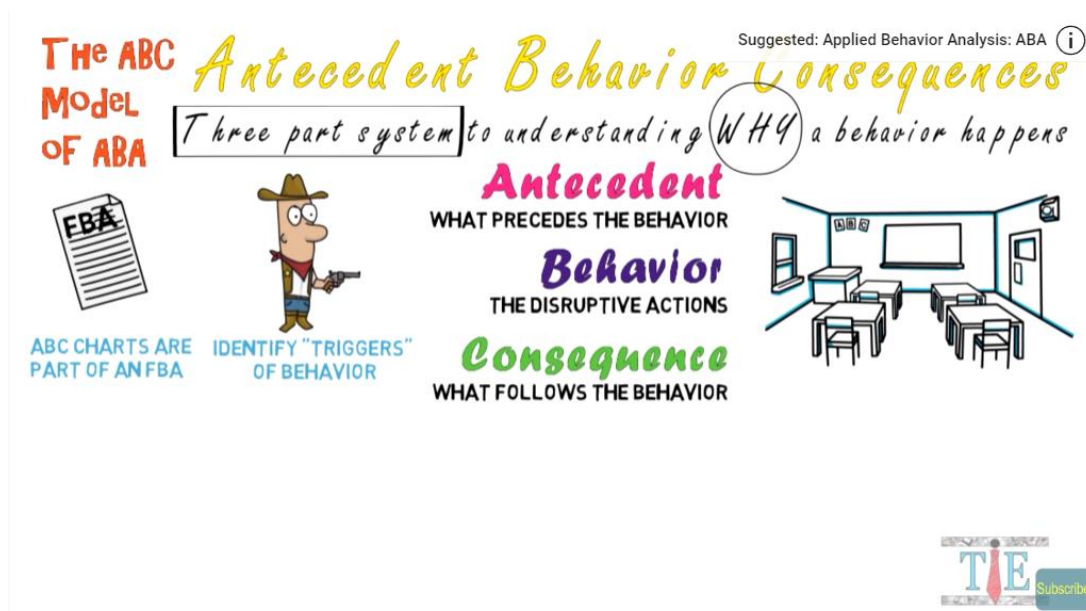
Figure 7. Video "Antecedent Behavior Consequence: ABC Charts & Model".Source: Teachings in Education. Link: https://www.youtube.com/watch?v=0OI187Ip4VQ

▶ Watch this 3-minute video to learn about the **ABCs** of **ABA**!

Essentially, Applied Behavioural Analysis is the overarching methodology that is utilized by educators and by parents themselves, to try and support children with ASD, by altering the behaviours that are ineffective for the children themselves.

However, ABA can be subcategorized into various simpler forms that will allow the teacher or the parent incorporate methodical techniques into the child's daily life and ultimate lead to the desired change.

Figure 8. A few ASD Symptoms. Source: Freepik

Techniques of Applied Behavioural Analysis:

1.1.1.   Positive and Negative Reinforcement

What is Positive Reinforcement?

📖   **Reinforcement**: A consequence or reinforcer, is provided after a desired behavior has been presented, in the process of reinforcement, in order to improve the likelihood or maintain the behavior under similar circumstances.

One of the most popular ABA methodologies is the implementation of **Positive** and **Negative Reinforcement**. The fundamental ideas of ABA were developed through B. F. Skinner's study, who proposed and later proved that behaviour was affected by a process known as **selection** by **consequences**, which is comparable to Darwin's process of natural selection. In essence, Skinner identified that in a specific setting, actions that result in positive results will persist due to the **process of reinforcement**, whereas actions that result in negative outcomes will gradually disappear or decline. By offering **reinforcers** for **successive approximations** of the final target response—a procedure known as shaping—Skinner illustrated how responses could evolve or change over time (Gordan & Krishanan, 2015).

The primary behavioural management strategy utilized by ABA therapists is positive reinforcement, in which a child who complies with a request for behaviour change is rewarded. The objective is for the child to exhibit good behaviour in response to the reinforcement. Any item or activity that effectively strengthens and maintains the desired behaviour might be considered a reinforcer. Natural primary reinforcers include things like sleep and food. Children gradually develop secondary reinforcers that differ from child to child and include everything from praise to stickers and incentives.

Figure 9. *Reinforcement*. *Source*: *Freepik*

There are many distinct reinforcer kinds, including favourite activities, tangible goods like toys, privileges, in between the **least intrusive** reinforcer type, which is **praise**, and the **most intrusive** reinforcer type, which is **food** (Baer, 2019).

What is the significance of Positive Reinforcement?

Overall, positive reinforcement and ABA therapy can have a profoundly positive impact on the lives of children with autism spectrum disorders and their families. With the use of this technique, children with autism kids can learn new skills that can be hard to teach and maintain. For instance, a few of these competences are:

> ⟩ Verbal communication
> ⟩ Non-verbal communication
> ⟩ Social interactions
> ⟩ Academic performance
> ⟩ Functional life skills
> ⟩ Adaptive learning skills.

Children are more likely to repeat a desirable behaviour when it is followed by a reinforcer, like a special item or activity. Positive reinforcement can promote behavioural changes over time. The method can also assist these children in learning alternatives to repetitious activities and stop undesired behaviours like hostility. Specifically, one of the main benefits of positive reinforcement is that it is a consistent and reliable teaching strategy. Furthermore, it might be challenging for children with autism to switch to a new activity, because they frequently become fixated on a single task. If they manage to complete a task correctly, positive reinforcement enables them to know what to anticipate. In other words, it supports the notion that switching activities can be a positive experience, rather than a frustrating one (Leach & Duffy, 2009).

So how can ABA therapists or SEN educators utilize positive reinforcement?

One of the key ideas in applied behaviour analysis, the ABC model of behaviour modification, serves as the foundation for the technique. The following steps make up the model:

⟩ **A**: An event or thing that causes the desired action is called an **antecedent**.

⟩ **B**: **Behaviour** is the effect of the antecedent and is the action taken. It may be both favourable and unfavourable.

⟩ **C**: The result of those activities is the **consequence**.

Figure 10. Teacher and student learning. Source: Freepik

Depending on whether the activity is favourable or harmful, it can be utilized to either encourage or to inhibit it. Subsequently, once the targeted behaviour has been identified, the professional will initially assess the child's current ability levels and pinpoint the key areas that need the most improvement (Kazdin, 2022). The therapist will next create a customized program to teach new competences, skills and behaviours, that are suited to the child's requirements, skills, and interests. The ABA therapy plan is always created to satisfy the needs of each unique child, family, and circumstance. The expert will methodically employ positive reinforcement approaches to assist the child in learning and developing new abilities. This technique is an important tool for raising the possibility that new, beneficial habits will be continued and preserved over the long run (Taylo, 2022).

However, another vital component for the success of this ABA technique, is the educator's ability **recognise and implement the appropriate reinforcers** for each child.

The professional must select the proper reinforcers, once determining what is most important or motivating to the child and to what the child has previously, reacted positively. This could be a particular toy, a preferred game, or a pastime. It is vital to withhold a variety of reinforcers, as every child will accept a different reinforcement strategy from their educator.

Figure 11. Students holding a reward. Source: Freepik

Even so, prior the implementation of various intrusive reinforcers, such as food, ABA professionals frequently initiate the treatment with the least intrusive methods. Additionally, they frequently combine a primary reinforcer with an additional item, to form a secondary reinforcer, such as saying "excellent job". For instance, praising the child with phrases such as "that was really good", whilst simultaneously providing them with a treat, like a raisin or a candy, will assist in the maintenance of the desired behaviour. Essentially, the technique of reinforcement is completed by combining the positive responses to the reinforcer, until the child starts associating the action with the reward (Degli et al., 2020).

If you wish to find the types of reinforcements that could be used when implementing positive reinforcement, have a look at this article!

In addition, follow this extensive article on what Reinforcement is with a few examples for thorough comprehensions!

Nonetheless, although positive reinforcement has been documented as one of the most successful techniques of ABA and specifically for children with autism, it is not the only reinforcement method that can be utilized to alter a child's behaviour. Reinforcement is subcategorized into two pillars:

〉 Positive reinforcement

〉　Negative reinforcement.

The aetiology of why these two words is utilized; "***positive***" and "***negative***", is because when exercising **positive** (**+**) reinforcement, the professional **adds** items or rewards to encourage or inhibit a behaviour. Contrastingly, the notion of **negative** (**-**) **reinforcement** includes the **removal** or **subtraction** of a stimulus, once the desired behaviour has been achieved.

What is Negative Reinforcement?

As explained above, when a certain stimulus—typically an aversive stimulus—is removed after a particular action is displayed, negative reinforcement takes place. Due to the removal or avoidance of the negative consequence, the possibility that the specific conduct will take place again in the future increases. However, negative reinforcement should not be viewed as a kind of punishment (Cooper et al., 2007). In contrast to punishment, which decreases a behaviour, negative reinforcement increases the behaviour.

Here are a few examples that demonstrate negative reinforcement:

〉　To avoid his mother's nagging, Bob does the dishes (behaviour) (aversive stimulus).
〉　After eating two bites of her broccoli, Natalie is able to leave the dinner table (aversive stimuli) (behaviour).
〉　Martha wears her earplugs (behaviour) to remove any noises (aversive stimulus)
〉　Steve is taking a shower (behaviour) to remove a bad smell (aversive stimulus).
〉　Joe acts in a way that deactivates a loud alarm by pressing a button (aversive stimulus).

It is crucial to always remember that the ultimate objective of reinforcement, is to try and improve an individual's behavior, whereas the objective of punishment is to diminish a behavior. Consider adding something positive to a situation to enhance a response as positive reinforcement. Removing an undesirable stimulus to improve a response, on the other hand, is negative reinforcement.

Figure 12. Video " Learning: Negative Reinforcement vs. Punishment". Source: ByPass Publishing.
Link: https://www.youtube.com/watch?v=imkbuKomPXI

Watch this 2-minute video for an additional clarification on **negative reinforcement** and **punishment**!

Furthermore, a common misunderstanding about negative reinforcement is that an individual is engaging in a "negative" or "bad" behaviour and benefits from it, which is of course not true. This argument would be best refuted by another example.

A parent and his child are going to the supermarket to buy some food together. The toddler snatches a large bag of candies and throws them into the cart as they pass by the candy aisle. The parent removes them and instructs the child to replace them. The kid screams and falls to the ground because he wants the candy. In order to manage the child's temper, the parent caves in and lets him have the candy.

It would appear that the tantrum (his behaviour) was adversely reinforced with treats because this boy's behaviour could be characterized as "negative." However, the fact that he received the candy really served as a reinforcer to his "good behaviour"!

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When the child realized he would not get his sweets, he began to act out (have a tantrum), which evidently, lead to the opposite outcome and managed to earn the candies. As mentioned before, negative reinforcement, is when a (aversive) stimulus that is already present, is eliminated as a result of a desired behaviour and its removal was a desired outcome (e.g., Steve's bad smell).

In this instance, the behaviour of the parent was the attitude that was negatively reinforced. The child's outburst and the attention they were receiving by the other individuals in the store, was an undesired situation for the parent (developed an aversive situation for the parent). This unpleasant circumstance occurred prior providing the child with the candy. Subsequently, once the parent offered the candy to the child, the child's yelling was cessated and the aversive situation was eliminated.
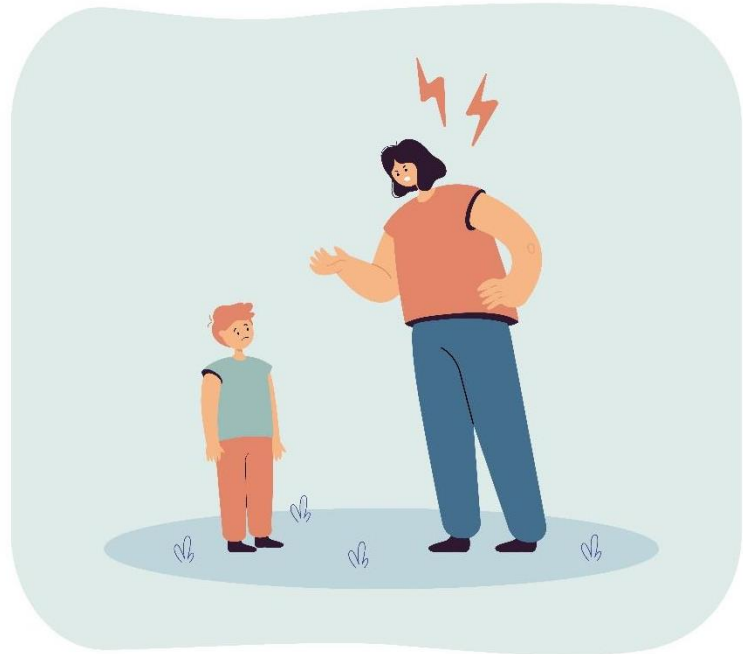
Figure 13. *Woman escaping*. *Source*: *Freepik*

As a result, the parent's behaviour was negatively reinforced (Wiering & Otterlo, 2012).

Therefore, aversion-inducing stimuli, such as bad odours, loud outbursts, or snoring, typically make people want to flee, or *escape*. The word "escape" is typically linked with an individual leaving, in order to eliminate the contact with the aversive stimulus, such as escaping from a prison. However, this phrase can also be utilized to refer to the *elimination of the adverse stimuli* itself, whilst the *individual remains in the situation*.

In other words, when taking into account the example of the "bad smell", the individual is not "*escaping*", he is to deal with the aversive stimulus (bad smell) until they take a shower, however taking a shower is still an effort to avoid the unpleasant stimulus.

Escape and Avoidance:

It's crucial to understand that there is a difference between avoidance behaviour and escape behaviour (Miltenberger, 2008). While avoidance stops the adverse stimulus from happening in the first place, escape involves removing an existing aversive stimulus by behaviour. Keep in mind, too, that negative reinforcement still keeps both avoidance and escapist behaviour in place (Iwata & Smith, 2007).

For instance, the individual decides to take a shower as an "*escape*" from the unpleasant odour. When a behaviour stops the aversive stimulus from ever "happening*" *avoidance* occurs. Hence, if the person is aware that they begin to smell as a result of not taking a shower, their showering behaviour is likely to increase in order to stop the smell from happening, and this would be considered "*avoidance*". The difference is whether the behaviour eliminates an adverse stimulus that is already present (**escape**) or delays the emergence of an aversive stimulus (**avoidance**) (Dymond & Roche, 2009).

Figure 14. Woman escaping. Source: Freepik

Evidently, reinforcement is compromised from a variety of sections and there are several versions of this technique that can promote, not only beneficiary actions, but persistent alterations in behaviour, without the implementation of forceful or aggressive means (Fein & Dunn, 2007). Similar to reinforcement, another innocent, but equally effective methodology is ***prompting and fading.***

1.1.2.   Prompting and Fading

The term "prompting" in applied behavior analysis (ABA) or any other type of behavioral therapy refers to giving support or cues to encourage the application of a certain skill. The ultimate goal is for the individual to eventually perform the skill independently in the proper conditions without the need to be prompted, but prompting encourages the individual to perform a task until they learn how and when to do it.

In other words, prompting may encourage the child to perform a task, until they learn how and when to complete it, but ultimately, the main goal of this technique, is for them to learn **how to perform the skill independently**, in the **appropriate circumstances**, **without needing** to be **prompted**. However, what is a prompt?

A prompt is defined as any stimulus that the ABA practitioner or SEN educator recognizes as useful and that the child responds to. Prompts are usually delivered as antecedents, or prior the initiation of the behavior. If the child is already performing the skill or activity, a prompt is not necessary; rather, it may be appropriate to use positive reinforcement to support the behavior, in order for the child to maintain this behaviour (Fentress & Lerman, 2012).

Nonetheless, this method is used as a means of offering instructions to children with special educational needs and learning difficulties, as it can facilitate their understanding of what they have to do and thus increase the likelihood that they will later produce the correct response or desired behaviour on their own (Team, 2021).

Figure 15. *Therapist and child*. *Source*: *Freepik*

A few types of prompts:

> **Fully Physical Prompt:** commonly known as the hand-over-hand prompt, it includes physically guiding the hand of the child to complete the task and produce the correct response.

> **Partially Physical Prompt**: providing some physical assistance to the child, to finish only a part of the task and not all of it.

> **Modelling Prompt**: illustrating the entire behaviour or activity to the child and then ask them to replicate it.

> **Gestural Prompt**: utilizing a variety of hand movements (e.g., pointing, reaching, nodding) to offer guidance or information to the child about the correct response.

> **Visual Prompt**: presenting a visual cue or assistance to the child (e.g., pictures, drawings, photographs) to aid them comprehend what they must complete.

> **Verbal Prompt**: sharing a verbal cue or assistance to the child (e.g., first syllable of the answer) to help them understand what they have to do.

> **Positional Prompt**: providing the proper response's information in close proximity to the student, so that it can be more easily accessible (Maedan et al., 2013).

These prompts are provided according to their level of intrusiveness, initiating the procedure with the least intrusive and then proceeding to the most intrusive prompt (Chicago ABA Therapy, 2017). The quantity and kind of cues utilized are influenced by the surroundings, the resources at hand, as well as the unique demands and behaviours of each child. This means that the method and kind of prompting must be tailored to the skill or behaviour being taught as well as the child, as some types of prompting may be more or less effective depending on the student. There are two methods of prompting: "Most-to-Least" prompting and "Least-to-Most" prompting (Griffin, 2020).

In the beginning, the "Least-to-Most" prompting strategy entails giving the child the least invasive forms of prompts, in order to give them the chance to independently think of how they might complete the task. The level of intrusive prompting will then steadily increase, until the intended response is achieved, in case the child provides an inaccurate response or does not reply at all. For instance, if an ABA practitioner verbally prompts a kid, "Please give me the pen" and the child doesn't react, the practitioner can use a more intrusive method of prompting, such as positioning the pen closer to the child, to increase the likelihood that the child will respond.
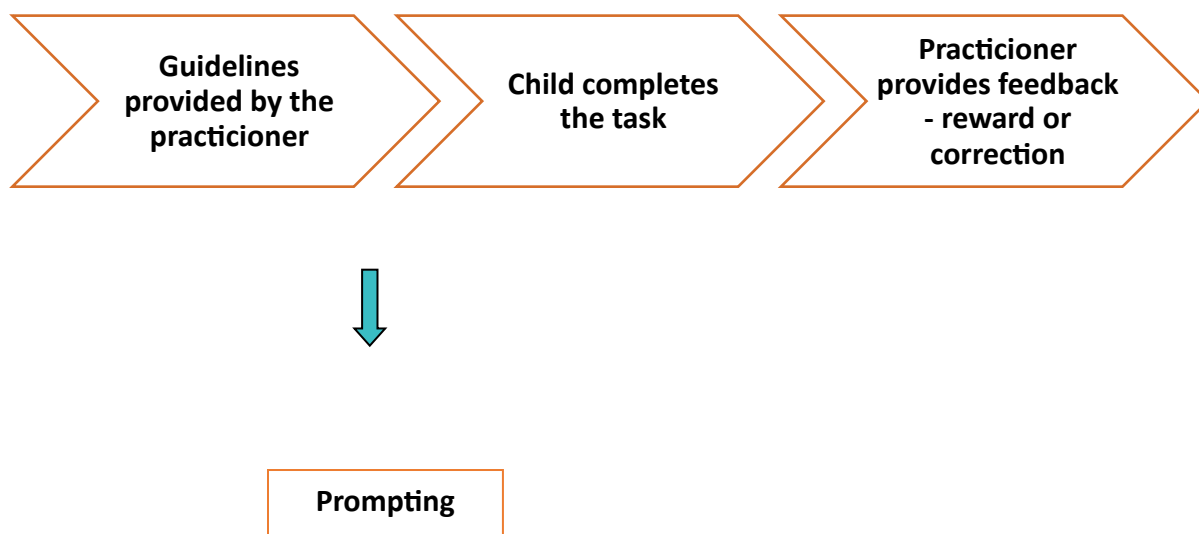
Furthermore, when enforcing ABA, **prompting** and **fading** are the two techniques that are frequently used. Initially, prompting includes the provision of *prompting cues* to encourage a specific behaviour or response, whilst contrastingly, fading is the process of gradually eliminating the prompt cues, as the student becomes familiar to exhibiting the desired behaviour or the appropriate response (Chandrasekaran, 2020).

The objective of fading, is to ensure that the child does not become dependent on the provision of cues, in order to perform a behaviour or **exhibit a response** and verify that the child will exhibit that behaviour, once these **cues has been eliminated**. The "Most-to-Least" method of prompting is a type of fading because it gradually reduces the level of interruption caused by the prompts and methodically reduces the amount of help provided to the kid to achieve the desired job (Leaf et al., 2016). When implementing the "Most-to-Least" method, the following steps can be used, when teaching a child how to put on their jacket:

〉 The practitioner physically prompts the child to put on the jacket;
〉 The practitioner models (shows themselves) how to put on the jacket for the child;
〉 The practitioner verbally prompts the child to put on the jacket;
〉 The child puts on the jacket by themselves without any assistance or prompting.

