

INVESTIGATIONS

TAKEN FROM RICHARD HIRSTWOOD'S COURSE NOTES AND REWRITTEN AND PUBLISHED 2009



Investigations for vision, hearing and smell

These investigation sheets are based around the A.C.A, a communication assessment designed by Judith Coupe O'Kane, Melland School in the mid 1980's. So the idea is not new, but still the assessment format of the A.C.A. is accessible and understandable to many practitioners and can be a valuable tool when obtaining baseline sensory information about high dependency or non verbal students on the autistic spectrum.

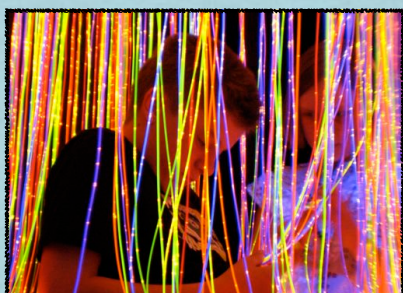
Why would you use the sensory investigation?

I should point out that the investigations are designed to be used with students who are non-verbal and have limited formal communication skills. I use the term 'student' to refer to any person old or young. Although the format could

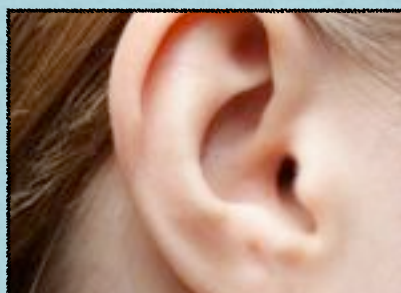
be used with more able students it relies on your interpretation of the student's physical reactions so is especially adaptable to higher dependency students. The sheets are designed to build up your knowledge about a persons sensory skills and use the information to assist either yourself or a specialist in determining the ability of the student.

The reasons why you may use these investigations are:

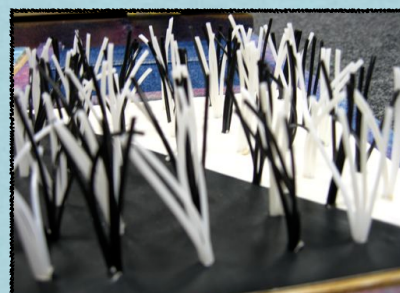
- You suspect the student has a sensory loss, but you have little or no information.



VISUAL INVESTIGATION It is very important to understand how a non verbal student sees the world around them.



SOUND INVESTIGATION Hearing loss is much more difficult to detect and this investigation will help those working with non verbal students, young or old.



TOUCH INVESTIGATION Your sense of touch is sending information to you all the time but how will someone assess touch. Is the student tactile defensive?

- The student has a sensory loss but you feel the information is outdated.

The three investigations in these notes are not strict assessments as such. If you are familiar with the A.C.A, you will find that they loosely follow its principles. However, instead of being a communication assessment like the original A.C.A. these are designed to investigate specific sensory areas. This said, I could assure you that along the way you will learn many things about the way a student does communicate.

I prefer to call them investigations because people often feel they are not qualified to carry out formal assessments. However, as practitioners working directly with the students, whatever age or difficulties, you are most likely to be the person who knows the student best.

Do not be afraid to use the sheets to gather information about the student, but do not use these sheets just once and do not think that they give you all the information you need. Without the aid of these sheets, a casual observation will give you plenty of information, however these may assist and offer the basis for a more formal basis to enable you to confirm your theories.

What are the dangers of unskilled people doing visual investigations?

- Many people will have different views about the student's abilities.
- People may jump to conclusions, which are wrong!
- Some people may not feel confident about the investigation itself.
- You may misinterpret the information either in the assessment itself or while reviewing the information.

There are many ways these investigations can go wrong, but don't let that put you off! The success will depend on what you actually do with the information. It is also important to note that the investigations need to be ongoing.

I suggest you keep going until you feel you have the information you need or have found that this format is not going to work for you. You should always review your information, to note any changes in a condition.

