



Karate and Autism

Advice for Instructors

ENGLISH KARATE



FEDERATION

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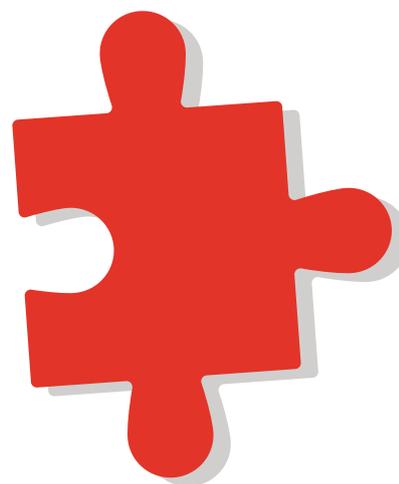
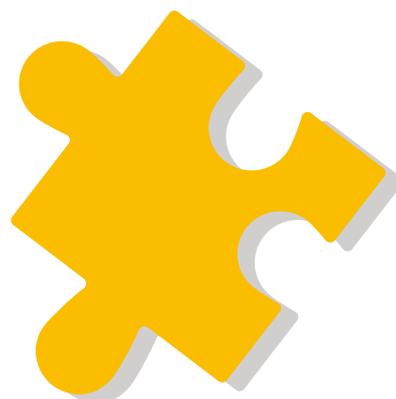
Acknowledgement

This guide has been developed thanks to the utilisation of existing academic research and the hard work and dedication of Sensei Goodbarn who undertook a Masters thesis in Autism and Karate at Northumbria University. It is with thanks that the EKF received this dissertation for the advancement of those with autism in karate, their parents, peers and instructors. Sensei Goodbarn's research utilised a hybrid methodological approach but a key feature was interviews and observation of autistic children training in karate. Having trained for over 50 years and coaching for over 30 years Sensei Goodbarn is well-placed to advise on autism and karate – especially with her formal qualifications and the number of students with autism who have attended her classes and excelled over the years.

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What is Autism?

Autism can be categorised as a 'lifelong developmental disability that affects how a person communicates with and relates to other people'.¹ Autism is a spectrum disability which means that there are differing degrees of disability and functioning levels thus levels of support are required on an individual basis. Autism will affect individuals in profoundly different ways but there are inherent similarities regardless of where somebody 'sits' on the spectrum. The disability is often shortened to ASD and will be used as such throughout this guide.

Autism Spectrum Disorder



Level 1

High functioning autism

Requiring support;
Difficulty initiating social interactions;
Inflexibility of behaviour;
Difficulty switching activities; Problems with organization.

Level 2

Autism

Requiring substantial support; Marked deficits with social interactions;
Inflexibility of behaviour;
Difficulty or distress coping with change; Repetitive behaviours.

Level 3

Severe Autism

Requiring very substantial support; Severe deficits with social interactions & communication; Inflexibility of behaviour; Extreme difficulty or distress coping with change' Repetitive behaviours interfere with functioning.

Is Asperger Syndrome a form of Autism?

Yes, Asperger syndrome is a form of autism. Having Asperger Syndrome means that those with the condition will have fewer problems with speech but share many of the similarities with other autism sufferers in terms of interpreting and processing language. It can often be a condition that is accompanied by dyslexia and dyspraxia.

How common is it?

Autism affects approximately 700,000 people in the UK which is nearly 1 in every 100 people. Following a scoping exercise – it is estimated that there are hundreds of students within the EKF with autism.

Access to sports and karate

It has been widely documented that people with autism have difficulty in accessing sport and leisure activities as their specific strengths, difficulties and learning styles are not often considered and some sports pose more acute problems for access due to the nature of the disability.

Sports like football for example require people with autism to perform as team members and the success or failure of the team is dependent on individuals being able to work together for a specified aim. Social interaction, communication and flexibility of thought (particularly useful for kumite) are cited by academics² as the main features of impairment – also called the Triad of Impairments – amongst those on the autistic spectrum. This can therefore lead to social isolation and a reluctance to engage with others and an avoidance of group situations. This in turn can also lead to depression during and beyond adolescent years.³

Hence those students who have an ASD may often prefer sports with structure, repetition and involving no requirement for extensive social interaction with other people. Academics cite a number of sports where autistic people can excel including golf, ballet, horse riding, running and swimming.⁴ However, karate strikes a fantastic balance between the two as participation involves social contact but to a lesser extent than team sports.