When both prompting and fading are correctly employed and coupled, the child will learn how to exhibit and perform specific behaviors and complete certain tasks on their own. The learning process that occurs during ABA is depicted in the chart below, along with the stages at which prompting should occur:

| Guidelines provided by the practicioner | Child completes the task | Practicioner provides feedback - reward or correction |

Prompting

1.1.3. Task analysis

Definition

Task analysis is used to break complex tasks into a sequence of smaller steps or actions. For some individuals on the autism spectrum, even simple tasks can present complex challenges. Understanding all the steps involved for a particular task can assist in identifying any steps that may need additional instruction and will help teach the task in a logical progression. A task analysis is developed using one of four methods. First, competent individuals with proven experience can be observed and steps documented. A second method is to consult experts or professional organizations with this expertise in validating the steps of a required task. The third method involves those who are teaching the skill to perform the task themselves and document steps. This may lead to a greater understanding of all steps involved. The final approach is simply trial and error in which an initial task analysis is generated and then refined through field tests (Dr. Cathy Pratt, 2020).

Figure 16. Task analysis. Source: Freepik

When writing a **task analysis**, we try to break the skill down into very specific steps, to create manageable steps. A task analysis often goes hand in hand with chaining.

Chaining = a set of teaching procedures used to teach a task analysis.

Task analysis is implemented in one of three ways, depending on the needs of the learner:

- Forward chaining—moving throughout the sequence with the first step first
- Backward chaining—moving throughout the sequence with the last step first
- Total task teaching—moving throughout the sequence, with only those problematic steps broken down into simpler steps
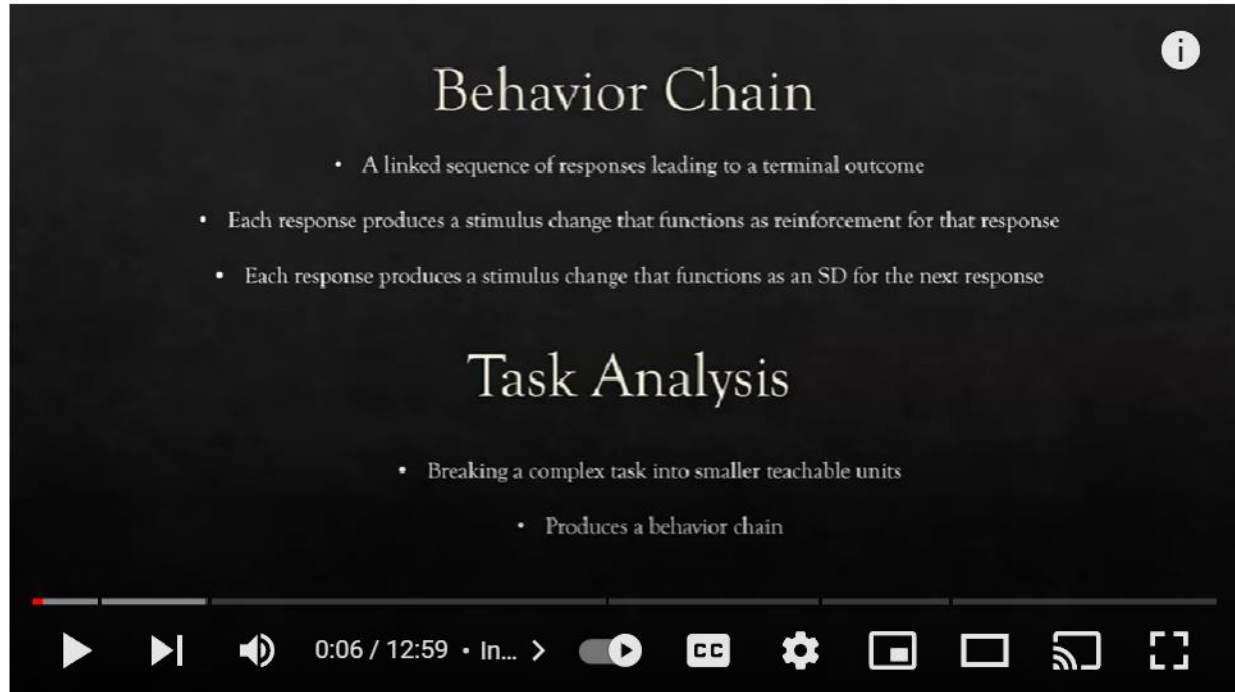
Figure 17. Video "Task chaining and Task analysis (forward, backward, total". Source: Behavior Technician & Behavior analyst. Link: https://www.youtube.com/watch?v=gKd3OE58DBg

▶ Watch this 13-minute video to learn more about **task analysis.**

Forward chaining is an alternative method for teaching complex behaviors that can be broken down into a series of steps. In forward chaining, the first step of a task analysis is taught first followed by each succeeding step, requiring the cumulative performance of all the previous steps in the correct order until the learner performs the whole chain of tasks independently (Cooper, 2007).

In this way, individuals learn complex behaviors in their correct sequence (McDonnell, 1988).

ABA practitioners using task analysis must first (1) identify the skill to be learned and (2) ensure that the learner masters all the discrete skills required to successfully complete the task. For

example, if the child does not yet have the dexterity to hold a toothbrush properly, task analysis for teaching teeth brushing cannot yet begin.

Learning the benefits of **Task Analysis** will provide an insight to educators, as to how this strategy will help them teach learners with ASD a skill that is too challenging to teach all at once.

Examples

A task analysis is used to break complex tasks into a sequence of smaller steps or actions. For some individuals on the autism spectrum, even simple tasks can present complex challenges.

Skills taught using task analysis (TA) include daily living skills such as brushing teeth, bathing, dressing, making a meal, and performing a variety of household chores. Task analysis can also be used in teaching students to perform tasks at school such as eating in the cafeteria, morning routines, completing and turning in assignments, and other tasks. Task analysis is also useful in desensitization programs such as tolerating haircuts, having teeth cleaned, and tolerating buzzers or loud environments. (Dr. Cathy Pratt, 2020).

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Task Analysis for Brushing Teeth (Kregal, 2008), Functional Curriculum, Second Edition

1. Get your toothbrush case.

2. Unzip the case.

3. Take out toothpaste.

4. Unscrew toothpaste cap.

5. Lay cap on countertop.

6. Turn on cold water.

7. Take out your toothbrush.

8. Wet bristles of toothbrush.

9. Put toothpaste on toothbrush.

10. Lay toothpaste tube on countertop.

11. Bring toothbrush with paste up to mouth.

12. Begin brushing teeth.

- Left back: top – outside then inside

- Left back: bottom – outside then inside

- Then front: top – outside then inside

- Then front: bottom – outside then inside

- Then right back: top – outside then inside

- Then right back: bottom – outside then inside

13. Spit toothpaste into sink

14. Rinse toothbrush under water stream.

15. Shake water out of brush.

16. Put toothbrush in toothbrush case.

17. Get drinking cup from case.

18. Fill cup with cold water.

19. Rinse mouth with water.

20. Spit water into sink.

21. Rinse cup with water.

22. Wipe cup dry.

23. Put toothpaste cap on tube.

25. Put toothpaste into toothbrush case.

24. Put cup back into toothbrush case.

Sequencing

Place the items in the correct order.

Figure 19. Video "Brushing teeth signifier song/autism/board maker. Source: U and I in music

Figure 18. Sequencing for *Brushing teeth*. *Source*: Freepik
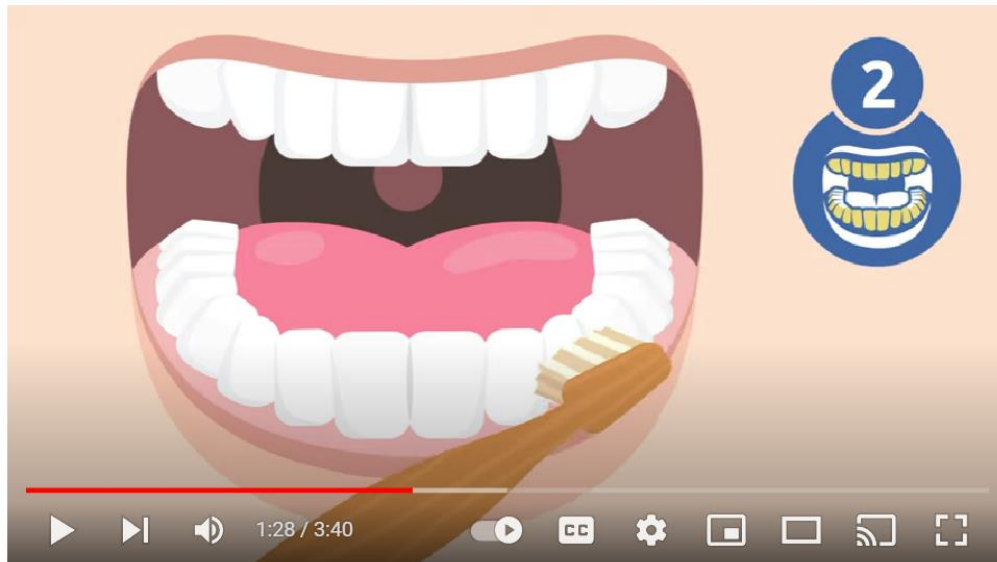
Figure 19. Video ''How to brush your teeth: Tooth Brushing for Kinds Source: Smile and Learn

Link: https://www.youtube.com/watch?v=vcNAhUqH9U0

Watch this video to see a visual example example of using task analysis for **tooth brushing**

29

Putting a Coat On

1. Pick up the coat by the collar (the inside of the coat should be facing you)

2. Place your right arm in the right sleeve hole

3. Push your arm through until you can see your hand at the other end

4. Reach behind with your left hand

5. Place your arm in the left sleeve hole

6. Move your arm through until you see your hand at the other end

7. Pull the coat together in the front

8. Zip the coat

Washing Hands

1. Turn on right faucet

2. Turn on left faucet

3. Place hands under water

4. Dispense soap

5. Rub palms to count of 5

6. Rub back of left hand to count of 5

7. Rub back of right hand to count of 5

8. Turn off water

9. Take paper towel

10. Dry hands to count of 5

11. Throw paper towel away

Figure 20. Image "Getting dressed task analysis".
Source: Teachers pay Teachers
Link: https://www.youtube.com/watch?v=gKd3OE58DBg
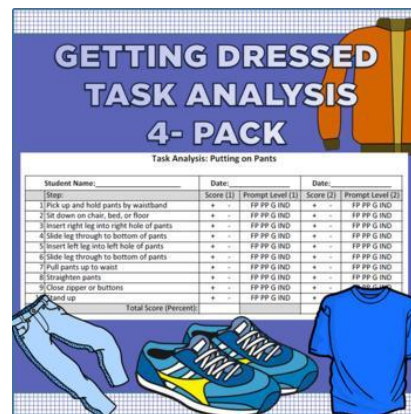
Figure 21. "Washing Hands-Going to the toilet".
Source: Center for treatment and development
Link:
https://www.youtube.com/watch?v=gKd3OE58DB
~

Additional resources

For additional information, Teachers and Professionals can address the following websites, linked with the largest and most reputable organizations worldwide. This article may also be very useful and informative in terms of task analysis training (Diane M. Browder, 2007).

Association for Behavior Analysis International (ABAI)

www.abainternational.org

Since 1974, ABAI has been the largest membership organization for those involved in any aspects of behaviour analysis. They provide many services to its members including events, scholarly journals, special interest groups and access to affiliated chapters.

Association of Professional Behavior Analysts (APBA)

www.apbahome.net

APBA is a 501 non-profit membership organization whose goal is to advocate and advance the science and teachings of applied behaviour analysis. Members have access to many resources such as news articles, professional credentialing, steps to avoiding antitrust liabilities, health insurance navigation and other special articles.

Behavior Analyst Certification Board (BACB)

www.bacb.com

BACB is a non-profit corporation established in 1998 to provide professional credentialing needs for behaviour analysts, their patients and the government. Their mission is to protect consumers of behaviour analysis services. They provide information about all the possible behaviour analysis certifications.

Tips

By learning how to use **Task Analysis Teachers** will have a better understanding of all the steps involved for a particular task, while identifying any other steps that may need extra instruction and will help teach the task in a logical progression.

Figure 22. "Think out of the box".
Source: FreepicLink:
https://www.youtube.com/watch?v=gKd3OE58DBg

TA Progress Monitoring

Student name: _____

Target Skill: Setting the table

Type of TA: Total Task Presentation

	Date 3/15	Date 3/18	Date 3/21	Date	Date
Put plates on table	VP	GP	I		
Put cups on table	VP	I	I		
Put napkins on table	M	M	VP		
Put forks on table	GP	GP	I		
Put spoons on table	GP	VP	O		

I = Independent, VP = Verbal Prompt, GP = Gestural Prompt, M = Model Prompt, P = Physical Prompt, X = Incomplete, 0 = no opportunity

	Date 3/15	Date 3/18	Date 3/21	Date
Observer Initials	CK	CK	CK	
Additional Comments	Used visual support	Great job with cups!	No spoons needed today	

Figure 23. "Task Analysis Progress Monitoring".
Source: n2u

1.1.4. Generalization

Definition

The term generalization, defined most broadly, is used to describe when skills learned in a training environment transfer to the natural environment after training has ended. Generalization, in its narrower definition, is a behavioral term that is used to describe the spread of effect of a training procedure to untrained stimuli and responses, as well as the durability of treatment effects over time. Generalization includes three specific forms: **Stimulus generalization**, **response generalization** and **maintenance**. Stimulus generalization involves the occurrence of a behavior in response to another similar stimulus.

Figure 24. "Generalization".
Source: abaconnect

For example, a child who learns to say "ball" (behavior) in response to a picture of a ball (trained stimulus) shows stimulus generalization if he says "ball" in response to an actual ball (new stimulus). Response generalization involves the spread of an effect of a trained response to other similar responses (Wainer, 2013).

The past 20 years has seen a marked increase in the quantity of research literature investigating the effectiveness of interventions for people with autism spectrum disorders (ASD). Much of this research has been conducted in applied behavior analysis (ABA), however, many reported interventions do not include information or data on generalization and maintenance of behavior change. The importance of this is self-evident, as an intervention that increases or decreases a behavior is of little use if the behavior change is not observed in a variety of settings and fails to continue after the intervention period has ended (Angela M. Arnold-Saritepe, 2009).
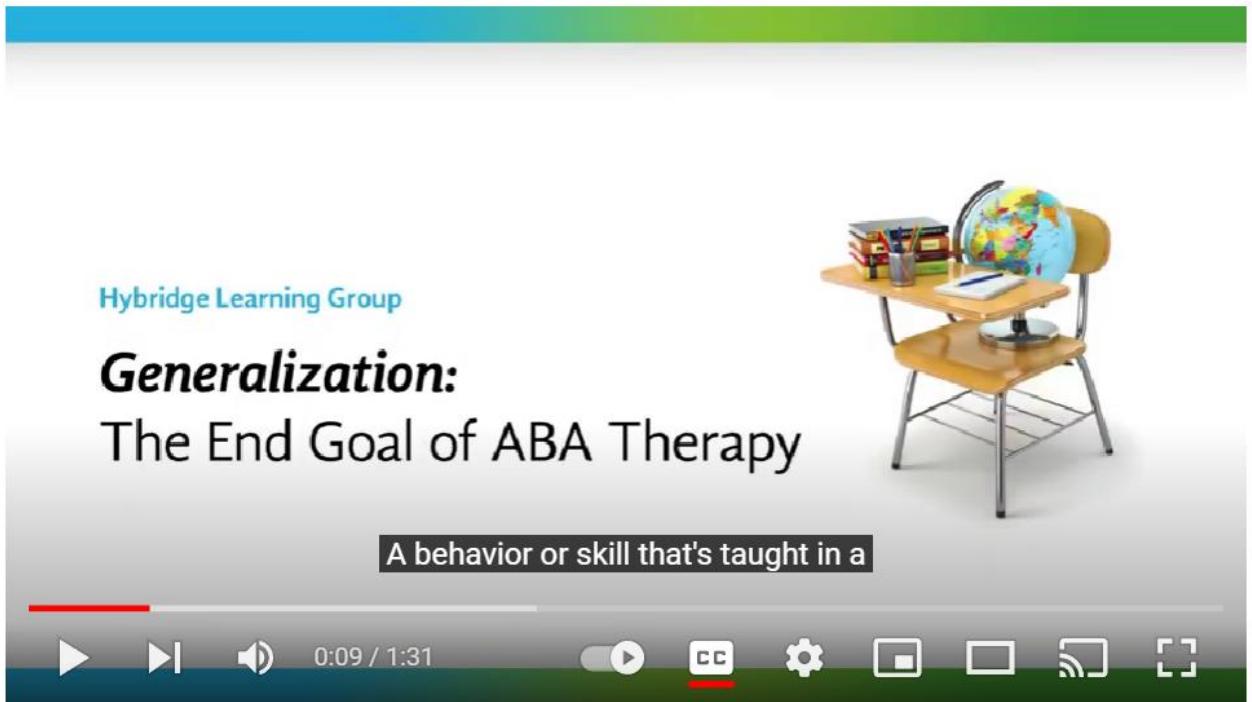
Figure 25. Video "Generalization. The end goal of ABA.
Source: Hybridge learning group
Link: https://www.youtube.com/watch?v=gKd3OE58DBg

Watch this video to learn more about **Generalization**.

Types of Generalization (Cooper, Heron, & Heward, 2007):

- **Response Maintenance**

  Child continues to exhibit target response in absence of intervention

- **Setting/Situation (Stimulus) Generalization**

  Child exhibits target response under untrained stimulus conditions

- **Response Generalization**

  Child exhibits untrained responses that are functionally equivalent to target
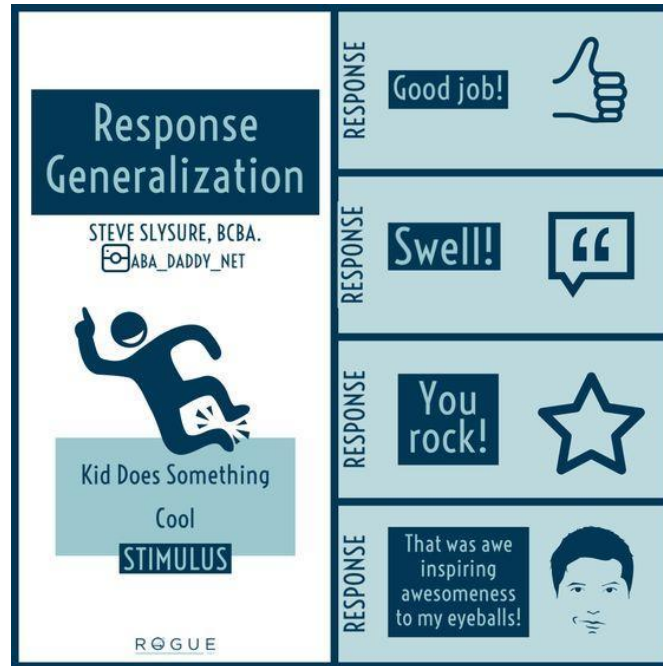
  response

Figure 26. "Response generalization. Source: rogueaba

Procedures to Promote Generalization and Maintenance:

- **Sequential Modification**
    - Teach behavior and assess for generalization
    - Teach across successive conditions if generalization does not take place
    - Assess for generalization in each successive condition

- **Introduce to natural maintaining contingencies**
    - Teach behaviors that will contact reinforcement outside of the training setting
    - Program contingencies to be like typical contingencies
    - Restructure outside environment to allow for reinforcement

- **Train sufficient exemplars**
    - Teach multiple targets for same skill and assess for generalization to new targets until generalization occurs (e.g., continue teaching imitation responses until child imitates untaught responses)
    - Teach child to respond correctly in presence of multiple stimuli and assess whether skill generalizes to new stimuli
    - Teach targets that represent a wide range of possible response requirements and/or stimulus conditions that may occur under typical contingencies (Cooper et al., 2007)
    - Use various stimuli when teaching a particular target and teach various targets

- **Use in discriminable contingencies**
  - Set up reinforcement contingencies so child is unable to discriminate when reinforcement is available for a particular skill
  - Begin providing delayed reinforcement once a skill has been mastered (Cooper et al., 2007)
  - Use intermittent schedules of reinforcement to decrease discriminability of contingencies and enhance resistance to extinction
  - Provide noncontingent reinforcement intermittently in generalization setting to maintain responding

- **Program common stimuli**
  - Include stimuli during training that will be present under typical contingencies
  - Choose stimuli that are salient and relevant to target behavior
  - Use peers and/or common tasks as common stimuli for some target behaviors

- **Mediate generalization**
  - Teach child to engage in behaviors that can be used to promote responding across multiple conditions
  - Use language as a mediator for generalization

- **Teach child rules that may promote generalization**
  - For example, "I wash my hands before I eat."
  - Use picture schedules as a mediator for generalization (Wacker, Berg, Berrie, & Swatta, 1985)

- **Train to generalize**
  - Consider generalization as operant response rather than as product of behavior

- **Reinforce response variability**
  - Novel correct responses → Sr+
  - Correct responding under typical contingencies → Sr+ (Miltenberger, 2004)
  - Instruct child to generalize
  - Tell child to engage in target behavior in generalization setting, or tell child to engage in varied responding (Cooper, 2007).

TECHNIQUES FOR TEACHING GENERALIZATION

When a new skill is introduced to a student, plans for generalizing that skill can begin to be developed. There are several methods to teach the generalization of skills. The method utilized is dependent on the individual needs of each student., as well as the resources available.