The investigations should be used in different places, not just the multi sensory room or studio. If, after you have used any of the investigation sheets, you feel there is an area of concern, I strongly recommend that you contact the appropriate organisations to obtain a formal assessment.

How do the sheets work?

They are designed to be completed either with simple ticks to indicate a reaction. For more experienced practitioners they could be modified to enable the use of letters in the column to indicate awareness levels. However, simply using the tick method may be easier for most.

For example: working with the visual investigation with a non-verbal, PMLD student you should first of all communicate what is going to happen to the best of your ability. Then you could begin by using a torch, however any appropriate item will do.

You could attempt to get the students interest by moving the torch slowly, directly in front of the eye. Start about 1 meter away, do not shine the torch directly into the eyes and do not hold the torch too close, as this could be painful for some students. Watch the student's eyes and general body movement to establish if there has been a reaction to the light. Sometimes you will be looking for a very small body movement or change in position to indicate an awareness to the light.

If you are definitely getting a reaction note it on the sheet with a tick ✓ alternatively an arrow pointing upwards ▲ would indicate an increase in the noted activity as ▼ would indicate a decrease in the activity. Look at the example on the next page:

Investigation sheet example - vision

Face				
Smile	▲			
Frown				
Grimace				
Little change				
No change				

Head eye movement				
Blinks at the light	✓			
Blinks at a sudden approach	✓			
Turns to source of light				
Closes eyes				
Shows eye movement				
Notices light to the side L/R				
Notices light above/below A/B				
Looks for source of light				
Fixates on the light	✓			
Follows up and down (tracking)				
Follows side to side (tracking)				
Looks at the light from back				
Looks for disappearing object				
Is there a preferred direction	<i>Front</i>			
Head movement increase				
Head movement decrease	✓			
Maintained visual contact for				

Working with the torch we noted that the student reacted to the light when it was shone from the front. We got a smile and the student, who blinked and fixated on the light. In the session we may have tried moving the torch from left to right, front to back etc, but there appeared to be little reaction when the torch was off centre or moving.

This could indicate that in this session the student appeared only to have central vision. However, you would need to validate this in many more sessions because you may find

that the student did not react because of positioning or movement difficulties in this particular session.

All the investigations rely on trial and error and your interpretation of the behaviour, or movement.

The investigation does not have to be in a formal setting. You may be observing the student whilst another activity is in progress, for example a story session in the hall.



The Visual Investigation

It is common to hear that we 'do visual stimulation' with students with visual impairments, and it will prove to be beneficial for all ages. But to do this we must find something which the student is interested in looking at! We must also investigate how the student sees. I would always recommend a formal visual function assessment by a skilled assessor, but the reality is that these people are often in short supply and not available to you.

So how do you investigate what the student can see at the moment?

Using a vast armoury of appropriate visual stimulus in the multi sensory room or studio we must try to find out. Toys, torches, every day items, visual equipment such as projectors, fibre optics and even bubble tubes could be used to build up a picture of the students visual skills.

What you will not be able to do without serious training is to identify that the student definitely has macular degeneration or some other visual impairment. But you may notice behaviours which indicate that he/she sees better from the side (which may indicate macular degeneration).

Some helpful tips for your visual investigations.

- Find things, which the student likes or wants! You would not look at things which don't interest you!
- Use favourite objects then move on to other things.
- Make sure the student is in a comfortable and appropriate position to access the light.
- Work at the student's own pace and give them plenty of time to respond.
- If the student shows signs of distress, stop!
- If you are giving verbal prompts make sure the student is reacting to the light, not you.
- Use torches to start with, you may find them easier to manipulate. Then move on to projector images, big, small, close, far, dull and bright.
- If using visual equipment with fans, make sure the student is reacting to the light not the sound.
- Make sure there are no other sound interruptions.
- Use bright objects and contrasts then reduce the brightness and contrast.
- The student may react when the light goes away, rather than when it appears.
- Not all students will see things directly from the front.
- Work in an area without too much visual clutter.
- It does not have to be really dark in the room to do an investigation and try varying background lighting.
- Use reflected light as well as direct lights - survival blankets etc.
- Will size, colour, shape as well as intensity make a difference?
- You could try more than one object.
- Watch both eyes as a visual impairment often affects just one eye.
- You sometimes find a different visual impairment in each eye.
- Short and regular investigations will be better than one long session every week.