Overview of disability

Alongside the triad of impairments, the Sensory Integration International's findings also document that those on the spectrum often suffer with physical clumsiness (or apparent clumsiness known as dyspraxia), over-sensitivity to touch, sight, sound and a tendency to be easily distracted.⁵ These are features which can be inherent in karate as will be seen later.

Other areas in which the disability manifests itself which karate instructors ought to be aware of include:

- Seemingly irrelevant answers
- Interrupting
- Using over formal language which may mask their level of comprehension
- Failure to realise that whole class instructions apply to them

Nonetheless, it is not all negative for those with autism or Asperger's. Key aspects of both of these conditions can also have inherent strengths in relation to karate. The strengths and abilities associated with autistic spectrum disorders (ASD) are often under-utilized or simply not recognised. Indeed, with appropriate instruction these strengths can be enhanced to increase participation in karate.

Why karate?

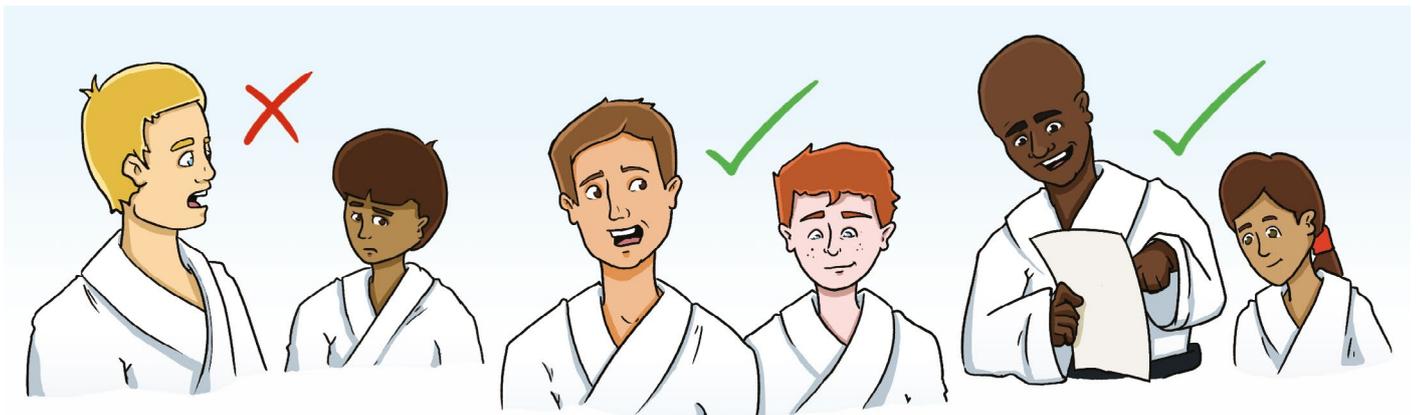
During research, autistic children have documented why they chose to undertake karate. Below are the responses:

Sample responses from children	Sample responses from parents
Fitness	Increase general fitness, stamina and balance
Self-defence	Improve co-ordination
To make friends	Engage in group activity for social purposes
Like the structure routine and repetition	Structured teaching
Visual nature of karate	Routine and repetition
Uniformity - everyone looking the same	Discipline
Neat and disciplined	Visuality

This shows that karate is a great sport for people on the autistic spectrum and provides multiple benefits which other sports may not offer or offer to a lesser extent. Karate for those with ASD can be a place for them to flourish and excel both in the sporting sense and socially.