Some key methods include:

1. If a teaching program was successful in one setting, implement the same teaching program in a different setting.

For example, if a student demonstrates being able to count to ten in one environment, the strategies and supports provided in this setting would be duplicated in other settings. This may also include environmental arrangement, materials, and staff.

2. Teach students functional skills, such as asking to get a drink, where the student getting a drink would be a natural reinforcer. If all staff involved with a student learning this skill, respond consistently to this request, the natural reinforcer (getting a drink) will be strengthened, and the student will be more likely to continue demonstrating this skill across people and environments.

3. Once a skill has been demonstrated in response to a specific instruction, begin to change that instruction slightly.

For example, if a student learns to identify an item when told, "show me ___", begin changing the instruction. This may include statements such as, "point to the ___", "where is the ___?", etc. In addition, varying materials and staff can be introduced. (*Note: Change only one variable at a time.)

4. Once a skill has been demonstrated consistently, start to thin out how often one begins to reduce the frequency with which the student receives social or tangible reinforcement. By thinning reinforcement to a variable, or unpredictable schedule, the student will be more likely to continue performing the skill, promoting skill maintenance.

5. Have students monitor their own behaviour and skills under varying conditions (environment, people, and materials) by documenting their performance.

6. Provide social praise and reinforcement for generalized skills. When reinforcing a skill that is being generalized, staff can reinforce both prompted and independent responses (Board).

1.2. Treatment and Education of Autistic and Communication Handicapped Children (TEACCH)

TEACCH programme (acronym for Treatment and Education of Autistic and Communication Handicapped Children) was conceived in the 1960s by Eric Schopler and his collaborators at the University of North Carolina.

It is a model for organizing the services offered to people with autism and their families. Its main objectives are:

- modify the environment according to the needs of the person with autism
- develop the best possible degree of adaptation and autonomy
- improve the quality of life of the child with autism and his or her family.

It is possible to achieve these goals through the **'individualized educational project'** that is drawn up differently for each person. It changes for each child because it builds on the child's emerging strengths and abilities to improve skills and abilities through specific, calibrated learning strategies. The activities and interventions promoted represent a comprehensive care programme for the individual and his or her family.

In fact, working with children with autism means:

1. Teach them strategies and skills that are as adaptive as possible
2. Modifying the environment to facilitate their adaptability

The TEACCH approach follows a specific intervention strategy called **'structured education'**. With this strategy, the structuring of the context (time and space) makes it clear to the child what is expected of him and provides him with predictability about the environment. In addition, this significantly reduces the anxiety experienced by the person with autism.

Structured education follows a purely visual strategy and consists of the following points:

1. Space structuring
2. Time structuring
3. Providing predictability and repeatability of the proposed activities
4. Providing motivation

1.2.1. Space structuring

Organization of the physical environment is necessary. It means that spaces must be organized, furniture and materials placed in a way that helps the child better understand the context in which he or she lives and works. In this way, concentration and attention can be increased.

The structuring of the space must follow the following parameters:

- It must be visually identifiable: each location must indicate precise activities
- It must be circumscribed: the activity space must be delimited by precise boundaries
- It must be essential: there must be no distracting elements
- It must be convenient and comfortable

The aim is to make the child understand what is expected of them when they are in a certain place and thus help them to operate more effectively.

Example 1: If you want to structure the space in the child's room, you can divide it as presented in the illustration below:

A. To the left is the shelf with materials for the work to be done (A)
B. The child takes the material from the left and does the work on his or her desk (B)
C. The child places the materials with the finished work in the basket on the right (C)
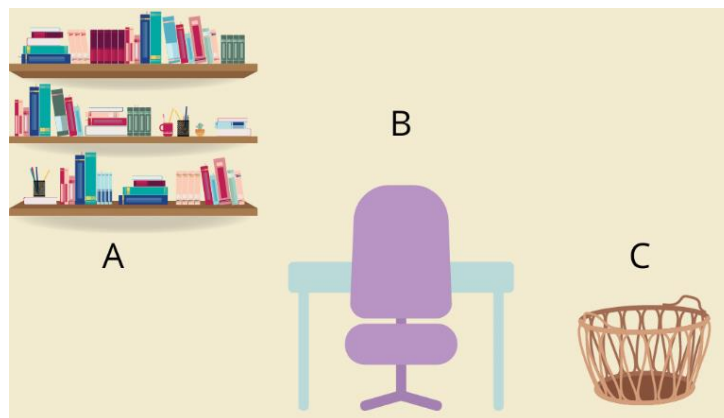
Figure 27. *Structuring space. Source: Canva*

Example 2:

Each task is contained in a box on the left shelf and is marked with a task symbol (colour/number/shape, etc., depending on the child's level of understanding). On his/her table, the child has the same symbols as the boxes, because they indicate the amount of work to be done.

In this case, the four symbols represent the four boxes, i.e., four exercises to be done in sequence. When the task is completed, the box must be placed on the right shelf. Following this method, it is clear how much work has been done at that moment and how much remains to be done.

1.2.2. Time structuring

With the help of visual aids, they indicate which activities and in which order they are to be carried out. This helps the child to anticipate and predict the various tasks.

The use of visual schematics is of great importance because children with autism have a poor ability to memorize verbally transmitted information, but good visual memory and discrimination skills.

Visual aids of the day can help overcome this difficulty and allow you to:
● reduce problems related to memory and attention disorders
● limit difficulties in orientation and time organization
● facilitating autonomy
● increase self-motivation

In addition, visual aids will indicate:
• The length of an activity.
• Indicators to show when an activity begins and when it ends.
• The rhythms of activity, such as alternating work activity with moments of relaxation.
• Rules to be agreed upon for alternating work activities with breaks.

A common visual aid is the visual agenda of the day, the presentation of which ranges from the easiest to the most difficult: coloured or black and white photos, symbols and drawings can be used.
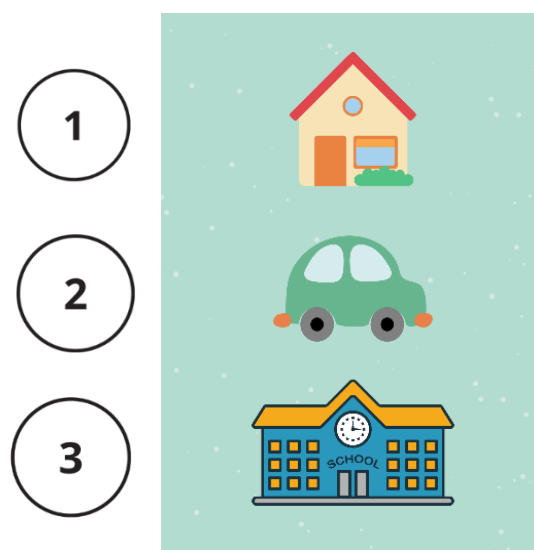
Figure 28. Representation of visual agenda Source: Canva

1.2.3.   Providing predictability and repeatability of the proposed activities

Once the context and duration of an activity have been clarified, one proceeds with the type of activity to be proposed. In general, first a skill (a game) is learnt and then spent socially (al., 2022). In fact, when carrying out an activity, one must be able to distinguish the following aspects:

● Child's interest in gaming
● The ability to play
● Social skills

The activity can be repeated several times to support the child's learning with predominantly visual materials.

Example: you can use interlocking games, association tasks for identity:
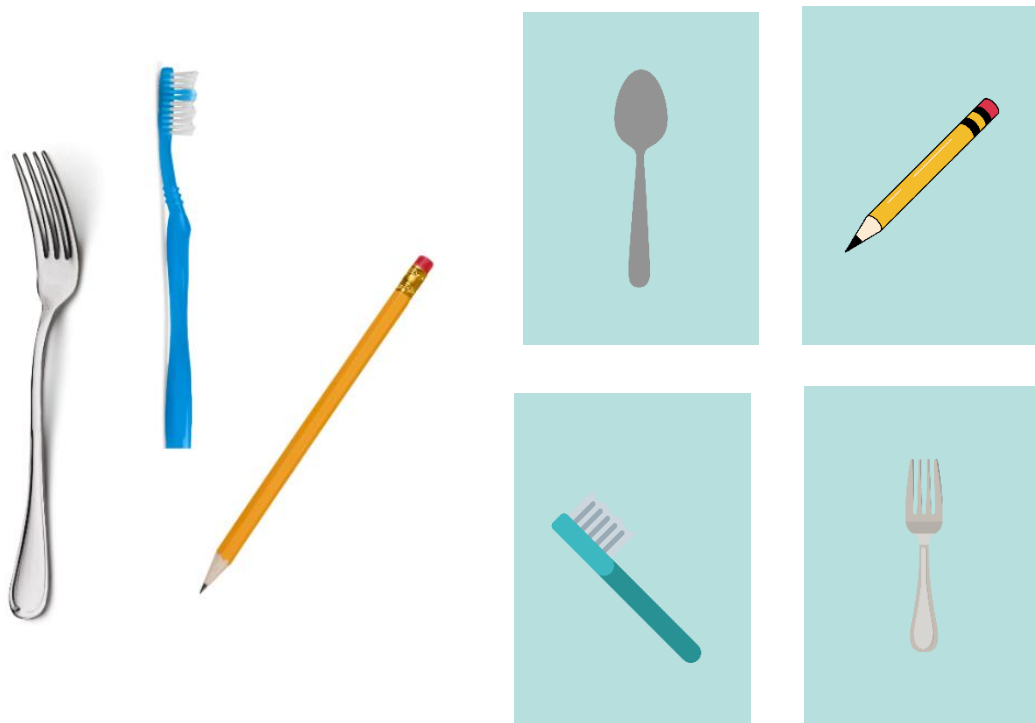
Figure 29. Association of tasks with identities. Source: Canva

The repetition of activities and visual facilitation have as their main aim the implementation of the child's personal autonomy.

1.2.4.   Providing motivation

Finally, for the children with low intrinsic motivation, it might be crucial to use behavioural strategies in a less didactic way. The focus must be on the initiative of the child, who is considered an active participant in communication from the very beginning. We must therefore focus on the child's interests and build an interactive setting based on the child's motivation and interests. As the 'Denver Model' suggests (Early Start Denver Model, 2022), what one understands, what one can do, what resonates with one's cognitive style, what does not disturb, what is also motivating for the practitioner, is motivating.

Here are some materials that can be used to capture the child's attention and interest:
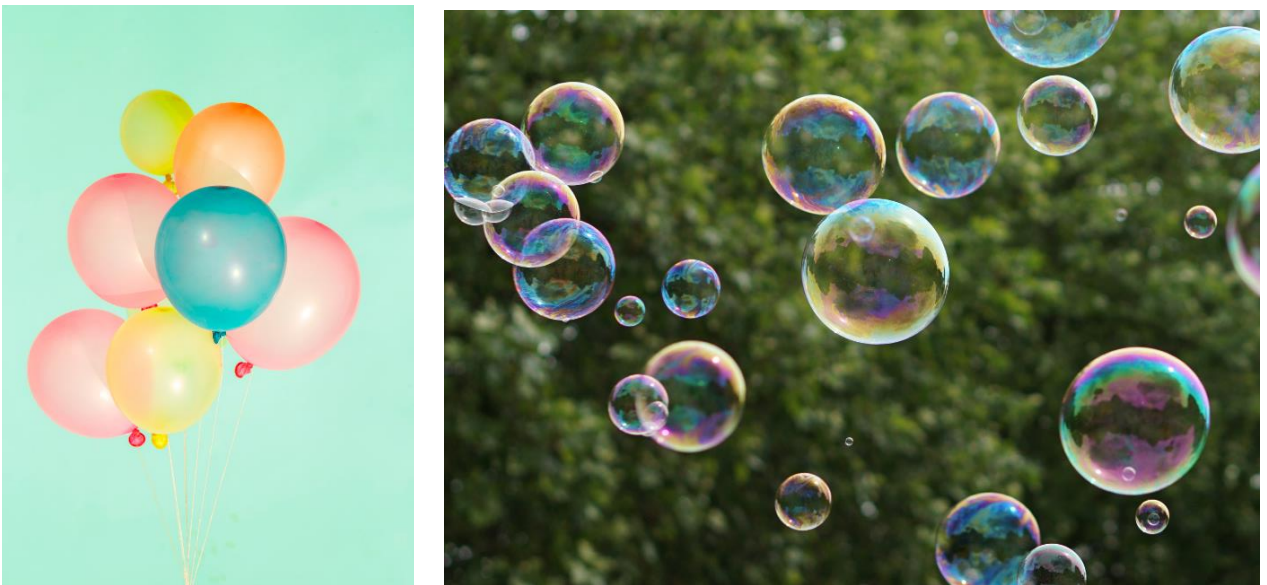
Figure 30. Examples for capturing a child's attention Source: Canva

Here you can find some tips on TEACCH approach:
https://www.youtube.com/watch?v=vkymZzmg4jw

1.3. Picture Exchange Communication System (PECS)

The Picture Exchange Communication System (PECS), devised by Bondy and Frost in 1994, is a learning pathway for the use of augmentative and alternative communication. It was designed not only for individuals with autistic disorder but also for people with verbal communication difficulties. (Immagini per parlare. Percorsi di comunicazione aumentativa alternativa per persone con disturbi autistici, 2007)

The aim of teaching the PECS method is to provide a social and functional communication tool that can be used in all environments and situations experienced by the child.

The major advantage of this system, compared to others, is that it was designed and developed for autism, thus also taking into account the inability of these children and young people to relate to others with a communicative purpose.

Therefore, it is therefore essential to 'teach how to communicate' and not merely provide a 'communication tool', as well as provide an environment that stimulates exchange.

The programme involves teaching a **six-phase course**, the aim of which is to progressively lead the person with autism to the development of functional communication as a social exchange. Training is conducted on specific communicative functions, such as requesting, commenting, telling.
Six phase-course is analysed below.

1.3.1.   Assisted physical exchange of the image with the object

In the first phase, a welcome object is presented to the child (visual prompt). What is expected from the child is to take the picture by stretching out his hand towards the interlocutor who is in front of him (the communication partner) in order to hold it. At the beginning, the child's movements are is helped and guided by another adult who stands behind him and acts as a physical guide.

In this phase, the child learns the nature of communication: how to address another person to obtain what is desired. The child with autism must be guided by initially stimulating the formulation of requests to obtain welcome reinforcements.

PHYSICAL

PROMPT

VISUAL

PROMPT

Figure 31. Associating a visual prompt with a physical prompt Source: Canva

Moreover, at this stage the image is visible and easily accessible, while the communicative partner is close to the learner and ready to complete the exchange. The physical prompt must maintain its position behind the learner (or to the side) and avoid interacting with the learner through communicative exchanges, as these could take on the value of reinforcement.

Thus far, the child has been supported with visual aids (reinforcement and gestures) and physical cues.

This phase includes two steps:

- Decreased physical help: visual help is maintained and physical guidance is gradually reduced. The aim is for the child to act independently in order to obtain reinforcement.
- Decreased visual aid: the interlocutor no longer shows the "give me" gesture and waits for the arrival of the symbol card to take it.

1.3.2. Increased spontaneity of communication

In the second phase, the adult proceeds with a progressive physical distancing. In addition, he tends not to pay attention to the child in order to force him to move and to insist on interaction.

Two other tricks are implemented: conditions are created to stimulate the child to look for the image in order to realize the communicative exchange and the image does not have to be immediately available.

The following is arranged:

- the 'Communication Notebook', a ring-bound notebook with Velcro strips on the cover and inner sheets to attach pictures
- A detachable 'sentence strip', where the pupil can attach two or more pictures to make up a sentence
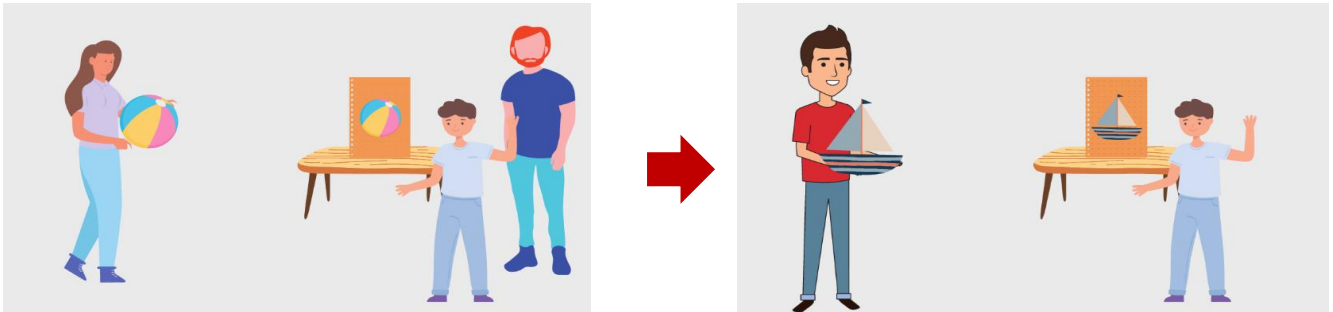
Figure 32. Visual representations of encouraging a child to look for an image Source: Canva

The environment in which the child moves does not always remain the same. The distance between the child and the interlocutor is greater than in the first phase, but at first there is always a reference adult behind the child. Subsequently, the child is guided without the support of this figure and finally the distance between the child and the communication notebook increases.

The objective of this phase is for the child to be able to approach the communication notebook, detach the picture, reach out to the adult, make himself known and leave the picture in his hand to make the exchange.

1.3.3. Symbol Discrimination

The child observes two images in the communication notebook (pleasant object vs. unpleasant object) and must learn to choose the one related to the desired object. In this way he can gradually expand his vocabulary of images.

The aim of this phase is the acquisition of the ability to discriminate between images and to choose that of the desired object from the others, in order to carry out the exchange and implement communicative possibilities.

Figure 33. Symbol discrimination Source: Canva

1.3.4. Sentence Composition

In this phase, the child is asked to take the 'I want' symbol from the communication notebook and attach it to the sentence holder. Following this step, the child is choosing the picture corresponding to his needs and desire and place it next to it. Finally, he or she must peel off the strip and hand it to the adult to get what he or she wants.

The final goal of this phase is to make the child capable of constructing a sentence with more than one word to ask for visible or non-visible objects. The child will have acquired the ability to compose sentences and deliver them to the interlocutor for communication purposes.
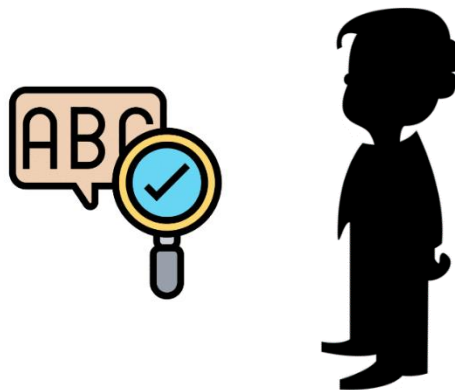
Figure 34. Sentence Composition Source: Canva

1.3.5. Answer the question "What do you want?"

To encourage learning, a question is asked and the 'I want' symbol is indicated in the communication notebook, previously used in step 4. If the child succeeds in composing the sentence, it must be immediately reinforced by the required object and social praise.

If the child is unsuccessful (or fails), he or she must be physically helped to detach the symbols and compose the sentence. The help is gradually reduced until it is eliminated.

1.3.6. Making comments

In the last phase, under the absence of verbal prompting from the interlocutor, the child is guided towards spontaneous requests and the ability to make comments. The child is asked to answer the following questions "What do you see?", "What do you have?", "What do you hear?" and "What is that?" and to make spontaneous comments.

As in step 5, there must be gradual presentation of the images provided in the communication notebook. These images must also include symbols relating to "I see", "I hear", "It is/I am" and images relating to other sentence-initiating verbs and further attributes.

Figure 35. Encouragement for spontaneous comments

In conclusion, when applying different methods or approaches, the following points remain central:

- Catching and keeping the child's motivation and interest high
- Collaborating with the family because it is a resource
- Supporting the child to become increasingly independent in his or her daily activities

All the tools so far outlined should not be used as ends in themselves but should always be within a structured intervention with precise goals set. These goals must also be agreed with the family and modulated according to the child's reactions, with the view that each party must play an active role.