THE VISUAL SKILLS

HIRSTWOOD TRAINING, APRIL 2009



The Visual Skills we use

Awareness

(Does the student respond in any way to visual stimulus?)

Fixation

(A more sustained and constant response to a visual stimulus)

Tracking

(The ability to follow moving objects, both horizontal and vertical)

Convergence

(The ability to maintain focus on an object as it approaches or moves away)

Accommodation

(Focus on objects at varying distances)

Eye contact

(Sustained periods of looking at people and objects)

Hand eye co-ordination

To look at an object and to reach with the hand)

Scanning

(The ability to search for an object)

VISUAL INVESTIGATION



Students name:
Investigator:

Date of session					
Time of Session					
Where					
Background lighting, dark/light					

Students mood					
Position i.e. chair/mat etc					
Glasses worn					
Type of light source					

Light location in relation to the student

Variable distances					
Proximity e.g. 10cm/1m					
From front/back F/B					
From left/right L/R					
Up / down U/D					
Tracking/stationary T/S					

Work with the light source and note the reaction?

Face					
Smile					
Frown					
Grimace					
Little change					
No change					

Head/eye movement?

Blinks at the light					
Blinks at a sudden approach					
Turns to source of light					
Closes eyes					
Shows eye movement					
Notices light to the side L/R					
Notices light above/below A/B					
Looks for source of light					
Fixates on the light					
Follows up and down (tracking)					
Follows side to side (tracking)					
Looks at the light from back					
Looks for disappearing object					
Is there a preferred direction					
Head movement increase					
Head movement decrease					
Maintained visual contact for					
No change					
Increase - full or part					
Decrease - full or part					
Other					



Vocalisation?

None					
Made sounds (any)					
Contented vocalisation					
Discontented vocalisation					

Did the student?

Notice the light source					
Fixate on the light source					
Track the light source					
Variable or fixed distance					

If appropriate: was the student? (For Vision for doing readers)

Aware of the light					
Attend to the light					
Localise the light					
Recognise the light					

Did the student?

Enjoy the session					
Dislike the session					

Does the student?

Make eye contact					
Smile or otherwise on eye contact					
Keep visual contact during communication					
Shows visual recognition of people Y/N what distance					
Observes objects at what distance					
Watch his or her hands					
Holds objects to view them at what distance.					
Looks for a disappearing object					

Notes

IF YOU HAVE ANY FURTHER OBSERVATIONS YOU SHOULD WRITE THEM IN THESE COLUMNS					
Date					
Date					
Date					
Date					
Date					
Date					

SOUND INVESTIGATION

Feeling, emotions, knowledge, information, enthusiasm and enjoyment can be established, strengthened and developed through the medium of sound. Our hearing is used to gain vast amounts of information about our environment and other people. If you close your eyes and listen you will notice that there is a vast, cascading stream of sounds around us, all with something to offer. For this reason it is very important that we try to establish what a student can hear.

Listening and hearing

There is a difference between listening and hearing. When we 'listen' we are focusing on the sound. Sounds we 'hear' are often placed in the background but not ignored.

- Listening - Sounds we react to.
- Hearing - Sounds we monitor.

When we listen to a sound we may need to act on, we evaluate and rationalise the sound. We have a massive memory of sounds built in to our brain and we understand their meaning and how they can affect us. A change in a familiar sound will spark interest from the listener. Sometimes we only really notice sound when it stops! We also expect the right noises to come from the right objects. If they do not, then the sounds may invite more investigation.

When we hear a sound, we very quickly evaluate:

- How loud is it?
- Is it high pitch or low pitch?
- Where is it coming from?
- Is the sound moving?
- Is there more than one sound?
- Is it a friendly or unfriendly sound?
- Will it affect me?
- Do I need to do anything about it?

Why use this sound investigation?