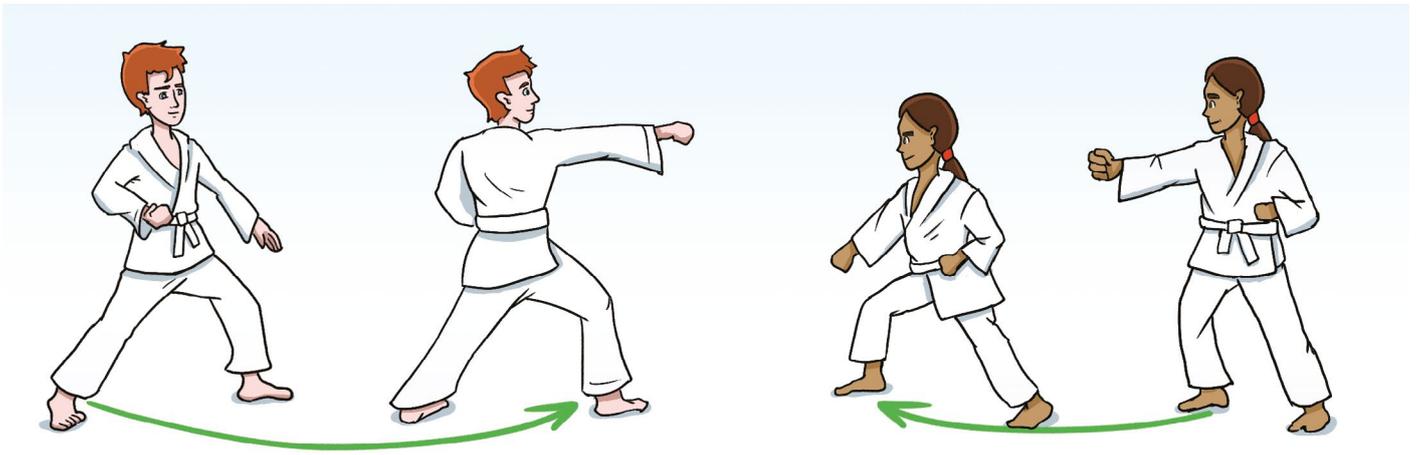
Eye contact

The anxieties that autism brings means that making eye contact can often be uncomfortable and distressing for the students. It is crucial for karate instructors to note that an inability to make eye contact does not mean that the student is not listening. Indeed, those with autism often look past (or appear to ignore) people or objects and often understand more easily when dealing with things indirectly i.e. looking or listening peripherally.⁶



Physical effects of ASDs

Karate involves preparing for the next move in basics or kata. Those with autism demonstrate a lack of anticipation whilst preparing movement and those with Asperger's have a deficit in motor programming. Motor programming refers to an abstract representation of movement that centrally organizes and controls the many degrees of freedom involved in performing an action. The nervous system signals do not respond as well to planning or guiding movement.



Other inherent disabilities specifically for karate and in particular basics and kata include difficulties with postural stability⁷ varying degrees of dystonia or altered muscle tone, bradykinesia/abnormal slowness of movement, hyperkinesia – altered increase in muscular activity involving tremors and spasms.⁸ These physical manifestations of the mental impairment may result in difficulties in karate. Instructors should take these into consideration when training and examining.

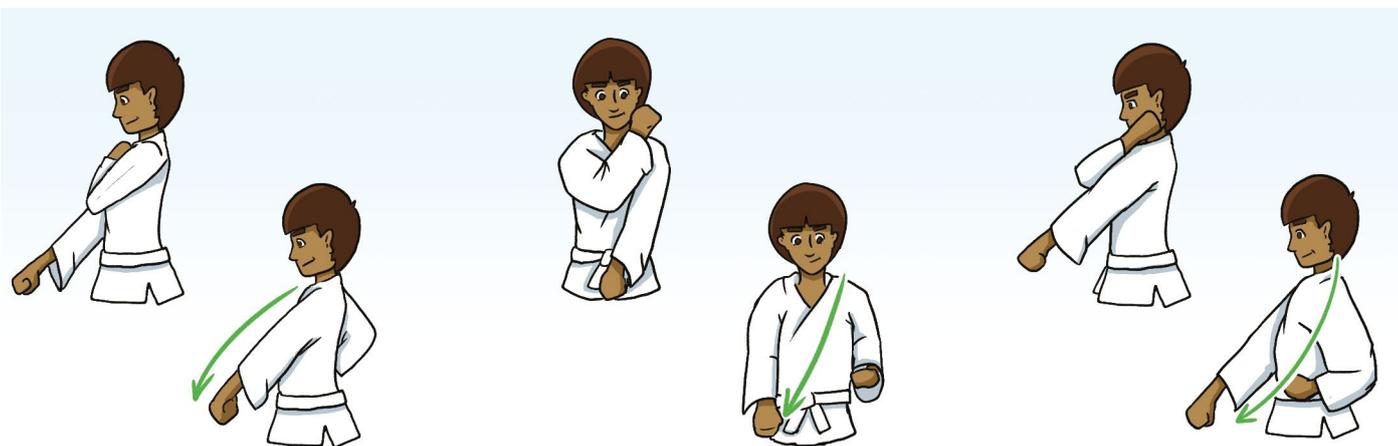
Sequential learning – benefits for basics, kata and kumite

Those with an ASD have great ability when it comes to learning long and complex routines through sequences and via visual means (having routines modelled or displayed in picture form) as well as persevering with acute attention to detail until a sequence is complete. Drawing upon fellow martial art Tae Kwon-do, they document that those with ASD, 'do well with the predictable routines, repetitive movements and instructions that are precisely broken down into small steps'. It is with this in mind that those with autism can be very gifted karateka in the kata discipline in particular.