Questions

1) Is Applied Behavioural Analysis implemented using only rewards?

a. Yes
b. No

2) Any behavior that is chosen for change is known as what?

a. Target behavior
b. Differential behavior
c. Shaping
d. Desired outcome

3) What does the "A" stand in the terminology ABC?

a. Approximation
b. Antecedent
c. Agonist
d. Aftereffect

4) Which of the following is NOT reinforcement?

a. Praising a dog for rolling over
b. Patting a dog for rolling over
c. Ringing a bell before a dog roll over
d. Giving a dog a "biscuit" for rolling over

5) What is the most intrusive type of prompt?

a. Playing games
b. Saying "Good job"
c. Offering food
d. Giving a high-five

6) What is the purpose of avoidance?

a. To remove an aversive stimulus from the behaviour
b. To ensure that the desired behaviour is reinforced
c. To delay or prevent the occurrence of an aversive stimulus
d. None of the above

7) What response generalization means?

a. Child continues to exhibit target response in absence of intervention

b. Child exhibits untrained responses that are functionally equivalent to target response

c. Child exhibits target response under untrained stimulus conditions

8) Which of the following phrases declare generalization?

a. I wash my hands before I eat

b. All birds have wings

c. Many children eat cereal for breakfast

d. All the above

9) The TEACCH approach is aimed at

a. The family

b. The child with autism

c. The child with autism and the family

10) The organization of time and space are secondary elements in the TEACCH approach

a. Yes

b. No

11) To achieve the educative goals:

a. A didactic method must be followed

b. One must focus on the child's interests and build an interactive environment based on the child's motivation and interest

12) The objective of the PECS method is

a. Communicating using pictures

b. Progressively lead the person with autism to the development of functional communication as a social Exchange

c. None of above

13) PECS method

a. Can only be used in schools
b. Can be used in all environments and situations experienced by the child
c. Can only be used in family

14) PECS method

a. Allows communication with images only
b. Images are used to implement the language component
c. Both of the above

15) PECS method

a. Was designed for individuals with autistic disorder
b. Was design for people with verbal communication difficulties
c. Both of the above

2. Tools and resources for social competences and skills
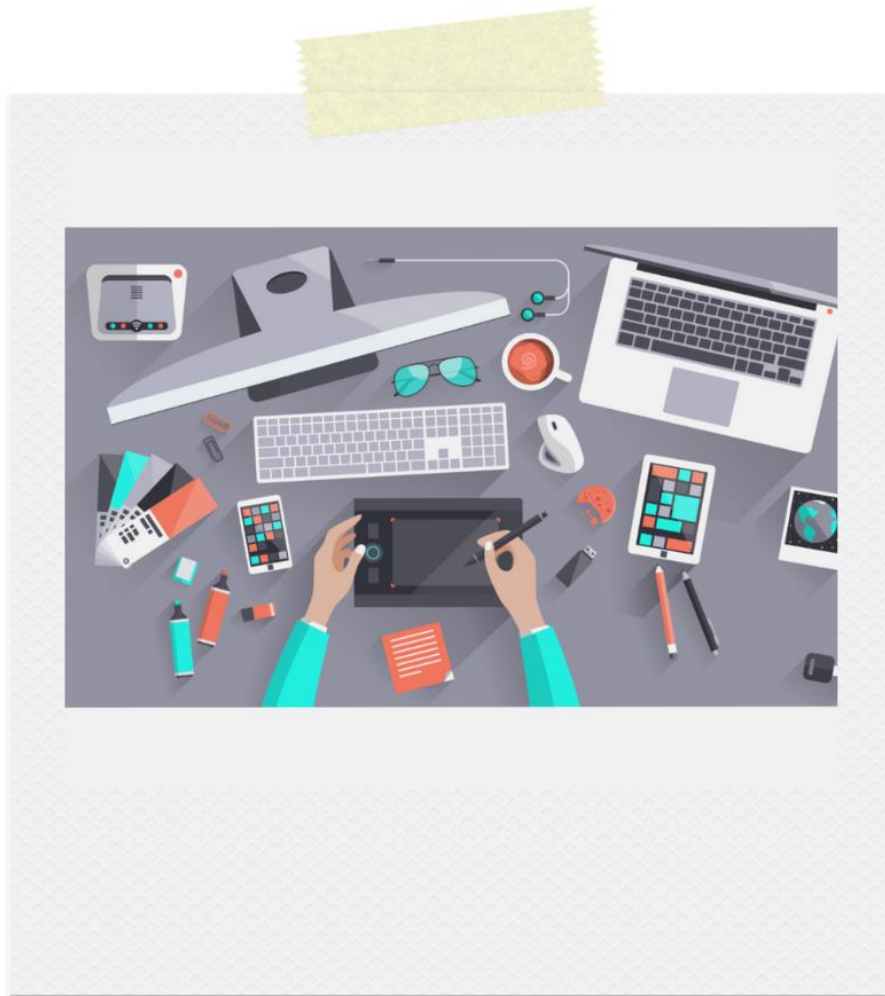
Module Description:

The objective of this module is to aid the public, specifically Special Needs Educators, teachers and any individual that is collaborating with children with ASD and mild intellectual disability.

Within this section some social skills and competencies which are crucial especially in Special Education Needs children will be defined. Thus, the module will cover different types of social skills, those competences that are indispensable for everyday functioning of SEN child, verbal and non-verbal skills. The module will show the difference between the relationship and functional approach.

Through this module learners will be provided with tips for teaching social skills to SEN children and some selected activities to improve some social skills of their charges. Finally, the section proceeds to the tools and resources that vastly support therapies and contribute to the vast improvement of interaction and social skills.

Figure 36. *Social skills. Source*: *Charis Therapy Centre*

2.1 Introduction to social skills and competences

Relational approach

REACh is an approach developed by Brookfields School for pupils with ASD. It is based on the original work by Dr Rick Solomon called **'Play and Language for Autistic Youngsters'** (P.L.A.Y.) and **'Developmental Individual Difference Relationship Approach'** (DIR Floortime) by Dr Stanley Greenspan and Serena Wieder in the 1990's.

The REACh approach is about first engaging with the child and then, through following their intent, developing their play. The introduction of appropriate language and imagination leads to the development of simple and subsequently, more complex relationships.

The approach is child centred and starts with careful observation and assessment where time is taken to share space with the child engaging them at their level. From this starting point we are able to build on their natural interests and starting to turn their play into more structured games and learning experiences.

One of the aims of REACh is to develop pupils' emotional independence and self-regulatory behaviours. This is achieved by attaching feeling and emotion (affect) to activities. Instead of counting bricks as they are put on a tower say, "Make me taller!" or "I need more bricks!" "I'm taller than you", etc.

How do we do it?

- Observe, assess and record
- Take time
- Start from the child
- Add affect
- Develop emotion and feeling
- Form positive and supportive relationships
- Provide a rich communicative environment
- Offer excitement, anticipation, challenge and fun

Examples of skills that can be improved by REACh

- Problem solving
- Creative thinking
- Attention
- Shared attention
- Joint reference
- Concept development
- Symbolic play
- Emotional stability
- Emotional regulation
- Sense of self
- Sense of others
- Acceptance of others
- Ability to share space
- Ability to follow others intent
- Imitation skills
- Language development
- Purposeful action
- Initiation
- Motor planning
- Sequential learning
- Verbal processing
- Internalisation of experiences
- Generalisation of experiences

Figure 37. *RDI Source: occupationaltherpistindore.com*

Through engagement and the subsequent development of a relationship within which the child is a confident participant, learning begins.

REACh supports the development of a range of skills which encourages the child to be a motivated and engaging learner. Pupils become eager to explore new experiences and to have the capacity to interpret them and make them relevant.

Additional resources

Figure 38. Video Relationship Development Intervention. Source: Howcast
Link: https://www.youtube.com/watch?v=WLXoi-olJFs

 Click on this **2-minute video** to learn more about RDI!

2.2 Types of social skills

Children need relationships with peers to build social skills. These relationships teach children how to communicate and play well with others. Finding friends, they have something in common with will help build confidence and **self-esteem** and let their guard down.

But social skills don't always come easy to children with special needs. Nevertheless, finding acceptance in a social circle can do wonders for a child's attitude and self-worth.

Anxiety, stress, or other communication barriers might prevent a child from knowing the appropriate action during a social interaction, which doesn't come naturally for some.

What are social skills?

Social skills can be defined as the communication and interactive skills that we use daily. This can be both verbal and non-verbal, including body language, gestures, and personal appearance. Communication in any language, both verbal and non-verbal, is the essential building block to human interaction worldwide.

Social Skills are enormous in today's society and affect how we interact, perform, and live our lives. Having excellent social skills helps an individual build and maintain many parts of life such as:

- Better communication
- Relationships
- Efficiency
- Careers
- Personal happiness

Social skills vary from one student to another. Each student is unique and needs help with different types of social skills.

That is precisely what children who have special needs require: empathy, consideration, and understanding. In contrast, a judgmental attitude, exasperation, or impatience may exacerbate their behavioral problems since they will feel as if no matter what they do (and ultimately who they are) it's never enough or worthy of praise and appreciation.

Non-verbal skills

Non-verbal social skills consist of ***actions, hand gestures, or overall movement in a social setting***. However, a large part of communication consists of body language. As a matter of fact, children usually act in different environments.

Your child may have trouble making and keeping friends because of nonverbal cues.

Non-verbal cues like these can indicate you are open to social contact:
- Smiling
- Eye contact
- Friendly hand gestures

Non-verbal cues below can point out you are uncomfortable with the social situation:
- Turning away from a person
- Keeping your arms to your side or crossed in front of you
- Not making eye contact while another person speaks

Most non-verbal social skills happen beyond our consciousness, so it is essential to teach children to be aware of their actions while handling social events.

You can help your special needs child understand what you are saying by using gestures such as nodding and pointing and focused eye contact. Especially in the beginning, these gestures may need to be prolonged or overemphasized until your child learns to understand them. All children enjoy responding to exaggerated nonverbal communications with their own movements and gestures, so it's easy to make the learning process into a fun game.

Figure 39. *Video Non-verbal Communication. Source: Amanda Guzman*
Link: https://www.youtube.com/watch?v=SKhsavlvuao

Click on this **3-minute video** to learn more about non-verbal communication!

Verbal skills

Your tone of voice shows your emotional state, and you might not even know it. For example, speaking very softly or monotone can imply you are shy, unhappy, or uncomfortable.

When a child with special needs is confronted with a social situation, they may create a defense barrier and struggle to find a way to connect with other children.

Individuals with communication and social issues can learn to control and modulate their voice volume; however, it is important to make sure they have a proper understanding of the levels corresponding to different situations. You can use the thermometer to for "emotional temperature".
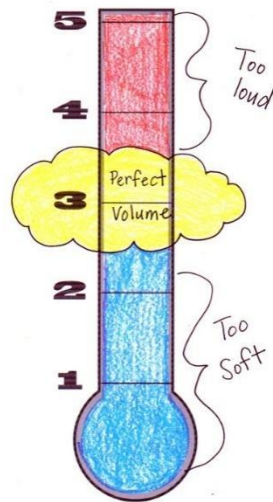
Figure 40. Thermometer. Source: do2learn.com

Figure 41. Video Supporting Communication – How to Promote Effective Communication. Source: Kids Included Together
Link: https://www.youtube.com/watch?v=POdoNtLSMFE

Click on this **3-minute video** to learn more about supporting communication in SEN kids!

Social skills needed

A range of the most desirable social skills:

- **Cooperation** – interacting appropriately with others (i.e., sharing and taking turns)
- **Participation** – attempting a task even when it may be difficult
- **Being Patient** – listening and waiting his turn
- **Helping Others** – builds interpersonal skills such as "giving back"
- **Following Directions** – builds character and respect for others
- **Staying on task** – builds focus and persistence
- **Accepting differences** – teaches diversity and the importance of differences
- **Listening** – helps a student learn to be an "active listener"
- **Communication & interaction** – be respectful to others, and they should be respectful to you
- **Praising others** – teaches students not to "put down" others and letting them know what they have done well
- **Being polite and courteous** – helps students learn how to interact with others
- **Using good manners** – when talking, eating, or in public
- **Respect** – ourselves and others, accept responsibility for what we say and do and be truthful and honest

There are plenty of disability forms and they can manifest in various ways. It is worth remembering that each form entails some unique challenges, especially while interacting with people.

For example, physical issues, mental disabilities, or behavioral problems can prevent a child from bonding with their peers.

Figure 42. *Video All About social Skills for Kids! Source: Mylemarks*
Link: https://www.youtube.com/watch?v=Myf2CUx9E60

Click on this **6-minute video** to learn more about the selected social skills!

2.2 Tips for teaching social skills

Don't try to teach all skills at once. Choose one specific skill and focus on it. Once the particular skill is explained (what it lies in), then teach the skill. You can brainstorm how the skill will look and sound. Adapt your tools and method(s) to the given group or individual. Don't rush anyone.

When you think you taught the skill properly and devoted to this part of your task a sufficient amount of time, practice the skill. Finally, allow the students to use this newly taught skill throughout the day in various settings. Try to change the settings.

If your child is easily overwhelmed, give them extra time to take in what you're teaching. Introduce them to new things gradually and give them a 'quiet space' to avoid overwhelm.

If your child needs more stimulation, make sure that they get more time to play outside. Give them plenty of physical activities that stimulate their mind and body. Let them bounce on a trampoline, play dough or listen to music.

Overall, developing your kid's social skills would take much time and practice. As a parent or guardian, the best way to help your child learn is to give them love. Foster self-esteem and simplify your language to their level. Don't forget to celebrate your child's milestones. Praise and compliment them when appropriate to reinforce positive behavior. **Don't forget – *practise patience, be consistent, be a role model*.** Most of all, keep things fun for you and your child.

Reinforcement of the skill is the only way to help the students learn and remember the specific skill. This can be done by incorporating the new skill into daily routines.

Activities to improve social skills in SEN students

There are many tactics to help your child improve social skills, and the method should be tailored to fit each child's individualized abilities. Here are some ideas.

• **Parallel play** – In this exercise, your child will be playing with another child but side-by-side. This allows them to get used to the idea of other children being around them without actually interacting, and each child is playing with a separate toy or object.

• **Sharing** – Yes, what your mother has been yelling at you for years is a fundamental part of learning. This means doing something with another child at the same time, with each child getting equal participation.

• **Taking Turns** – Once your child with special needs is comfortable with the idea of sharing, it's time to allow them to take turns playing with another child. This will enable them to use appropriate actions and adjust behavior as necessary.

• **Cooperative Play** – This allows you to set rules for a game to help your child learn to play within the game's requirements. Everyone will follow the same set of rules, which shows the child the correct way to interact with other children.

More examples ……

• **Staring contest –** To help your child with this sensory issue, you can start a staring contest. Let your child stare at your eyes for at least 5-10 seconds and gradually increase the time. If your child is able to keep their eyes on you after the agreed time, you can reward him or her with positive reinforcement. Praise them or give them a token for doing great.

However, it might be that your child won't be able to stare at you for long. Don't stress your kid any more than what they're feeling right now by forcing them to stare at you. Instead, try to place a pair of sticker eyes on your forehead and encourage your child to look there instead.

• **Face games –** Start with easy to copy actions. Touch your nose. Cup your face. Roll your eyes. Stick out your tongue. Once your child is able to copy you, move on to making funny faces. Because kids with autism find it hard to read emotions, you can help them become familiar with it by showing it. Model how the different facial expressions look at a person's face and have them imitate you.

• **Name game –** To play this activity, gather every one of your family members in a circle. Just so all of you can see each other. Start by saying your name while pointing at yourself. Move to the next person on your right to do the same until everyone else is done.

• **Play the game etiquette –** To do this activity, you need to pick any game that you or your child likes, for example a board game. Before the game starts, there are three things that your child needs to do before playing.

1. Shake hands with their opponent.
2. Look into their opponent's eyes (or their face if they feel uncomfortable).
3. Say the words, "Good luck."

Once the game ends, the players will do the same thing. But instead of saying "Good luck," they should say the words, "Good game."

• **Print and play emotion cards –** Reading emotions is another sensory issue among children with ASD or intellectual disability. Print out some selected emotions (e.g., angry, surprised, sad, excited, curious, bored, etc.). Don't worry if your kid gets stuck on a certain type of emotion because they can't remember. Help them by giving them a context of what that certain emotion means. Do this exercise several times to get them familiar with different emotions and feelings.

• **Video modelling –** You can also use videos to teach social skills to your kid with ASD or intellectual disability. This activity is a good way to introduce them to new things or give them an idea of different social situations.

For example, if you want to bring your child for a haircut and they feel uncomfortable about it, find a video of the same situation and show it to them. Let them observe what happens. Ask your child about what they see. Point out the facial expressions of people. This way, you can help your child become familiar with the same situation. You also give them an idea on how to behave accordingly.

• **Tell them social stories –** Social stories are a therapy-based activity to improve your child's understanding of proper behaviour. It also involves learning proper responses in a social setting.

Social stories or social scripts, teach children with autism the proper behaviour expected of them in specific settings. Settings can be varied like the playground, the doctor's office, the supermarket, the school, etc.

• **Set an example and become a role model –** Do your best to model positive behaviour to your kids – autism or not – especially when you interact with others.
Be an epitome.
Engage people with small talk. Talk to them with a friendly smile from time to time. Look at people's eyes. Be polite. Over time, you'd notice that your child will mimic what you do, too.

Also, you should take the time to explain to your child what you are doing and why. You might have to repeat a task and rules a few times. But the more you do this, the more your kid will become familiar with the appropriate social skills they need. You'd help them find a way to be friends and make connections with others.

• **Role play –** To do this, act out a familiar scene or re-enact situations that already happened. Discuss with your child the many different ways they can handle the given situations especially if they occur in the future.

The key to doing this social skill activity is to be consistent. You need to practise often with your child so that the ideas and principles will stick to them.

Figure 43. Video Getting My Haircut: A Social Story for Children with Aspergers and High-Functioning Autism.

Source: Mark Hutten, M.A. Link: https://www.youtube.com/watch?v=AbM7sEgozzA

Figure 44. Video Rethink Autism Tip: Turn Getting a Haircut into a Fun Activity. Source: Rethink

Link: https://www.youtube.com/watch?v=UDj-blkc-2Y

Click on the **two above video models** for haircut!

2.3 Tools and resources to improve social skills in SEN students

Individuals with autism and various other forms of disability needs often need extra help and resources dedicated to helping them learn social skills. If making friends seems like an intimidating challenge, don't worry. There are tools available to help teach your child or teen strategies for practicing their social skills.

Toys

Undoubtedly toys help with social development of children with autism and intellectual disabilities. If your child is struggling with their social skills, introducing toys and games could help them improve their behavior even if they do not realize it.

> **Gather Round Dinner Game**

This game combines fun and food to the dinnertime experience. This game just needs food and family to get started. Press the button on top and your next bite of food may be a vegetable or maybe you will have to talk about your most embarrassing moment of the day.

> **Zatswho**

Zatswho lets you slip photos into a soft flexible frame that makes it easy to carry around while protecting the photo from little hands. Children can learn about loved ones near and far with a caregiver or turn the frames over to learn shapes, matching or sequencing as children grow!

> **My friendship bracelet maker**

The My Friendship Bracelet Maker holds up to 10 strings (and keeps them organized) for making intricate bracelets for the more advanced bracelet maker or the artist. Young fashion accessory designers can also use just 3 strings for a more traditional approach to making bracelets to share with their friends!

> **My first daily planner**

My Daily Planner organizes dates, seasons, and weather to help kids plan their days and even includes feelings to prompt them to express their moods. Pieces are all attached by Velcro to the cloth planner with pockets for storing all of the pieces.

➢ **Waboba balls**

Waboba or "**wa**ter **bo**uncing **ba**lls" are used for active play in knee deep to waist high water. Throwing a ball teaches kids the essentials of turn taking, and playing attention to others. All these elements are essential in healthy social exchanges. Each ball provides a different variation of water play to fit everyone's needs- Extreme, Pro, Surf and Blast balls all amazingly bounce on water in a splash!

Children have opportunities for social growth while playing with friends, siblings and caregivers in a plethora of environments.

Figure 45. Logo of Waboba balls. Source: firendshipcircle.org

Every child develops social skills, but promoting play can assist with the child's reactions and responses in social situations.

<u>Robots</u>

Social robots play several important roles and benefits in the therapy of children with autism and intellectual disabilities. They are designed to take up numerous roles, even within the same therapy session. Through games and engaging activities, the robots can interact with children in order to train them with skills, elicit specific, desirable behaviors and provide encouragement and positive feedback upon the successful completion of a task. Based on the literature review, authors have categorized the several roles of these robots: As a *Diagnostic Agent*, as a *Friendly Playmate*, as a *Behavior Eliciting Agent*, As a *Social Mediator*, As a *Social Actor*, As a *Personal Therapist*.

As a large number of research projects have shown that using robots in autism therapy is beneficial, there is a growing number of researchers interested in translating these findings into actual integration of robots into a therapy environment. Most notably, Emilia Barakova's project (WikiTherapist) acknowledges the role of the therapist and: tries to improve the ability of therapists to program the robots through a graphical programming environment, which is easy to use (TiViPe); explores the role of therapists as creators of robot-type tools; and promotes social aspects of programming based on a web community of therapists and robot practitioners.

As many researchers acknowledge that actual therapy involves interaction between three parties (a robot, a patient and a therapist), researchers have coined the term *Therapist-in-the-Loop*, where the role of the therapist is emphasized and controlled and modification of therapy is encouraged. Researchers state that there is a need for therapists to: control the robots themselves (although mainly through a Wizard of Oz

type of interface); and track the progress of the therapy and measure its effectiveness. The role of learning and developing robot behaviors is also stated as a need.