If you suspect a student has a hearing loss it is important that we investigate what a student can hear. Even if you suspect a hearing loss it is unlikely that the student will hear nothing, there is often residual hearing, so what can they hear? We should try to ascertain the most accessible volume, proximity and frequency of sound the student enjoys. This information can be used to give a student better access to the curriculum or social skills activities.

How could you use the sound investigation?

Whatever you use to make the sound, make sure it has little or preferably no visual content. This can be very difficult, so it may be advisable to use an area which offers little visual interest. You could try music playing on a portable tape or CD to the left of a student then after say 2 minutes move the sound to the right. This could also be done with the balance control on a fixed stereo system. What we are doing is changing the location of the sound. We may then assess the student to see if they have noticed the change in direction.

Some helpful tips, for your sound investigations.

One problem with investigating hearing is that our ears don't move around like eyes, so compared to visual awareness, sound may be difficult to detect. A student may react if the sound is presented from the left or right, or if it is high or low frequency. There are many variables! If a student has communication difficulties you will need to study the body language, no matter how slight.

- Find sounds that will interest the student. You would not listen to things, which don't interest you!
- Use favourite objects then move on to other things.
- Make sure the student is in a comfortable and appropriate position to access the sound.
- Work at the student's own pace and give them plenty of time to respond.
- If the student shows signs of distress, stop!
- Try to use an area that will have no sound interruptions.
- Try to use an area where there are no echoes.
- Some students may have a delayed reaction to sensory stimulus so time may need to be given to listen to the sound.
- Look for even the slightest movement or consistent response to a particular sound.
- Does the student 'still' when a sound is made?
- Does the student search for the sound?
- Does the student move to the sound before locating it visually?
- Sometimes turning the sound off can have a greater effect than turning a sound on!
- Remember if the student has a visual impairment, they may not even attempt to look for the sound.
- The student may be reacting but you may have to look very closely to notice!

SOUND INVESTIGATION



Students name:
Investigator:

Date of session					
Time of Session					
Where					
Background lighting, dark/light					
Background sounds (if any)					

Students mood					
Position i.e. chair/mat etc					
Hearing aids worn					
Type of sound source					
If music state the group or artist					
Name the song					
The type of music					

Sound location in relation to the student

Proximity e.g. 1m / 4m					
From the front or back F/B					
From the left or right L/R					
Is the volume low/med/high					
High frequency or low H/L					

Work with the student and note the reactions in the following areas

Face

Smile					
Frown					
Grimace					
No change					
Other					

Head/Eye Movement

Looks around the room					
Looks at people					
Looks for the sound source					
Looks up and down					
Closes eyes					
Head movement increase					
Head movement decrease					
Closes eyes					
No change					

TACTILE INVESTIGATION

Touch is for many of us a sense that we tend to take for granted, yet without it how depressing and empty our lives would be. Who can forget a mothers hug, a lovers touch, a friends reassuring pat on the shoulder, these are just some of the range of touches we humans use. There are also other aspects to touch, the feel of objects around us. We are sure you may have felt the frustration walking around an exhibition or museum and not being able to touch and explore the exhibits. Why is that? After all you may be able to see, hear and even smell them! What is it that touch can do that other senses can not?

The answer is that touch confirms in a concrete way what we are seeing and hearing. We achieve an enhanced sense of size, texture and shape of the world around us, not easily gained with vision alone. Often when we look at an object we need to view it from different angles to appreciate what the object may look like as a whole, as some of the dimensions of the object viewed may be obscured from our immediate viewing point.

Touch enables us in partnership with our vision to grasp quickly unseen dimensions and shapes of objects. For children and adults with sensory loss, particularly of vision, touch may be the only means available for mobility and communication with others and the environment.

Once we have a recording of the person's response to touch or even experience of reaching out to feel for things we can develop these skills, particularly with blind or visually impaired children or adults. One of the ways we may do this is by using a tactile panel, which has various tactile routines running along a corridor to the sensory room. Within the multi sensory room, a tactile wall with rewards for reaching points along it's trail such as a light, a buzzer or a breeze from a fan will continue this theme.