Moreover, although this is a skill generally attributed to people with Asperger Syndrome rather than those with autism, one student talked of 'visualising the shape' made on the floor during kata. Keeping that picture in mind, helped both students to remember the movements needed to form the shape.

The efficacy of sequential teaching and learning is replicated in the karate syllabus and provides a structured way of enabling ASD students to learn and develop in a step-by-step approach. This is extremely beneficial, 'new skills are learned more easily if they are broken down into simple steps, instead of being presented all at once. Autistic children are especially liable to be upset by failure and making sure that the child can succeed with each small stage is a good way of avoiding this problem'.⁹ Therefore, instructors could well break down either basic, kata or indeed kumite techniques into bite-size chunks as to aid ASD students but also the class as a whole.





Beginners learn single arm and leg techniques which are practiced repetitively moving forwards and backwards. Techniques are broken down into component parts, with instructors demonstrating each step and gradually linking them until students can perform the whole technique. Initially, techniques are performed by individuals with no need for partners, allowing students to work at their own pace and within the limits of their capabilities. Although, working with a partner is introduced prior to students taking their first grading, they will have already learned the basic techniques and the order in which they occur, which makes the process predictable. This may not totally eradicate anxiety experienced when having to face another person, “but it certainly lessens it”. During research, one student reported ‘being slowly introduced to the basic moves before we did anything with partners, worked for me and made it bearable’.

**“I like to be shown
the whole thing, then
have it broken up, so that
I can concentrate on
the details”**

Beginners are also taught to combine two previously learned arm techniques with simple turns as an extension to stepping forwards and backwards in kata. As students’ progress through the grades they are taught new techniques, but also to combine those previously learned, in combinations and gradually more complex sequences of techniques (kata) appropriate to their grade and ability. This step by step approach to teaching and learning mirrors the Applied Behaviour Analysis (ABA) approach used to teach children with additional needs, including those on the autistic spectrum.

Kumite with partners from beginners to brown belt follows set routings moving forwards and backwards, either to attack or defend. Although the complexity of attacks and defending techniques increases as students’ progress through the grading system, they are still pre-set so that students learn the order in which each will happen. Students report that they enjoy sparring with pre-set moves as they know what to do.¹⁰

Whilst pre-set manoeuvres are great for those with an ASD for basics, kata and ippon and jiyu-ippun kumite, freestyle kumite can pose problems due to a lack of flexibility of thought and inability to differentiate facial expressions and bodily cues prior to attacking. Instructors should bear this in mind and also ensure that in set routines, students fighting against those with an ASD stick to the rules as this can cause distress for the student with ASD should somebody throw a move which is prohibited i.e. instructor has stated hands only and somebody throws a kick or attempts a sweep.

Freestyle kumite also poses problems as it is 'un-uniform'. This is not to say that those with an ASD cannot excel at freestyle kumite but the manifestations of the disability need to be at the forefront of instructor and examiners minds. Freestyle also requires quick mental reactions which can often be delayed.



Delay in processing

Instructors have reported that those with an ASD don't seem to excel as much at freestyle kumite as they are unable to spot quickly enough what is coming at them and therefore their reactions are delayed.

ASD students can experience thought processing issues. Going through the processes in their heads can result in them being behind the rest of the class but this is OK and to be expected. The delay in processing is most evident in kumite but can display itself to differing degrees in kata and basics.