The topic of simplification the programming of social and therapeutic robots was studied in Wroclaw University of Technology (Poland). The focus was on programming sequences of (social) actions to create meaningful behavior such as robots telling a story or recognizing objects and

Figure 46. Interaction between robot and child. Source: www.icsr2022.it

reacting to them. Creators of Social Robotic Toolkit used an alternative, tangible, programming method, where a sequence of commands or conditional commands can be drawn on paper and presented to the robot vision system. Tangible Graphical programming is increasingly used to program robots and internet-of-things devices, mainly as it provides a more effective way to facilitate comprehension of fundamental programming concepts needed to create useful programs. Also, several educational robots use a graphical approach to teach programming, most notably *Choregraphe for NAO and Pepperrobots*, *EV3 Programmer App for programming LEGO Mindstorms* and *Scratch for Arduino* for programming Arduino based robots. Open-source Robot Operating System (ROS) combined with Snap! Graphical programming was presented by the team from Lodz University of Technology as part of Roboterapia project. By using ROS, different devices and software programs can create a heterogeneous set of programmable nodes, available in the user interface. Initialization of each device can be also done through web-based GUI (Graphical User Interface) because it has the ability to send text and multimedia files (such as robot voices) directly from the browser. This further eases the development, as data transport and setup are transparent to the users. Additional nodes were connected during the project (such as voice generation when using the Wizard-of-oz type of scenario) but still using simple GUI.

More recent research of Maja Matarić and her team at the University of Southern California shows, that in-home robots could help supplement human therapists by taking over the more repetitive training activities, and AI (Artificial Intelligence) could help individualize the experience. The team has created a machine-learning model that uses audio and video data, such as dialogue and eye contact, from autistic children's interactions with the robot to predict whether they are engaged in a given training activity. If they're not, the idea is the robot could then react and reengage them to hold their attention on therapeutic exercises for longer stretches of time. However, the study was done using data collected from robots that lived with the children in their homes for a month-long period. In contrast, most other studies to date have been limited to short time scales and controlled lab settings.
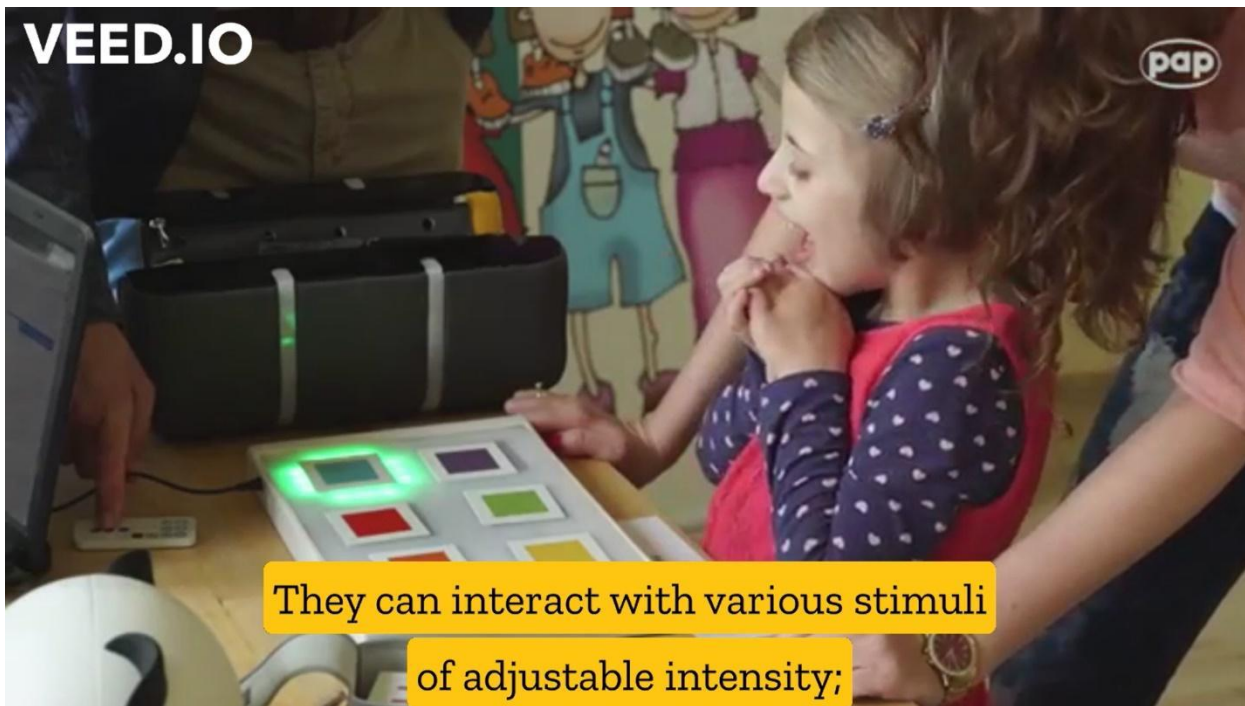
Figure 47. Video Project „Robotherapy". Source: Polska Agencja Prasowa S.A.
Link: https://www.pap.pl/aktualnosci/news%2C955927%2Croboterapia---interaktywne-gry-i-zabawki-pomagaja-w-terapii-sensorycznej-dzieci.html

▶ Click here to watch a video about the use of robots to teach social skills

The example devices that were developed within the Robotherapy project include: **SensorBox**, **Smart Sleeve**, **Blocks**, **a sensory mat**, **PANDA soft robot**, or **an interactive pillow**. Primarily these devices are programmable. Therapists can change the way they operate in order to adapt them to the therapy of a particular child or to take into account the progress of therapy. They can interact with various stimuli of adjustable intensity; it could be a sound, a light, a temperature, it could be vibration, or a motion.

Other digital devices

As parents watch today's children play mindless and solitary video games for hours at a time, they may worry that digital devices are luring children away from social interactions with real life peers. This concern is more intense for parents of a child with autism spectrum disorder (ASD) and other intellectual disabilities as there appears to be

a profound mismatch between their child's (often obsessive) desires to engage in technology and the child's need to socially engage with other human beings in order to overcome challenges in social skills.

In order to enhance social skills and competences of a child with ASD or ID, we can follow a **BYOD (Bring-Your-Own-Device)** or **BYOT (Bring-Your-Own-Technology)** approach which aims to engage any form of technology in a very fruitful and efficient way for any educational purposes. The approach refers to being allowed to use one's personally owned device, rather than being required to use officially provided equipment, for a specific aim defined by an education provider.

Involving technology and the media provides an exciting opportunity to enhance social skills, especially of SEN students who have some specific deficits in these areas.

Despite some potential drawbacks, technology is not an evil force from which we should try to shield our children. Technology is only a tool. As such, its utility or harm is determined by how we wield it. Today's technology potentially presents an exciting new world of learning opportunities that did not exist a decade or two ago. However, we need to strategically ensure that it is used for the benefit, and not detriment, of our children's development. Moreover, it is of utmost importance that these novel learning opportunities are appropriately evaluated for their effectiveness.

There are at least two ways in which computer and digital devices are incorporated into therapeutic interventions for children with ASD and intellectual disabilities, including multiple ones.

➢ First, electronic devices and tablets can be used as an alternative/augmentative communication device.

➢ Second, a favorite electronic game or devices can be frequently used as a reward for cooperating in behavioral programs. Electronic devices are commonly used with children with ASD in the home, school, and therapeutic setting to encourage or facilitate targeted behaviors.

It is of utmost significance that whichever device the child uses to boost their social skills and competences, the given activity should be based on the child's interests or passions, as such modules will be much more effective and self-engaging. Therefore, a therapist or an educator should identify the needs of the child from the very beginning.

There are a number of other notable recent efforts to use technology for the purpose of increasing social skills. For example, Dr. Christina Noel at the School of Teacher Education, developed the Minecraft Club for individuals with ASD and neurotypical peers who share the common specialized interest in the video game, Minecraft. The club

allows adolescents to work on the virtual Minecraft "worlds" they jointly created while simultaneously learning and practising how to interact and work with others. Another example is the Secret Agent Society (SAS) developed by Dr. Renae Beaumont at the University of Queensland (Beumont, 2008). SAS is an interactive spy game where children with ASD learn about relationships and emotions. SAS offers small group sessions for children to discuss the social skills learned in the game and also sessions for parents to support their child's burgeoning social skills development.
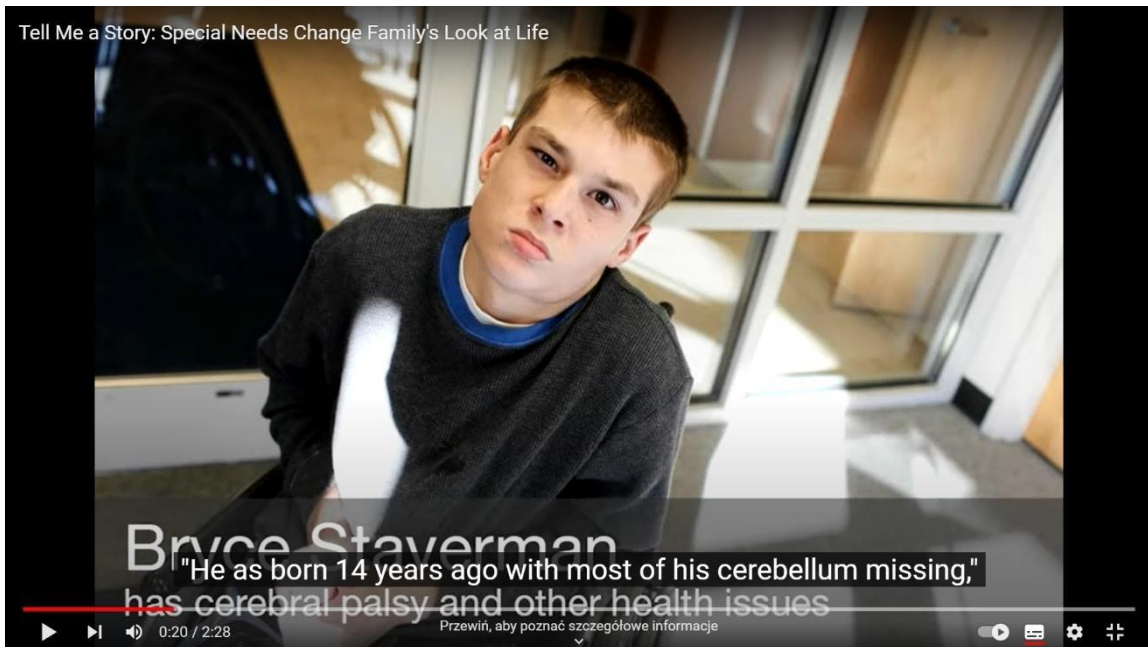
Figure 48. Video Tell Me a Story: Special Needs Change Family's Look at Life. Source: *Cincinnati Children's*

Link: https://www.youtube.com/watch?v=kQqbGqqniZM

Click here to watch a video with an interesting real-life story of a child with special needs

Books

Social interactions are not easy for kids with Asperger Syndrome, Autism and other special needs. Many SEN children need to be taught social skills and appropriate behavior the same way their peers are taught math and spelling. Despite technology, which is a real blessing in many spheres nowadays, one of the most common ways of teaching social skills to SEN students is reading social stories which help them understand what is considered appropriate interactions and what is not.

Open Educational Resources provide a lot of conventional resources of this type, i.e.: *The New Social Story Book* with over 150 of the most requested Social Stories; *The Social Skills Picture Book* with photographs of students engaging in a variety of real-life social situations; *Autism and PDD Primary Social Skills Lessons* with rebus-supported stories and 40 ready-to-use lesson scenarios; *100 Stories of Social and Safety Awareness* with special datasheets that help track the child's progress overtime; or *Now I Get It – Social Stories* along with illustrations that address and explain everything from playtime activities to difficult concepts such as anger management, transitions or public behaviors.

Educators and therapists may also find plenty of worklets, e-books and other colourful materials which respond to the selected needs and can be easily adapted to the specificity of the group or child's disorder.

READY TEDDY, GO!

Questions

1) What kind of skills can be improved by REACh (Relational Approach)?

a. creative thinking, problem solving, sequential learning, shared attention

b. acceptance of others, purposeful actions, overcoming obstacles, playing instruments

c. emotional regulation, motorcycle imitation, ability to share space, carpooling

2) Non-verbal queues include:

a. foot gestures, free and open speeches

b. karaoke singing, turning away from a person

c. eye contact, smiling

3) Which of these is not an example of a social skill?

a. participation, using good manners

b. being polite, holding on and focusing on task

c. praising oneself, being self-centered

4) Teaching social skills, you should:

a. forget about patience and consistence

b. devote to the task a sufficient amount of time

c. not stimulate your child in any way

5) The way your child can improve social skills is i.e.:

a. parallel play

b. independent play

c. playing the game netiquette

6) What are the tools and resources that aim to improve social skills in SEN students (those with ASD and/or mild ID)?

a. Premack blocks

b. Any non-interactive toys

c. A Social Actor or a Personal Therapist (robots)

7) Therapist-in-the-Loop means that:

a. therapy is a trap for a child

b. Therapy involves interaction between a robot, a patient and a therapist

c. The role of therapist is diminished and therapy is not modified throughout the therapy implementation period

8) BYOT means:

a. Bring Your Own Technology

b. Break Your Own Timidity

c. Bring Your Own Tablet

9) What benefits can the incorporation of digital devices into the therapeutic interventions for children with ASD and intellectual disabilities bring?

a. The devices should distract SEN children from the given task.

b. The devices should replace a child's interests or passions, and at the same time should not impact their self-regulation.

c. Any electronic device can be used as a communication tool and can be frequently used as a reward for cooperating in behavioral programs.
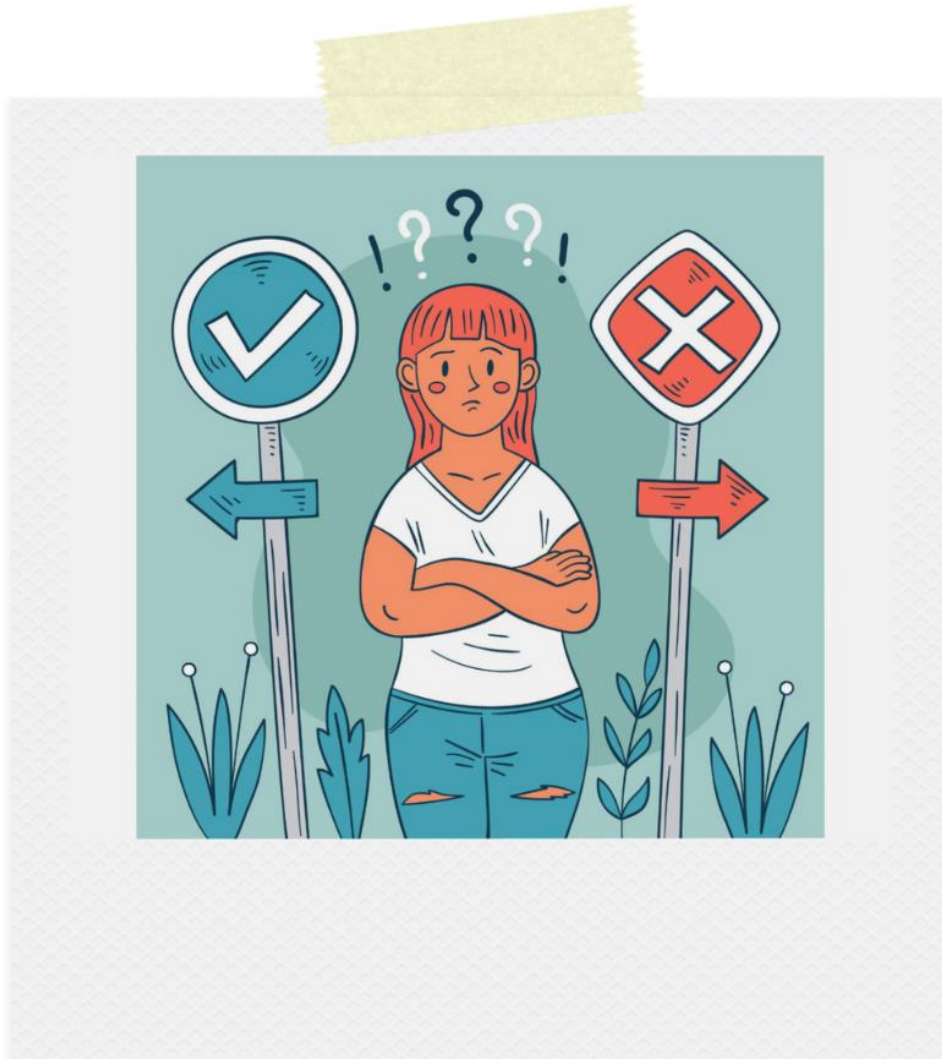
10) Social stories ….

a. should on no account contain any illustrations or photographs.

b. can help SEN students understand some selected behavioral patterns.

c. do not correspond to real-life social situations.

3. Tips and pitfalls of integrating SEN children in mainstream schools

Module Description

The aim of this module is to raise awareness of the benefits and difficulties that educators will encounter when teaching a class where there are students with learning difficulties and special educational needs (SEN). We do not mean that it is detrimental to have students with different types of educational needs in the class, but rather that prior preparation and knowledge of these difficulties is necessary and will need to be addressed in their context.

As a starting point, the definition of pupils with educational needs is presented and as a final point of interest, it allows professionals to learn about possibilities for inclusive education.

Figure 49: Pic of tip. Source: Freepick

The action of incorporating children with SEN (special educational needs) into mainstream classrooms is known as integration. This allows them to learn together with students without SEN. For most people, this inclusive approach seems to be a win-win situation, as it supposedly benefits both sides. For example, while children with SEN acquire social skills for their adult life by observing and imitating their peers, students without SEN become more tolerant thanks to a diverse classroom environment. However, the process is not as simple as it may seem at first glance. Therefore, in this module we will take a closer look at the difficulties and tips for integrating children with SEN into mainstream schools to make it a little easier for educators.

SEN students can sometimes be confused with students that need specific educational support. For this reason, it is necessary to specify the types of the existing special needs. Some of the most common (UOC, 2020) are the following:

Sensory or physical needs

Intellectual giftedness

Intellectual or cognitive disability

Mental, behavioural, or communication disorders

Specific social or emotional difficulties

Dysfunctional socio-familial situation

Other cases of maladjustment: cultural, linguistic…

These are just a few examples, but there are more, or it may be the case that a student has more than one need.

Early detection is very important. We can say that students have SEN if they are making significantly slower progress than the rest of their classmates. To determine this, we need to gather information from both professionals and parents, which, along with a psycho-educational evaluation, will provide us with a diagnosis of the student's situation.

Next, we will find out what advice can be given to both parents and professionals about SEN.

3.1 Advantages

There are several benefits that promote inclusive education in different areas of learners' lives:

Social interaction from an early age is both necessary and useful for a caring and ethical society.

It builds learning in values towards the development of the whole person and thus to develop into independent and sensible adults.

Increases the self-esteem of both teachers and people with disabilities.

From an early age, awareness of the social commitment of the pupils' families and professionals to a tolerant relationship is raised.

Inclusive education is synonymous with an education of the future. This means that people who practice it will have the opportunity to be prepared for new challenges in any field of work.

3.2 Pitfalls

As mentioned above, the integration of children with and without SEN in mainstream classrooms presents some advantages as well as pitfalls. This section will mention some of the pitfalls to prepare educational professionals for the challenges they may face when working in a classroom with and without SEN. Huei Lan Wang (2009) observed that teachers reportedly face problems such as choosing the right pace when introducing new concepts or doing exercises, implementing appropriate learning styles, deciding on seating arrangements, and distributing individual attention so that none of the students feel neglected or excluded.
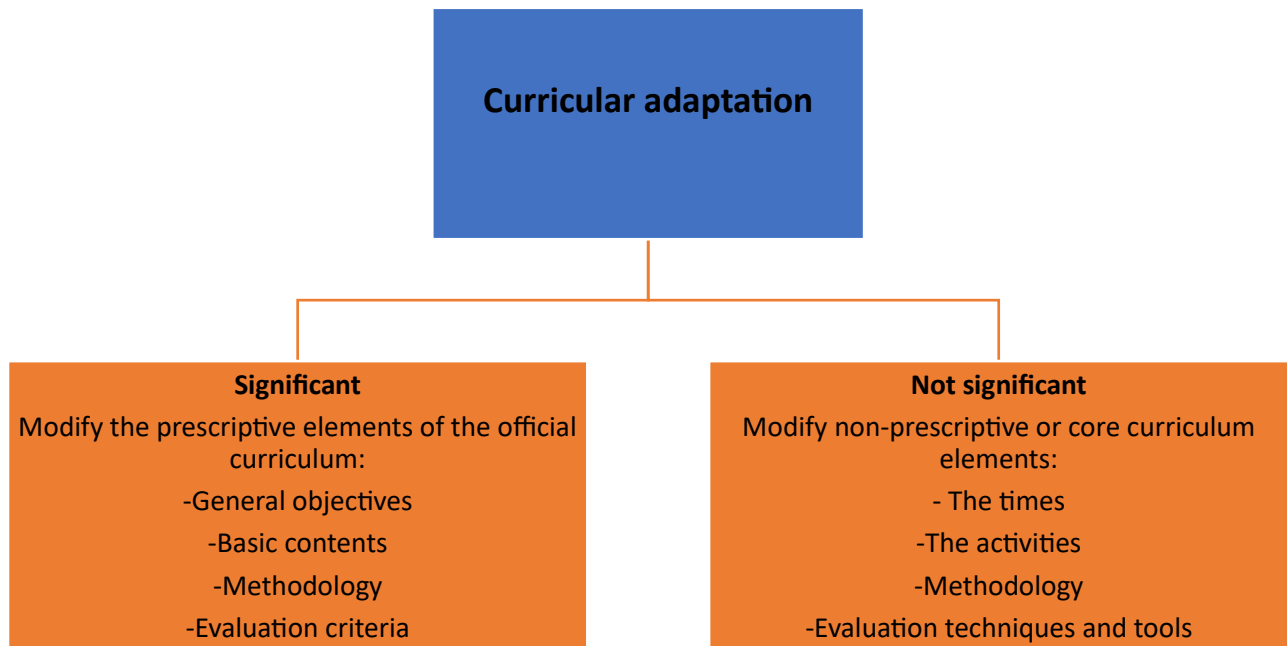
Some of the pitfalls are:

- **The high number of students for teacher,** which makes it difficult for the teacher to give pupils with different needs the attention they require.
- **The lack of preparation** of some teachers in different fields to support all pupils in meaningful learning and to make teaching more personalised.
- **The lack of intervention of families** due the lack of communication. If there is no good communication, the pupil will not receive the same education at school and home and, therefore, the educational process, which should continue outside school, will be hindered and the specific objectives will not be achieved.
- **Undue adaptation to the school** is another obstacle. In other words, the main beneficiary must be the learner, who must achieve the basic objectives. If the school is not prepared or does not have the resources to cater for the learner, it will be obliged not to rely on the learner for certain activities.
- Another difficulty is related to **academic achievement**. If children with SEN adopt the same type of curriculum, they may fall behind and not keep up because they may need instruction in a different form or special equipment. Children with SEN need more attention, which can negatively affect the rest of the students.