By generalising these skills we can teach a person to explore walls and landmarks as part of a mobility program to access living and working environments. These landmarks may be naturally occurring clues such as window frames and doors or even specially provided tactile landmarks such as environmental objects of reference on doors or a handrail.'

From: Hirstwood and Gray 'The Practical Guide to Multi Sensory Rooms' (1995)

Using objects which light up or make a sound may encourage the student to use their sense of touch to explore, however remember some students may be tactile defensive, so exposure to some items may need to be very gentle.

Using your hands may be the most obvious first point for interaction with tactile objects, however if working with individuals with PMLD or complex needs you will also stimulate touch through other parts of the body.

If a student is at an early stage of tactile learning you may let students feel different textures on students discover furry and soft on the face. The student may be encouraged to move on to using their hands to experience touch. If you are using two objects at one time you could make them contrasting textures. Alternatively, objects, which relate to each other, could be an idea. Object matching through touch may encourage a students understanding of symbols and sign.

Some helpful tips for your tactile investigation.

- The following sheets could be used in other areas, as well as the multi sensory studio.
- When using this investigation ensure that no other activities or distractions are present other than the tactile object itself.
- Ensure that based on your knowledge of the student's visual, hearing and motor abilities, that he or she is in the best position to access the object.
- Ensure there are no other distractions, encouragement is okay but don't over power the student.
- If the student has a visual impairment you may have think about positioning. E.g. left, right, close or far away.
- You may need to consider a colour contrast between the object and background surface.
- Draw the student's attention to the object and do not worry about using other clues such as the students name to engage them with the object.
- Sounds, light even smells are acceptable to encourage the student's interaction.
- You are allowed to guide the student's hand to the object.
- Find something, which you think may interest the student.

The objects used in the room could be toys, or other gadgets! But don't forget tactile walls, switches, fibre optics and other things based in the room.

Coupe J & Levy D 'The Object Related Scheme Assessment Procedure: a cognitive assessment for developmentally young children who may have additional physical or sensory handicaps' (1985) in British Institute of Mental Handicap Vol 13

Uzgiris (1967) Uzgiris and Hunt (1975) Origin Unknown

Oregon Project for Visually impaired and Blind Preschool Children, Fifth edition from Jackson Education District Service, 101 N. Grape St, Medford, OR 9701

Hirstwood R & Gray M (1995) 'The Practical Guide to Multi Sensory Rooms' from TFH

TACTILE INVESTIGATION



Students name:
Investigator:

Date of session					
Time of Session					
Where					
Background lighting, dark/light					

Students mood					
Position i.e. chair with tray/mat/wedge etc					
Glasses worn					
Tactile object used					

Location of object in relation to the student

Within reach of hand					
Face					
Feet					
Other part of the body					

Introduce the object and note the reaction?

Face

Smile					
Frown					
Grimace					
Little change					
No change					
Other					

Head/Eye Movement

Shows eye movement					
Looks for the object					
Follows the object (tracking)					
Maintained visual contact for					
Looks for disappearing object					
Closed or opened eyes					

Body movement? (Name the part of the body if appropriate)

No change					
Increase – full or part					
Decrease – full or part					
Other					

Vocalisation?

None					
Made sounds (any)					
Contented vocalisation					
Discontented vocalisation					

Working with the object in the students hand note the following did the student

Notice the object					
Tolerate the object					
Touch the object independently					
Hold momentarily					
Retain the object					
Hit the object					
Hold the object					
Hold and visually inspect					
Hold the objects and mouths					
Shake the object					
Manipulates the object					
Move object from hand to hand					
Looks to reach the object					
Turns the object to view					
Unintentionally drops object					
Intentionally drops object					
Throws the object intentionally					
Uses object appropriately					
Gives the object to you					
Shows the object to you					
Names the object					

If appropriate did, or was the student?

Aware of the object					
Attend to the object					
Localise the object					
Recognise the object					

Did the student?

Enjoy the session					
Dislike the session					

Notes