This type of attention is solved when a support teacher comes into the regular classroom to help the student with SEN and with individual curriculum adjustments, which can be significant and non-significant.

- Significant individual curriculum adjustments change elements of the official curriculum such as objectives, competencies, content, and assessment criteria.
- Non-significant individual adaptations modify elements such as time, activities, methodology, assessment techniques and instruments, etc.

```
                        Curricular adaptation
```

Significant	Not significant
Modify the prescriptive elements of the official curriculum:	Modify non-prescriptive or core curriculum elements:
-General objectives	- The times
-Basic contents	-The activities
-Methodology	-Methodology
-Evaluation criteria	-Evaluation techniques and tools

This must be addressed by first identifying difficulties in children's academic development or behaviour that affect their personal performance. Sometimes these difficulties can arise in the family environment, which can have a negative impact on children's behaviour. The next thing to do is to request a personal diagnosis from the school's educational psychologist to determine the appropriate support mechanisms. Finally, establish a follow-up of the school support through the adjustments mentioned above.

Even if all these difficulties can be solved thanks to the mentioned solutions, it is important to remember that socialisation is the most important thing. In the educational centre and especially in the classroom, children learn to share, to win and to lose. Remember that children should interact not only with adults, but also with children their age.

3.3 Tips and strategies

Previously, we looked at some specific advice for a range of difficulties. In this section, we will share some tips and strategies for educators suggested by Jim McClafferty (n.d.) and others to provide you with some suggestions that might be worth applying in your classroom.

1. Whenever your students are asked to complete a group task, **pair or group** students with SEN and children without SEN so they can work together and integrate. In addition, you will be able to assess them together knowing that each learner will have performed at a different level.

2. **Do not intend to change plans or routines** at the last minute. Although it is not a major inconvenience or problem for children without SEN when you do this, routines are of great importance to children with autism.

Figure 50. *Group of people*. *Source*: *Freepik*

So, if you need to introduce changes, inform the children and prepare them for the changes in advance.

3. Do not set the tables in a circle. Instead, **set them in a row**. Such an arrangement ensures that students with autism have their personal space and that students with ADHD are not as easily distracted.

4. **Equip your classroom**. Keeping in mind the needs of children with SEN, your classroom should have appropriate assistive devices that can help them focus, maximize their potential, and keep up with the rest of the class. These aids include: Writing slopes, special pencil grips, ear defenders, wiggle pads and task management boards among others.


Figure 51: Teacher in a class. Source: Freepick

5. **Know the learners**. To be able to apply the necessary strategies in class, it is obvious that you must know the students and what their needs are. Start by having interviews with the families and have the pupil present. Then, prepare reports about the characteristics of each one of them or take an interest in the psycho-pedagogical evaluation reports of each one of them.

6. **Plan activities in advance.** Leave nothing to the imagination. Organise activities in such a way that you know you will achieve the desired objectives. Plan for possible problems and improve the activities in the future.

7. **Ask your school to hire the support staff you need.** If the school does not know the needs of your class, it will not make your work easier. Ask for help and also work together with another colleague.

3.4 Educational methodologies for better integration of pupils in the classroom

With the aim of advising teachers on the use of methodologies that promote pedagogical integration and the development of competencies for all students, a summary has been prepared to synthesise some of the ideas and characteristics of different methods that could be called inclusive:

Project-based learning (PBL): thanks to the formation of working groups, students can study a general topic using the tools provided by the teacher. The groups work cooperatively and determine their own learning pace. The focus is on the elaboration of a final project on a specific topic, where students learn to organise themselves and work autonomously.
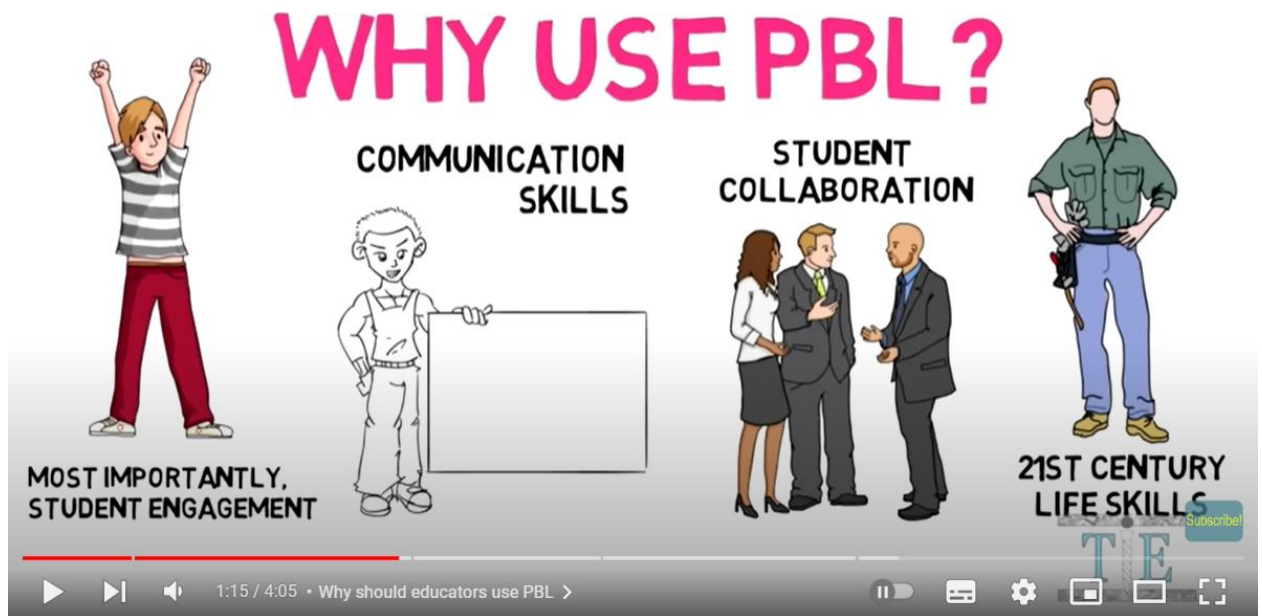
Figure 52: Video "Project Based Learning: Why, How and Examples" Source: YouTube.
Link: *(3502) Project Based Learning: Why, How, and Examples - YouTube*

Watch this 4-minute video to learn about Project-based learning (PBL)!

Flipped classroom is a pedagogical model that shifts the work of certain learning processes outside the classroom, using class time along with teacher experience to facilitate and enhance other processes of knowledge acquisition and practise within the classroom. The main goal of this methodology is to promote active learning that allows students to develop critical and analytical thinking.

Figure 53: Video "Modelo de aula invertida: por qué, cómo y descripción general" Source: YouTube.
Link: *(3502) Modelo de aula invertida: por qué, cómo y descripción general - YouTube*

Watch this 5-minute video to learn about Flipped Classroom!

Gamification: is a learning technique that transfers the mechanisms of games to the educational environment. Its goal is to improve academic results, motivate students, promote learning, and enable appropriate student self-knowledge and self-assessment.

Figure 54: *Video "Gamificación en el Aula" Source: YouTube.*
Link: (3504) Gamificación en el Aula - YouTube

Watch this 4-minute video to learn about Gamification!

Learning centers: is a method based on self-directed learning, that gives students the opportunity to self-actualize, feel good about themselves, and increase their self-esteem through motivational activities. The class is divided into learning spaces (also called stations). With a script posted at each station, the student knows what to do. The student chooses which station to go to. There may be different materials at each station, such as manipulatives, reflection and learning materials, etc. The main goal is to promote student autonomy through decision making and to cater to the diversity of students, depending on their learning rhythm and style.
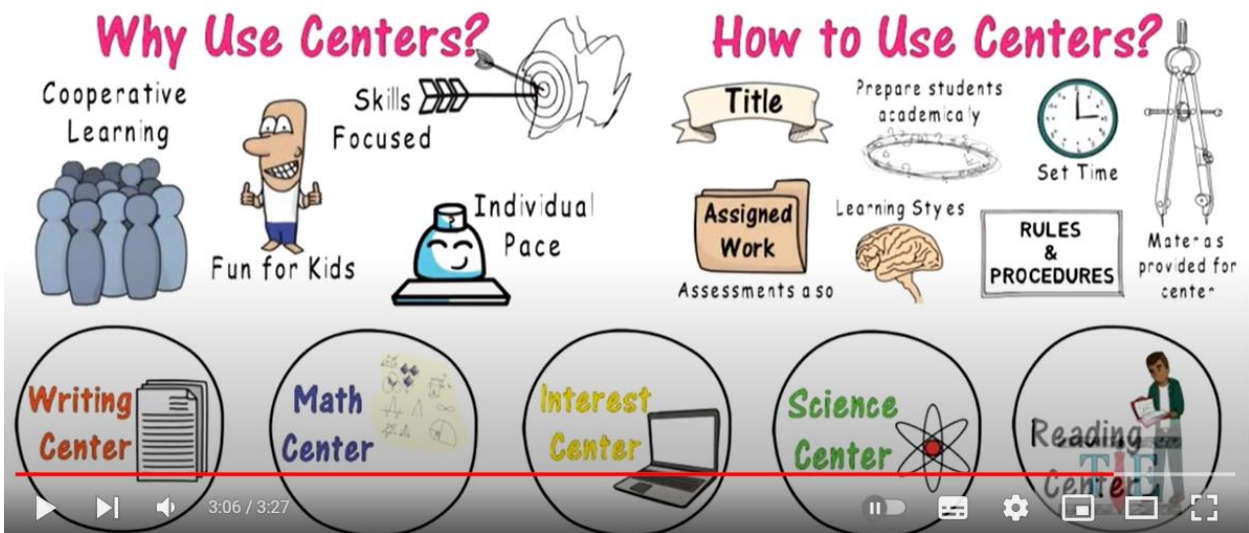

Figure 55: Video "Learning Centers |Teaching Strategies" Source: YouTube.
Link: (3504) Learning Centers | Teaching Strategies #8 - YouTube

▶ Watch this 3-minute video to learn about Learning centers!

Questions

1. Who are the pupils with SEN?

a) Those who require specific attention during part of their schooling.

b) Those who require specific attention throughout their schooling.

c) Those who require specific attention throughout their schooling or during part of it.

2 Which of these is a SEN?

a) Intellectually gifted

b) Eating chewing gum in class

c) Interrupting the teacher

3. What is so-called "stimming" or "self-stimulation"?

a) Recurrent body movements

b) Sounds or actions such as turning lights on and off, blinking, waving hands, etc.

c) All of the above

4. One of the tips for teachers is to:

a) Try not to change plans or routines at the last minute

b) Put the tables in a circle

c) Don't pair students up

5. Which of the following are pitfalls of integrating SEN students in mainstream education?

a) The high number of students for a teacher

b) The lack of preparation

c) Both of the above

6. Which of the following is a benefit for promoting inclusive education in different areas of learners' lives

a) Ensuring that children spent enough time doing physical activity

b) Creating a more caring and ethical society

c) Promoting healthy eating habits among children

7. What is project-based learning?

a) Learning through a games

b) Learning through watching and mimicking others

c) Learning through the elaboration of a final project on a specific topic

8. What is a flipped classroom?

a) Shifting the work of a certain learning process outside the classroom

b) Moving the tables around in the classroom

c) Moving the chairs around in the classroom

9. What is gamification?

a) It is a technique that consists of playing a game that the learner wants to play.

b) It is a learning technique that transfers the mechanics of games to the educational environment.

c) It is a learning technique that allows the student to show which game he/she is the best at.
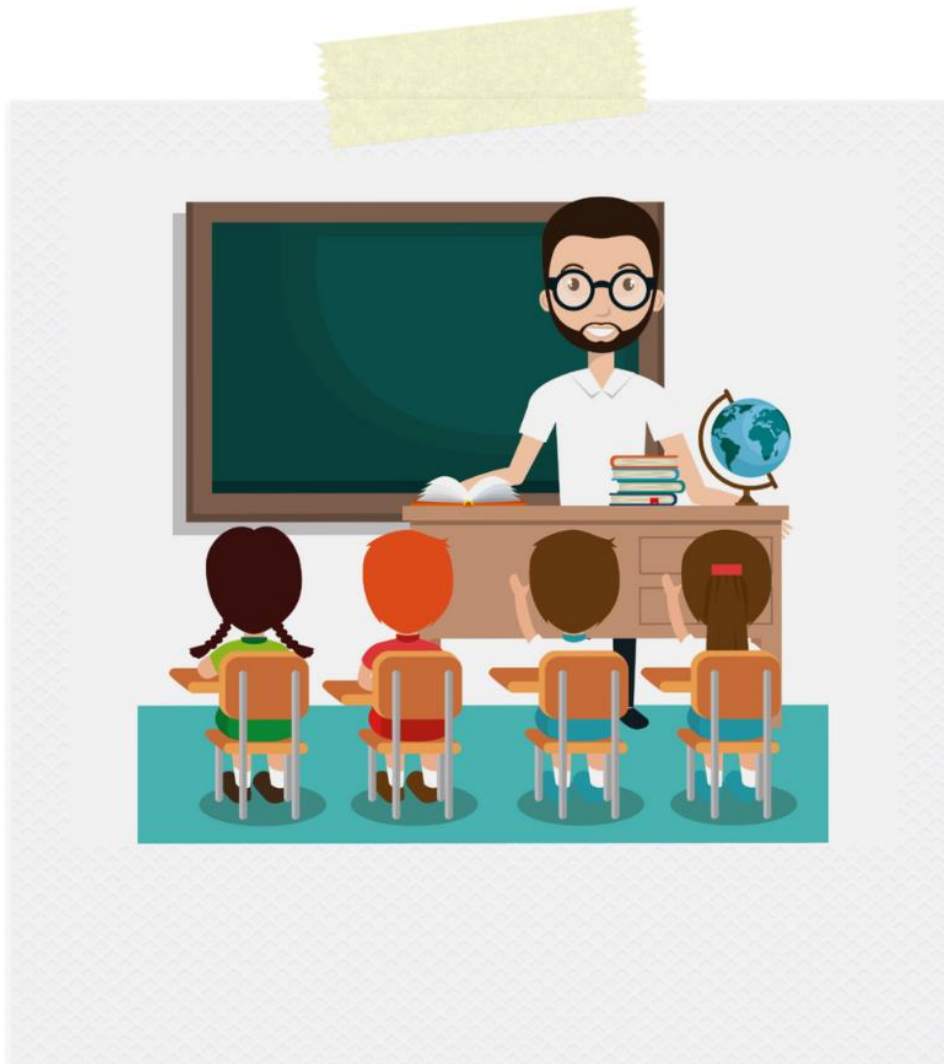
10. What are the learning centers?

a) Diving the class in different learning stations

b) Moving the teaching in educational centers

c) Moving the teaching in cultural centers

4. The role of parents in the development of social skills

4.1 Definition

Socialization is the process by which people acquire knowledge, values, attitudes and behaviors, necessary for effective participation in society.

Social skills are defined as the interaction between the person, environment and tools which are used to initiate and maintain vital interpersonal relationships. These skills include physical development, self-awareness, personal responsibility, economic-vocational activity and academic skills, interpersonal behaviors, self-oriented behaviors, academic behaviors, peer acceptance and communication skills (Elliot, 1987).

Social skills for children include:

- play skills – for example, taking turns in games or sharing toys
- conversation skills – for example, choosing what to talk about, or what body language to use
- emotional skills – for example, managing emotions and understanding how others feel
- problem-solving skills – for example, dealing with conflict or making decisions in social situations.

Social skills help autistic children and teenagers know how to act in different social situations – from talking to grandparents to playing with friends at school. Social skills can help them make friends, learn from others and develop hobbies and interests. These skills can also help with family relationships and give them a sense of belonging. And good social skills are important for autistic child's mental health and overall quality of life.

Basic principles of social skills education

Because autism affects many areas of a child's functioning, ongoing follow-up is needed a collaborative team of representatives of various professions working with the child and family. Main attention is paid to the development of social skills, promoting missing functions.

Behavioral therapy techniques

The main features of structured training are a clear visual environment and expected activity's structure. Its purpose is to help the child become as independent as possible,

to reduce insecurity feeling, anxiety, tension, arising behavioral problems. The minimum number of stimuli that helps is important for the child to concentrate on the essential aspects of the expected activity. Efforts are made to create and adhere to usual routines, well-known routines (Lesinskienė, 2000).

Very important help for parents, constant support of parents and pedagogues working with the child cooperation, integrity and constancy of the methods used in the educational institution and at home. Before when starting a child's education, it is necessary to thoroughly study his interests, abilities, missing skills, the level of functioning in various areas (Volkmar, Klin, 2004, Lesinskiene, 2000, Lesinskiene, 1998). It is also important to understand that there is no one-size-fits-all approach to education or treatment for autism cases (Wenar, Kerig, 2006, Mikulėnaitė, Ulevičiūtė, 2004).

Figure 56. ''Autism social skills training'' *Source: PBS Kvie* https://youtu.be/DEqhWMugltk

▶ Watch this 1-minute video to learn about autism training on social skills

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4.2 Social difficulties

Lack of social skills leads to problems, like building and maintaining social relationships among peers at school and between family members. Evidence shows that children with ASD are often bullied, have fewer friendships with their peers, often do not have very close friendships, and feel lonely and excluded. A direct correlation has been found between a person's lack of social skills and the frequency and severity of bullying (Marshall et al., 2015).

Observations by special educators in kindergarten and primary classes have shown that children with ASD primarily engage in individual activities during recess, rarely engage in group play and/or have less interaction with typically developing peers. Researchers are also analyzing the impact of social skills deficits on the mental health of children with ASD. Research shows that the quality of social interactions and communication with others is directly related to levels of loneliness and anxiety (Bauminger&Kasari, 2011; Lasgaard et al., 2010), employment, education, delinquency, substance dependence and mental health (Jones et al., 2015).

Social skills thus affect a large part of the lives of children with ASD, from independence and adaptation to relationships with others. Lack of social skills leads to poorer academic performance, relationships with peers and family members, poorer mental health, more problematic behavior and a higher incidence of problem behavior. It is important to stress that the negative consequences of lack of social skills for a child with ASD persist into adolescence and adulthood, irrespective of the individual's level of intelligence.

4.3 Social skills disorders in autistic children

Difficulties in social competence are one of the main features of the autistic spectrum Disorders of social interaction are one of the main features of autism spectrum disorders, and impairments in social interaction are one of the groups of diagnostic criteria for autism. Autistic children have low responsiveness to other people, especially new people, lack the ability to form relationships, and are not able to play alone, show little interest in children playing nearby, and are unable to establish contact with them (Mikulenaite, Ulevičiūte, 2004, Lord, 1994). Autistic individuals have difficulties integrating information from the environment, establishing and maintaining relationships with others, being and functioning in new environments (Bellini 14 et al., 2007). They tend to interact with only a very limited number of people (1-3 people, at to whom they are most attached) Lesinskienė et al., 2001). The most common impaired social skills are the following (Bellini et al., 2007, Bregman, 2005, Simpson, Otten, 2005, Frith, 2003):

- Inability to establish and maintain contact;
- the inability to participate in conversation, in joint activities with other people;
- the inability to respond to communication initiated by another person;
- inability to express one's wishes (gestures, words);
- not sharing (things);
- not making eye contact;
- not being able to wait for his/her turn in a group activity, etc.

It is the social behavior disorders that distinguish autism from other developmental disorders and conditions (mental retardation, language, learning disabilities) (Bregman, 2005). ***There are three types of autism groups of social problems typical for autistic children*** (Edelson, cited in Ivoškuvienė, Balčiūnaite, 2002):

1. **Social avoidance.** This is the avoidance of people and unwillingness to interact with them. General social avoidance is characterized by anger, withdrawal, cessation of activities;

2. **Social indifference.** It is observed when children do not seek social interaction with others, they are not interested, children with social indifference seem to have no interest in social interactions at all the time they could spend alone;

3. **Social clumsiness.** Autistic children, who are characterized by this, try to establish contacts with people, but they do not know how to do it properly, and are not able to maintain to maintain the relationships that have already been established. This problem is particularly common in people with Asperger's syndrome. It is often assumed that autistic people are not only unable but also unwilling to communicate with other people.

This may not apply to everyone, especially milder forms of autism or Asperger's syndrome. Often, they would like to start a relationship but do not have the necessary skills or try to make contact with people but are unable to maintain it (Bellini, 2003, Frith, 2003, Ivoškuviene, Balčiūnaite, 2002). Autistic people may try to make contact as many or more times, but the quality of these attempts often varies (Lord, 1994). For example, a healthy child would ask for or take an object on his/her own, whereas an autistic child would in the same situation, an autistic child might point to an object with a finger or point to an object with an adult's hand (even at even when they can speak). Thus, when assessing social skills, attention should be paid not only to their quantity, but also the quality.

Figure 57. *Social skills printables for students with autism*.
Source: S.B Linton book social skills printables workbook for students

4.4 Development of social skills

Teaching methods

Although impaired social skills are a central feature of autism spectrum disorders, only a small number of children receive adequate training in social skills. This is a big problem because 25 not developing social skills eventually leads to other problems - children and teenagers have learning difficulties, they find it difficult to fit in with their peers, they feel rejected, they show anxiety, symptoms of depression etc. Most importantly, impaired social skills hinder the formation of close relationships, which leads to social isolation. Communication skills are essential for good social, cognitive and emotional development. So, all children with autism spectrum disorder should be taught social skills (Bellini et al., 2007). It is also children would attend mainstream schools together with other children. This would help in training communication skills, to achieve the best possible social behavior. It is only important to adapt to these children learning programs and give them as much support as they need (ideally, every autistic a child with mental retardation should have a personal special educator) (Bellini et al., 2007, Koegel et al., 1992). Various social skills training programs have been developed in various foreign countries, especially in the United States (Buschbacher et al. 2004, Barry et al. 2003, Bellini 2003, Kamps et al. 1992, Koegel et al. 1992). Some offer social skills training in school, others outside of school. Some are for education namely autistic children, others are intended for those around them who communicate with autistic children (family's members, teachers, classmates), for training. In the case of autistic children, since the spectrum of this disorder is huge and the signs of the disorder manifest themselves very differently, the effectiveness of the programs for different people can be very uneven for children. Before starting to carry out some social skills training program, it is necessary to collect information about as many educational principles as possible, to analyze specific one's case and only then make interventions. Only then will the training be effective and help not only more effectively communicate but will also reduce behavior problems. In general, the most important thing is that autistic children are not left behind, so that those around them can help more effort in trying to contact these children and adults themselves. If they do not have enough skills to communicate, so those around them must help them to communicate, to blend in activities, adapt in various environments. Equally important for both autistic persons and the environment the efforts of the people present. If those around them would get involved in the education of autistic persons, they would be better off prognosis of the condition, and, with a decrease in inappropriate behavior, the lives of those around would improve quality.

Figure 58. Impact of technology on human relationships. Source: freepik

Autistic children do not have enough social skills to engage in independent communication and activities with other people. Moreover, even if a child has a particular social skill, he or she may be able to use it in one situation and not in another. It is particularly important to pay attention to autistic children in group activities, as they feel very insecure when they are with several people and tend to withdraw even further into themselves.

There is a need for support, communication, and encouragement to participate from outside. When thinking about **educational programs,** it is important to focus not only on developing the social skills of autistic children themselves, but also on teaching the people who interact with autistic children, such as teachers, parents, siblings, and classmates, how to deal with autistic children.

Professionals who work with autistic pupils have noticed that there is a link between the social skills of autistic children and behavioral problems. In specific situations, the relationship is not constant, so one should observe the autistic child's behavior and try to pick up trends in which particular behavioral problem can be used instead of the social skill, i.e., which communication function which behavioral problem serves. Once the problem behavior has been identified, it can be replaced by positive social skills.

Thirdly, the results suggest that social skills in autistic children need to be developed in a variety of contexts, both in one-to-one interactions with the child and in joint activities with other children. Furthermore, it is possible to predict generalization of learning, i.e., it is possible to expect that the social skills learned will transfer to other situations.

Fourthly**,** there is a tendency for autistic children to have many difficulties at the same time. They often have social, thinking, and attentional difficulties at the same time, and exhibit aggressive behavior. This means that it is important for professionals working

with autistic children to pay attention to a wide range of potential problems, not just those that are obvious.

Figure 59. 7 important social skills for kids. Source: Amigos for Vida Friends for life (non-profit organization) physical education post (2020.03.30)

To help autistic children succeed in social interactions, research is first needed on what social skills they typically use and what behavioral problems they manifest at the same time, and whether social skills and problem behaviors are interrelated. If trends emerge, it would be easier to analyze the communication patterns and behavioral problems of specific autistic children and to design appropriate interventions. In Lithuania, the social skills and problem behavior of children with autism have not been studied from a psychological point of view, whereas these problems are relevant to almost all children with the disorder and are a major challenge for them, their family members, and others.

Educating autistic children is a very intensive process, involving both the specialist and all family members or even friends working with the child. Some therapies can be done at home (with parental training or specialist guidance), while others require a special space. Often the interventions are complementary, so that a combination of interventions is also common. Although the parents of a child with an autism spectrum disorder have the final say in the choice of intervention or therapy, it is also important to consider the views of the child's health professionals, co-morbidities, and disorders.

It is said that if you know one autistic child, you only know one autistic child (no matter if you are raising a ten autistic child), and that it is virtually impossible to find two identical children with autism spectrum disorders. Some can talk and imitate adults,

others cannot, some try to communicate, others are completely withdrawn in their own world.

Figure 60. Ten things Every child with autism wishes you knew Source: Ellen Notbohm book Ten things every child with autism wishes you knew.

Autism causes children to perceive things in a distinctive and qualitatively different way, such as the fact that their primary language is visual rather than verbal. "In fact, children who are often unable to communicate in oral language have often been "clued in" to their problematic behavior by the children themselves: by their body movements and facial expressions.

You tell a child, you explain, and he doesn't understand, you show him a picture - he understands and acts it out", says the teacher.

Autistic people learn differently; their thinking is pictorial. "I think in images. Words are like a second language for me.

I turn the words I have spoken or written down into color films, add sounds to them and watch them like a videotape. When someone speaks to me, I instantly turn their words into images. This is often difficult to understand for people with a linguistic mindset" (excerpt from Ellen Notbohm's book "Ten Things. Every Child with Autism Wishes You Knew").

Use lots of visual aids: pictures, symbols, photos, cards, objects, gestures. These tools help to teach your child not only to speak, count or express themselves, but also to think and understand what is expected of them. It is not with words but with actions and movements that we learn to wear shoes. Just saying the words will not teach a child - it is a matter of showing, of helping. Children with autism spectrum disorders don't understand instructions given to all children - the teacher or assistant must show them specifically when they approach. These children struggle to learn in a group and do well when learning individually.

READY TEDDY, GO!

A properly selected AAC system provides the following advantages:

- partially replaces verbal communication, it complements it;
- helps to understand the needs of a child with speech and language difficulties;
- provides the child with a language and communication impairment;
- helps the child with speech and communication difficulties;
- helps the child with a communication disorder to express coherently;
- The person with communication and communication disabilities to communicate coherently with his/her own thoughts;
- helps in the selection of sentence structure.
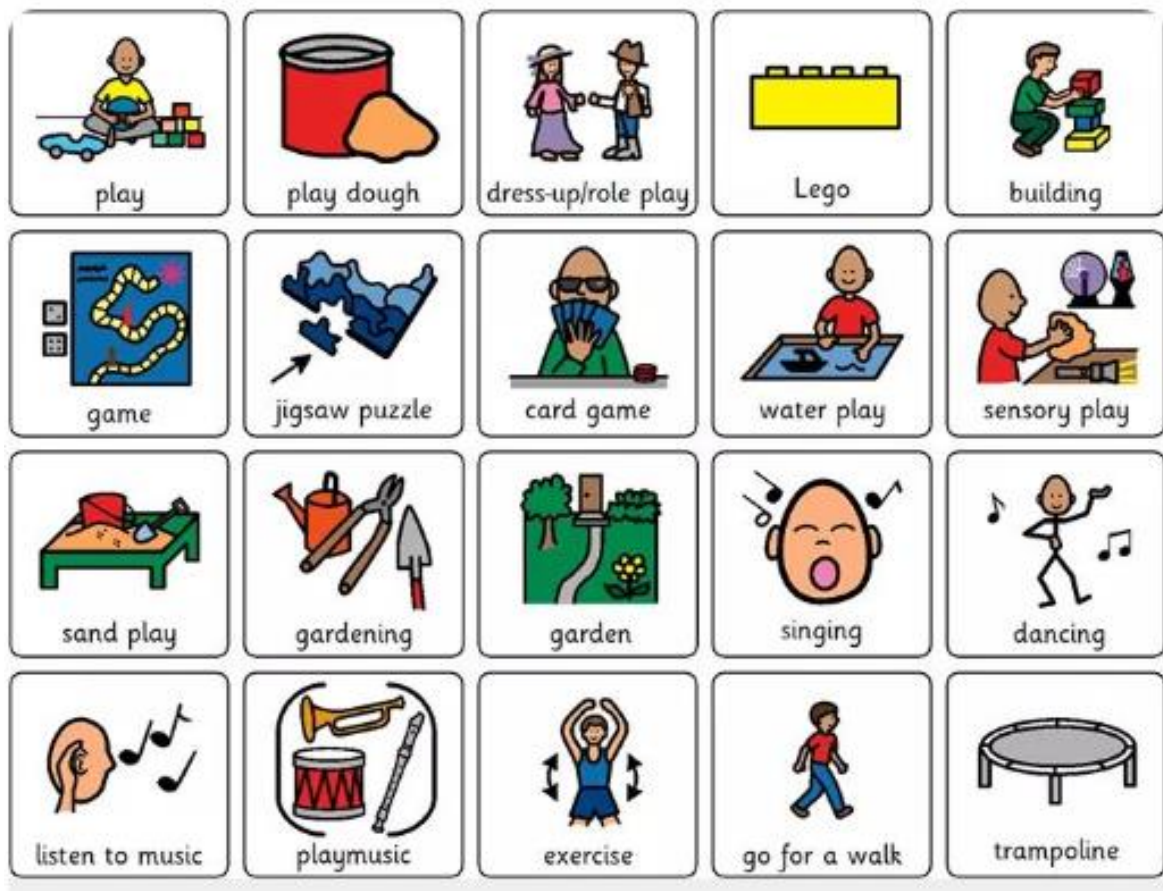
Figure 61. Visual schedule for people with autism Source: the Kent autistic trust organization

Augmentative and Alternative Communication (AAC) Five years ago Lithuanian teachers that are working with special needs pupils knew too little about Augmentative and Alternative Communication or about Informational Computer Technologies. Fortunately, in the course of time there were the great differences in special needs pupils' educational content, methods and means as well as in educational environment. Therefore, both Augmentative and Alternative Communication and Informational Computer Technologies have become essential part of educational process.

They hope that this edition will encourage educators, parents and society members to assess more objectively special needs pupils' abilities and needs evaluation, to understand importance of Augmentative and Alternative Communication and Informational Computer Technologies for education quality.

10 Steps to Washing Your Hands (Short Version) - Hygiene Habits for Kids

Figure 62. "How to wash your hands correctly?" Source: Kauno VSB youtube : https://youtu.be/e4qVjkZZaa8

Watch this 2-minute video to see the correct process of washing hands.

In Lithuania, the choice and adaptation are still limited, but the situation is changing. It is very important what an individual desires, taking into account his or her physical, mental and language abilities and needs.

Electronic means of communication vary in size, form and function. Depending on the size of the medium, they are tables of symbols. Several tables may be created for one instrument. Tables are created using one AAC character system. Each symbol is voiced by the words corresponding to their meaning. For example, the person using the tool is asked to press a box in electronic communication tools, for example the phrases: "I want to eat', 'I want to drink', etc.

The right environment is key to the success of children with autism spectrum disorder. Structured learning is about the structure of the environment and activities, presented in a clear, understandable and visual way. Both in the educational establishment and at home, there is (necessarily!) an individual scheme of activities that the child understands

- a visual agenda that helps him or her to know at all times what he or she will be doing, where he or she will be working, how much time he or she will be devoting to it, and what will happen afterwards. An autistic person without a daily routine is constantly stressed, restless and aggressive. The most important thing is that he or she understands what you want or expect from them. Mark with pictures, symbols what is coming up today. When they know what to expect, they will feel much calmer.

Features of collaboration between school and parents in the education field of children with autism spectrum disorder (ASD)

The provisions on cooperation between teachers and parents of children with autism spectrum disorder are enshrined in the Law on Education of the Republic of Lithuania and in the Orders of the Minister of Education and other legal acts issued by the Republic of Lithuania.

It should be stressed that in Lithuania, cooperation is encouraged for the well-being of the child.

These legal acts contain provisions ranging from the guidelines to be followed when working with a child to the way in which professionals should work together.

So, what does cooperation promote? A number of factors encourage collaboration:

Active parental involvement, unity in teamwork, active encouragement of the child's participation, the educators' attention to the child and his/her problems, the courage to turn to professionals for help, the parents' different attitudes towards the child's difficulties, the professionals' involvement, the well-functioning network of partnerships, and the responsible attitude towards the child's difficulties, This brings the cooperating parties closer to achieving common goals, creating the right relationship and ensuring partnership. Only joint activities and mutual cooperation can produce the desired results. Cooperation between educators, professionals and families is therefore essential for the well-being of the child. Meeting the child's educational needs is not possible without the intervention and cooperation of professionals. Cooperation is fostered by an understanding and willingness to help the child. Often it is not the parents who notice the child's disabilities, but the teacher. The teacher works with the child every morning, imparting knowledge and competences, communicating with the child and involving the child in the educational process. The teacher also observes the pupils' developmental achievements or potential and understands that not all pupils have the same potential. If the teacher realizes that a child has a disability, he/she can seek help. In this case, the teacher seeks help from his/her own educational establishment or from other institutions. A panel of different specialists and competent teachers can bring positive results in analyzing and assessing the child's educational potential and needs (Methodological Guidelines for Education, 2010).

Figure 63. Meeting child's educational needs. Source: freepik

Teachers choose different forms of cooperation with parents: parents' meetings, parent education, field trips, individual work, celebrations, correspondence, events, specialist consultations. Teachers and other professionals working in the educational establishment are brought together as a team to meet the child's educational needs. There is no one-size-fits-all model of cooperation. The differences in each educational institution, children's needs and capabilities make it possible to create more than one model or structure of cooperation (L.Miltenienė, 2005). There can be two directions of cooperation: internal and external. The internal direction includes all the people with different specializations who work in the educational institution, while the external direction includes different professionals working in different institutions. The cooperation between these professionals is the most effective way of ensuring that the child's educational needs are met in the future, and the most common forms of cooperation between professionals and the child's family are: consultation and direct contact with the child. In this process, professionals explain the situation in detail and answer the parents' questions, which can be many and varied. The information given to parents includes: demonstrating or explaining in detail what actions will be taken at one point or another, suggesting to parents that they read sources of information that make them aware of the situation. The professionals also present the results of the assessment to the parents during the assessment, pointing out the child's problem. Parents are provided with information relating to the child's development, and a range of formulated recommendations are made, which are applied not only in the educational establishment but also in the child's home. Specialists point out that in order to help a child, parents' willingness to cooperate, awareness of the problem and the need to solve it, active participation in the educational process, and shared expectations of the child are necessary. Cooperation between professionals is based on a model that focuses on the exchange of information with each other, consultation, discussion of the problem(s), the development of the child's skills and continuity. Parents are treated as partners, consultants, guardians and supporters. Parents often seek to work together with professionals in an attempt to help, and their children tend to overcome difficulties, so

it is important to increase parental autonomy and promote parental involvement in decision-making.

Each child with an autism spectrum disorder must have an educational program that focuses on creating an environment, developing language, promoting communication, setting and monitoring goals.

Figure 64. Family. Source: freepik

It has been observed that children with autistic spectrum disorder feel very well when interacting with animals or participating in activities with them, and that animals help children to overcome the symptoms of autistic spectrum disorder, e.g., they sleep better, become calmer, more focused, and start to communicate. Educators and special educators are considered to have the greatest influence on the effectiveness of collaboration in the education of children with autism spectrum disorder. There is a lack of research on cooperation between educators, parents and special educators. There is also a lack of analysis of their views on collaboration in meeting the child's educational needs. Educators, parents, and professionals have the greatest influence on the effectiveness of collaboration in the education of children with autism spectrum disorder. Professionals are important, but so are the child's parents. Often the teacher and the specialist assign the parents the role of executors or call it a partnership.

Parents must be involved not only in the educational process, but also in the life of the community of the educational establishment, and if the information is passed on from the educational establishment to the parents, the desired cooperation will not be there, because the parents will be merely the doers of the obligations, voicing their objections, their expectations. In Europe, in the documents regulating education, cooperation in the educational process is regarded as a value, an ambition, a means to achieve certain goals.

Mutual cooperation enables participants to change their beliefs and attitudes, promotes the sharing of information and the acquisition of new knowledge. To sum up, cooperation is a value that is seen as a means to an end. Meeting a child's educational needs is not possible without the intervention and cooperation of professionals, which is why cooperation between parents, educators and professionals is essential and necessary. Communication is one of the basic human abilities and values that should be valued.

Growing self-esteem as a "different" child

Children with special needs attending mainstream schools or kindergartens are exposed not just to a small circle of others like themselves, but to what society is really about.

They get the help they need in a mainstream context. They also see that another child might need different help. Imagine a child who has special needs, but is able to eat on his/ her own, and he/ she sees another child in the kindergarten who, just like him/ her, has no special needs, but he/ she does not know how to eat yet. And then he/ she doesn't feel that there is anything wrong with him/ her. He/ she starts to realise: "All people have those special needs, but mine are a little bit bigger and require more help". This is how a child's self-esteem and self-confidence grow. And his/ her parents' confidence in him/ her grows too. And it also means that he/ she acquires the competences he/she will need later in life.

No need to over-protect

If children with special needs start attending special kindergartens, parents become more and more convinced every day that they will always need lots and lots of help. When it comes to mainstream groups and classes, teachers do not have the time or the capacity to give that much help, to jump on that one child, because there are so many others. And then that child himself/ herself is forced to go out of his/her comfort zone and acquire abilities that he/she probably would not have acquired in a special school, no matter how much help he/she received there.

If there are five children with autistic spectrum disorder in a group, then they just sit there and live on their own. And when one of them started at Queen Martha's School, at first, he was just watching the others. But after a few months, he stood up and went to play football with all children. Even his parents couldn't believe it! From that day on, the boy has been taking part in activities. It was a turning point when he became part of society, which is what we all strive for. A few years later, this would have been less likely, as the neural connections in the brain, skills and habits would have been formed.

Children with special needs should be integrated into the society as early as possible. Partly because the youngest children don't have any preconceptions yet. Sometimes

families decide not to send their child to mainstream school in order to protect them from unpleasant experiences, pain and bullying. Yes, there may indeed be children who are ridiculed. But the most important thing in such a situation is always the teacher - how they react, what measures they take. By the way, exactly the same thing can happen to a simple child with a big nose, for whom this feature may amount to a special need at a certain stage of life. It is not the children's problem, but the adults' problem if they do not work with the children when bullying occurs in the classroom.

In a "normal" school, not only the 'different' child, but also the family that tends to protect him or her, sees that each person has his or her strengths and weaknesses. Perhaps their autistic child turns out to be a fantastic mathematician, first in class! And he is constantly praised for it, encouraged to help his friends - maybe he will do it without making eye contact, but he will do just fine. Or if many people find it hard to remember English words, and an autistic friend shell them out like nuts - he heard them once and it's stuck with him for life. Then other children have a very different view of that person who has amazing qualities. The family sees that they don't have to be so protective and protective of their child. You just have to let it go - it can.

4.5 Ways to help a child with autism learn social skills

Educators and parents are equally responsible for raising a child and preparing them for an independent life. Their cooperation is extremely important and necessary because teachers and parents can achieve great results only by working together. A good relationship between educators and parents can strengthen the cooperation between parents and educational institutions, which is very important for achieving common goals.

Success factors that can improve cooperation with parents raising children with autism spectrum disorder include: fostering trust in the educational institution, improving a positive atmosphere, information dissemination, and honest and positive communication.

10 Steps to Help Parents Raising a Child with ASD:

1. No matter how exhausted you are, "break free" and go out into the community with your child.
2. Seek advice at school by talking to educators.
3. Join parent self-help groups.
4. Offer to volunteer and be with your child in the classroom - this way you will get to know your child better needs.
5. You need to break away from home. A few hours of rest, environment will help you change, realizing your interests.
6. Try various methods of improving the child's behavior and learning, find the one that is most acceptable to you and the most efficient.
7. If you see that your child has sleeping, eating or other health problems, do not ignore them and seek help by contacting specialists.
8. Share your experiences with family members and friends. Don't be afraid to ask them for help.
9. Take care not only of your child, but also of yourself.
10. Autism is a marathon, not a sprint. You and your child deserve to be healthy and happy.

The role of parents

A parent can teach social skills firstly by working on social interaction skills and social communication with their autistic child. This can start by figuring out what they like (e.g., trains, elephants or planets), and building interactions around those interests.

It is important to note that there are multiple providers that can work together to form a plan around the goals you and your child have to achieve. They can provide a foundation to teach social skills and provide an outline the parent can use at home. Learning to move around the community safely without an adult foster's successful development of autistic children.

That's because it helps children develop important life skills. These include i.a:
- making decisions – for example, where to cross the road safely;
- solving problems – for example, what to do if their bus is late;
- finding their way around – for example, how to use a map app;
- using money – for example, when and how to use a card to pay for something;
- interacting with people in the community – for example, who to ask for help.

This is good for children's confidence now and for their independence in the teenage years. It can also be good for children's self-esteem and sense of belonging. Teachers consider that the most acceptable and commonly used forms of cooperation for involving parents in the educational process are: individual conversations and meetings, joint events, festivals and trips, and, to a lesser extent, educational activities and assemblies. Teachers indicate the following methods and means of cooperation with parents of children with autism spectrum disorder: various meetings, conversations, emails, assessment and discussion of educational achievements. According to the teachers, the success of cooperation with the family is determined by the following factors: fostering trust in the educational institution, improving the positive atmosphere and dissemination of information, and sincere and positive communication.

Consistency of cooperation between teachers and parents:
- Teachers and parents collaborate consistently, not episodically.
- For children with ASD, a consistently maintained routine is important, not haphazard.
- It is said that the consistency of a routine helps children with ASD believe it.
- Consistency helps to "get out" of unknowns and fears.

Continuity of cooperation between teachers and parents:
- Allows recording and development of learning and behavioral achievements of a child with ASD.
- Creates conditions for the search for effective educational environments, methods and their implementation.
- "Matures and nurtures" the relationship between teachers and parents.

Communication between teachers and parents:

- Children with ASD are limited in their ability to transfer information between school and home.
- Close communication by phone, e-mail or direct contact improves an overall information flow.
- Children with ASD may not communicate their parents' information they have received from teachers, or may pass a distorted or abstract message. Realistic situations can be presented as an example.

4.6 Solution

Meeting the special educational needs of a child with autism spectrum disorder is essential for cooperation between parents, teachers and professionals in the educational process. Educators and parents face a variety of cooperation problems, but each of them perceives them differently. Teachers and parents working together to educate children with autism spectrum disorder in an educational institution is a significant and necessary process for the well-being of the child.

As autism is a pervasive disorder, a child's education includes many areas. Parental behavior is also very important in changing a child's behavior, e.g.: active parental involvement in identifying and discussing a child's developmental difficulties. We know that a child can only be examined with their parents' consent and involvement. All recommendations for the child's education should be discussed and agreed with parents. Active involvement of parents in the educational process, their engagement and commitment to a unified educational plan are critical factors for successful work or therapy.

In summary, educating a child with ASD is a very long process that requires patience, understanding and love. This process must involve active participation of all above mentioned parties. It is only through mutual communication and cooperation that may bring any positive change.

To achieve good results in the learning process, the first step is to fully involve the child in all activities.

The second step is to get to know the child;

- All cooperating parties (parents, teachers, therapists etc.) including the child must be involved in the educational process;

- The organization of the child's activities should provide an appropriate (structured) environment and schedule of activities;
- Common requirements and coordination steps between different professionals and parents should be established;
- All cooperating parties should avoid stressful situations, maintain positive emotions, and provide constant encouragement and positive reinforcement to stir the child's involvement;
- Music and rhythm exercises are very suitable for promoting verbalization and vocalization.

4.7 Conclusions

1. Children with underdeveloped social skills are more prone to problematic behaviors and children with better-developed social skills show less troublesome behavioral patterns. Nevertheless, the relationship between specific social skills and the expression of problematic behaviors in different social situations may be influenced by environmental factors.

2. Autistic children tend to participate more willingly in organized activities and express their preferences when interacting with one person than when interacting in a group.

3. Autistic children tend to express the same problematic behaviors (aggressive behavior towards people and objects, tantrums, self-harm, self-stimulation and stereotypical behavior) when interacting with a single person and when participating in group activities.

4. Autistic children, compared to non-autistic children, are less likely to follow instructions and less likely to express wishes appropriately in one-to-one interactions and group activities; they are also less likely to participate in group activities and less likely to try to make contact.

5. Autistic children, compared to non-autistic children, show more stereotyped and self-stimulating behaviors when interacting with one person and participating in group activities.

6. Autistic children are perceived by parents and teachers as having more thinking, attention and general difficulties than non-autistic children.

7. Parents and teachers rate autistic and non-autistic children's social, thinking, difficulties with attention, aggressive behaviors and general difficulties in the same way.

8. Difficulties with attention in autistic children are closely related to following instructions and active participation in certain activities: the more attentional abnormalities they have, the less often they comply with instructions and the less

actively they participate in general activities; conversely, the fewer difficulties with attention they have, the more often they comply with instructions and the more actively they participate in general activities.

9. Autistic children's problematic behaviors (aggressive behavior towards people and objects, tantrums, self-harm, self-stimulation and stereotypical behavior) are not related to their social obstacles, difficulties with attention and thinking or aggressive behaviors.

Questions

1) What is socialization?

a. Socialization is the process by which people acquire knowledge, values, attitudes and behaviors, necessary for effective participation in society

b. Socialization is the process by which elder person acquire behaviors, necessary for effective participation in society

c. These are the attitudes and behaviors you were born with.

2) What are social skills?

a. Social skills are defined as the interaction between the person, environment and tools which are used to initiate and maintain vital interpersonal relationships.

b. Social skills are the skills you were born with and can't learn them.

c. Social skills are between family members.

3) What kind of cooperation/relationship is the most important when raising a child with ASD or ID?

a. Doctor and parents

b. Parents and teacher

c. Neighbords and parents

4) What are the main problems children with ASD encounter?

a. Bullying, lack of friendships, loneliness.

b. Lack of literature

c. Lack of movies

5) Do you think children with ASD require routine?

a. No, it's not important

b. It's necessary

c. Sometimes it might help

6) What are the alternative communication methods?

a. AAC communication

b. BBC communication

c. CNN communication

7) Which activities are more likely to fit autistic children?

a. Organized activities when interacting with one person

b. Organized activities with a group of people

c. Chaotic activities with a group of people

8) Autistic children are more likely to:

a. Follow instructions

b. Ignore instructions

c. Create new instructions

9) Methodology for teaching an autistic child:

a. Should be personalized, as one method can't fit all

b. Can be used step by step as it fits all

c. Should not include any guidelines that can be applied in the further therapy

10) How are autistic children perceived by parents and teachers?

a. As individuals who need more time for thinking, need more attention and have general difficulties

b. As individuals who react faster and need less attention

c. As individuals who think more, have fewer social difficulties and need less attention.

Bibliography

Adomaitienė, R. (2003). Specialiųjų poreikių asmenų ugdymo reformos nacionalinės strategijos projektas.

Aidukienė, T., Labinienė, R., (2003). Vaikų, turinčių specialiųjų poreikių, ugdymo tendencijų apžvalga tarptautiniame bei Lietuvos švietimo reformos kontekste (1990–2002). Specialiojo ugdymo pagrindai. Šiauliai.

Aksamit, D., Morris, M., Leunberger, J. (1987). Preparation of student services, professionals and faculty for serving learning disbled college students'. Journal of College Student Personnel, 28, 53-59.

Allington, R. L., Broikou, K. A. (1988). Development of shared knowledge: A new role for classroom and specialist teachers. The Reading Teacher, April 1988, 806–811

Ališauskas, A. (2001). Specialiųjų ugdymosi poreikių tenkinimas bendrojo lavinimo mokyklose: pokyčių analizė. Specialiųjų poreikių vaikų pažinimas ir ugdymas: Mokslinės konferencijos Specialiosios pagalbos teikimas bendrojo ugdymo įstaigose" medžiaga, 6–11. Šiauliai.

Ališauskas, A. (2002). Vaikų raidos ypatingumų ir specialiųjų ugdymo(si) poreikių įvertinimas. Šiauliai.

Ališauskas, A., Gerulaitis, D. (2003). Bendrojo ugdymo klasėje besimokančio specialiųjų ugdymo(si) poreikių vaiko socialinės-psichologinės charakteristikos atskleidimas. Tyrimo ataskaita. http://www.smm.lt/svietimo_bukle/docs/ATASKAITA-Alisauskas-2003.doc

Ališauskienė, S. (2002). Ankstyvosios reabilitacijos tarnybų veiklos optimizavimas konstruojant bendradarbiavimo su šeima modelį (Daktaro disertacija, Šiaulių universitetas, 2002).

Allport, G. W. (1935). Attitudes. In Murchison C. (Ed.). Handbook of Social Psychology, 788- 844. Worcester: Clark University Press.

Ambrukaitis, J. (1994). Specialiųjų poreikių vaikų ugdymo pokyčiai ir TEMPUS programa. Specialiųjų poreikių vaikų integracija: patirtis ir perspektyvos. Mokslinio-metodinio seminaro medžiaga, 6–15.

Angela M. Arnold-Saritepe, K. J. (2009). Chapter 12 Generalization and Maintenance.

Arent, K., Kabala, M., Wnuk, M.: Programowanie i konstrukcja kulistego robota społecznego wspomagającego terapie dzieci autystycznych. Ph.D. thesis, Politechnika Wrocławska (2005);

Baer, D. M. (2019). Applied Behaviour Analysis. In Companion Encyclopedia of Psychology (pp. 397-414). Routledge.

Bailey, J. S., & Burch, M. R. (2017). Research methods in applied behavior analysis. Routledge.

Barakova E. I., Gillesen J., Huskens B., and Lourens T., End-user programming architecture facilitates the uptake of robots in social therapies, Robotics and Autonomous Systems, vol. 61, no. 7, pp. 704–713, 2013;

Bauminger, N. ir Kasari, C. (2011). LonelinessandFriendshipinHigh-FunctioningChildrenwithAutism. ChildDevelopment, 71(12), 447-456. doi:10.1111/1467-8624.00156

Beaumont, R., & Sofronoff, K. (2008). A multi-component social skills intervention for children with Asperger Syndrome: The Junior Detective Training Program. The Journal of Child Psychology and Psychiatry, 49, 743-753

Board, R. R. (n.d.). TECHNIQUES FOR TEACHING GENERALIZATION.

Board, R.R. (n.d.) Techniques for teaching Generalization.

Catty Pratt, L. S. (2020). Applied Behavior Analysis. The Role of Task Analysis and Chaining. Indiana Institute on Disability and Community.

Cabibihan J.-J., Javed H., Ang M., and Aljunied S. M., Why robots? a survey on the roles and benefits of social robots in the therapy of children with autism, International Journal of Social Robotics, vol. 5, no. 4, pp. 593–618, 2013. [Online]. Available: http://dx.doi.org/10.1007/s12369-013-0202-2;

Cesarina et al. (2022). Erickson. Tratto da Gioco e interazione sociale nell'autismo:

Chandrasekaran, B. (2020). Development of A Scale to Identify Prompting and Fading Strategies for Individuals with Disability (Doctoral dissertation, ResearchSpace@ Auckland).

Colton M. B., Ricks D. J., Goodrich M. A., Dariush B., Fujimura K., and Fujiki M., Toward therapist-in-the-loop assistive robotics for children with autism and specific language impairment, in AISB New Frontiers in Human-Robot Interaction Symposium, vol. 24. Citeseer,2009, p. 25;

Cooper, J. O., Heron, T. E., & Heward, W. L. (2007). Applied behavior analysis (2nd ed.). Columbus, OH: Merrill Prentice Hall

Cooper, J. O. (2007) Applied behavior analysis (2nd.ed). Upper Sddle River: NL:Pearson Education Inc.

Degli Espinosa, F., Metko, A., Raimondi, M., Impenna, M., & Scognamiglio, E. (2020). A model of support for families of children with autism living in the COVID-19 lockdown: Lessons from Italy. Behavior Analysis in Practice, 13(3), 550-558.

Diane M. Browder, K. T. (2007). Training Teachers to Follow a Task Analysis to Engage Middle School Students With Moderate and Severe Developmental Disabilities in Grade-Appropriate Literature. FOCUS ON AUTISM AND OTHER DEVELOPMENTAL DISABILITIES, 206-219.

Dymond, S., & Roche, B. (2009). A contemporary behavior analysis of anxiety and avoidance. The Behavior Analyst, 32(1), 7-27.

Early Start Denver Model. (2022, November 3). Tratto da

Elliott, S. (1987). Children'sSocialSkills: AssessmentandClassificationPractices. JournalofCounseling&Development, 66(2). 96-99. Internet access: https://doi.org/10.1002/j.1556-6676.1987.tb00808.x

Fein, D., & Dunn, M. A. (2007). Autism in Your Classroom: A General Educator's Guide to Students with Autism Spectrum Disorders. Woodbine House. 6510 Bells Mill Road, Bethesda, MD 20817.

Fentress, G. M., & Lerman, D. C. (2012). A comparison of two prompting procedures for teaching basic skills to children with autism. Research in Autism Spectrum Disorders, 6(3), 1083-1090.

Fisher, W. W., Piazza, C. C., & Roane, H. S. (Eds.). (2021). Handbook of applied behavior analysis. Guilford Publications.

Foxx, R. M. (2008). Applied behavior analysis treatment of autism: The state of the art. Child and adolescent psychiatric clinics of North America, 17(4), 821-834.

FutureWellness. American JournalofPublicHealth, 105, 2283- 2290, internetaccess: https://doi.org/10.2105/AJPH.2015.302630.

Gordan, M., & Krishanan, I. A. (2014). A review of BF Skinner's 'Reinforcement theory of motivation. International Journal of Research in Education Methodology, 5(3), 680-688.

Griffin, C. (2020, November 4). What is a Prompt Hierarchy in Applied Behavioral Analysis? DataFinch Technologies

Hao Karen: Robots that teach autistic kids social skills could help them develop, MIT Technology Review

Internet accesshttp://ebook.vlk.lt/e.vadovas/index.jsp. [visited 2022.10.29]

Internet access https://www.who.int/news-room/fact-sheets/detail/autism-spectrum-disorders. [visited 2022.10.29] AutismSpectrumPrevalenceStatistics.

Ivoškuvienė, R. ir Balčiūnaitė J. (2002). Education of autistic children. Šiauliai: Šiaulių universiteto leidykla.

Iwata, B. & Smith, R. (2008). Negative Reinforcement. In J. Cooper, T. Heron, & Heward, W. (Eds.), Applied Behaviour Analysis (pp. 291-303). New Jersey: Pearson Education.

Jones D. E., Greenberg M., Crowley M., (2015). Early Social-Emotional Functioning and Public Health

Jones, E., ir Carr, E., Feeley, K. (2006). Multiple Effects of Joint Attention Intervention for Children with Autism. Behaviormodification, 30. 782-834. doi: 10.1177/0145445506289392.

Kazdin, A. E. (2002). Applied Behavior Analysis. Encyclopedia of Psychotherapy, 1, 71-94.

Kregal, P.W. (2008). Pro.ed. Retrieved from poedinc.com:

Leach, D., & Duffy, M. L. (2009). Supporting students with autism spectrum disorders in inclusive settings. Intervention in School and Clinic, 45(1), 31-37.

Leaf, J. B., Leaf, R., McEachin, J., Taubman, M., Ala'i-Rosales, S., Ross, R. K., ... & Weiss, M. J. (2016). Applied behavior analysis is a science and, therefore, progressive. Journal of autism and developmental disorders, 46(2), 720-731.

McDonnell, J. &. (1988). A comparison of forward and concurrent chaining strategies in teachnig. Research in Developmental Disabilities, 9(2), 177-194.

McNerney, T.S.: Tangible programming bricks: An approach to making programming accessible to everyone. Ph.D. thesis, Massachusetts Institute of Technology (1999);

Meadan, H., Ostrosky, M. M., Santos, R. M., & Snodgrass, M. R. (2013). How can I help? Prompting procedures to support children's learning. Young Exceptional Children, 16(4), 31-39.

Michal Gordon, Edith Ackermann, C.B.: Social robot toolkit: Tangible programming for young children. HRI15 Extended Abstracts (03 2015), Portland, OR, USA

Miltenberger, R. (2008). Behaviour Modification. Belmont, CA. Wadsworth Publishing.

Murphy, A. T. (1981). Special children, special parents: Personal issues with handicapped children. Englewood Cliffs, NJ: Prentice Hall.

Nickerson, C. and McLeod, S., 2022. Positive Reinforcement: What Is It and How Does It Work?. [online] Simplypsychology.org. Available at: <https://www.simplypsychology.org/positive-reinforcement.html> [Accessed 13 October 2022].

Pot, E., Monceaux, J., Gelin, R., Maisonnier, B.: Choregraphe: a graphical tool for humanoid robot programming. In: Robot and Human Interactive Communication,2009. RO-MAN 2009. The 18th IEEE International Symposium on. pp. 46–51.IEEE (2009);

Kregal, P. W. (2008). pro.ed. Retrieved from poedinc.com: https://www.proedinc.com/

Schorr, B., 2021. Positive Reinforcement and Autism - Hidden Talents ABA. [online] Hidden Talents ABA. Available at: <https://hiddentalentsaba.com/positive-reinforcement-autism/#What_Is_the_Importance_of_Positive_Reinforcement_in_Autism> [Accessed 12 October 2022].

Taylor, S. S. (2022). Reinforcement.

Team at Elemy. (2021, June 1). What Is Prompting Hierarchy in ABA Therapy? The Elemy Learning Studio. https://www.elemy.com/studio/aba-terms/prompting-hierarchy/

Valk, L.: LEGO MINDSTORMS EV3 Discovery Book: A Beginner's Guide to Building and Programming Robots. No Starch Press (2014);

Visconti, P. M. (2007). Immagini per parlare. Perscorsi di comunicazione aumentatita alternative per perone con disturbi autistic (.184).

Wainer, B. I. (2013). Generalization and Maintenance. In P. B. B.A., Encyclopedia of Autism Spectrum Disorders (pp. 1419-1423). New York: Springer, New York, NY.

Werner, L., Campe, S., Denner, J.: Children learning computer science concepts via alice game-programming. In: Proceedings of the 43rd ACM technical symposiumon Computer Science Education. pp. 427–432. ACM (2012);

Wiering, M. A., & Van Otterlo, M. (2012). Reinforcement learning. Adaptation, learning, and optimization, 12(3), 729.

Wolfe, P., & Neisworth, J. T. (2005). Autism and applied behavior analysis. Exceptionality, 13(1), 1-2.

Zubrycki I., Kolesiński M., Granosik G.: A participatory design for enhancing the work environment of therapists of disabled children, proc. 25th IEEE International Symposium on Robot and Human Interactive Communication (RO-MAN), pp. 781-786, ISSN: 1944-9437, 26-31 Aug. 2016, New York, 2016;

Zubrycki I., Kolesiński M., Granosik G.: Graphical Programming Interface for Enabling Non-technical Professionals to Program Robots and Internet-of-Things Devices, in: I. Rojas et al. (Eds.): IWANN 2017, Part II, LNCS 10306, pp. 620–631, 2017, DOI: 10.1007/978-3-319-59147-6 53;

Videos:

https://www.youtube.com/watch?v=imkbuKomPXI

https://www.youtube.com/watch?v=0OI187Ip4VQ

http://wiki.scratch.mit.edu/wiki/Hardware_That_Can_Connect_to_Scratch

https://autismspectrumnews.org/using-technology-to-foster-social-interaction/;

https://brookfieldsschool.org/curriculum/how-we-teach/reach-relationship-education-for-children/;

https://caringhealthcaresc.com/four-ways-communicate-nonverbal-special-needs-child/;

https://www.educatall.com/page/1392/Social-skills-and-children-with-special-needs.html;

https://www.friendshipcircle.org/blog/2013/04/09/five-toys-that-can-help-with-social-development/;

https://specialedresource.com/help-your-special-needs-child-improve-social-skills;

https://www.specialstrong.com/top-10-social-skill-activities-for-autism-to-help-with-sensory-issues-in-children/;

https://roboterapia.eu/en/index.html
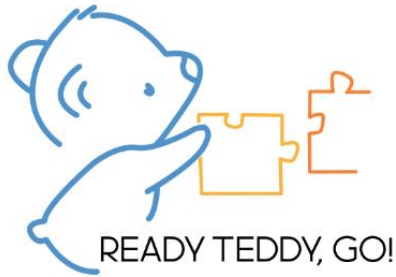
https://www.youtube.com/watch?v=UVKb_BXEp5U

Answers

Module 1 1.b; 2.a; 3b; 4.c; 5.c; 6.c; 7.b; 8.d; 9.c; 10.b; 11.b; 12.b; 13.b; 14.b; 15.c

Module 2 1.a; 2.c; 3.c; 4.b; 5.a; 6.c; 7.b; 8.a; 9.c; 10.b

Module 3 1.c; 2.a; 3.c; 4.a; 5.c; 6.b; 7.c; 8.a; 9.b; 10.a

Module 4 1.a; 2.a; 3.b; 4.a; 5.b; 6.a; 7.a; 8.a; 9.a; 10.a

READY TEDDY, GO!

PROJECT INFORMATION

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SUB-PROGRAMME: SCHOOL EDUCATION

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