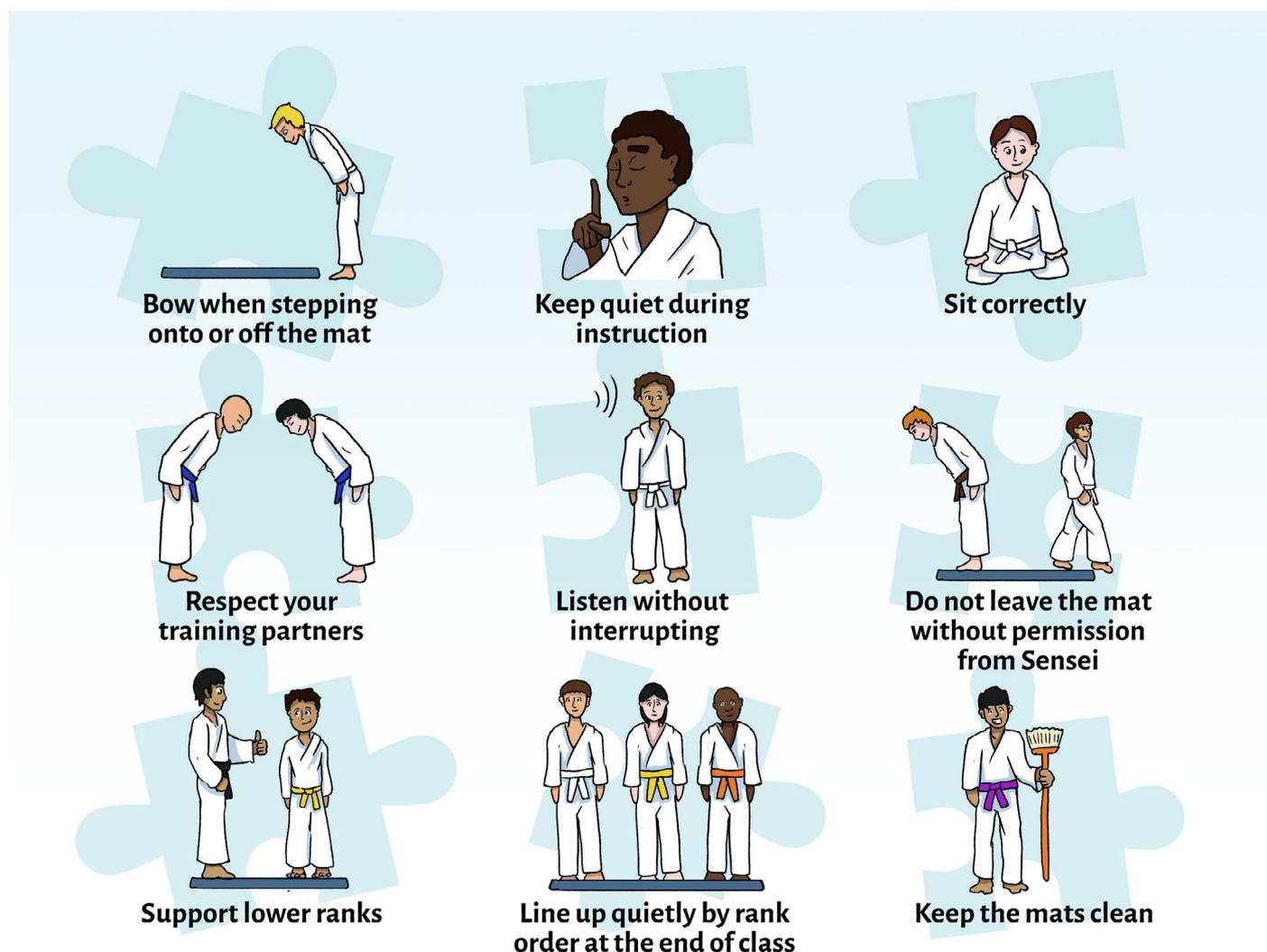
The National Autistic Society recommends:

'Provide extra thinking time so that the information can be processed correctly and use repetition if necessary. People with an ASD may process auditory information differently or more slowly.'

Rigidity and order

The longing for rigidity and order can have excellent results and this can be used as a foundation for instructors to build with their students when structuring lessons and gradings. However, when lesson structures change this can lead to distress, a loss of concentration and a display of unwanted behaviours. This formalised structure does not necessarily limit instructors from trying new things but the lack of ability to think flexibly and the degree of change needs to be taken into consideration. A structured lesson can also have benefits for those who do not have an ASD. This therefore needs to be a key component of pre-lesson planning. 'Training provides a structured and systemized athletic endeavour. Workouts are fairly consistent from day to day. This provides a comfortable routine for the child with autism'.¹¹

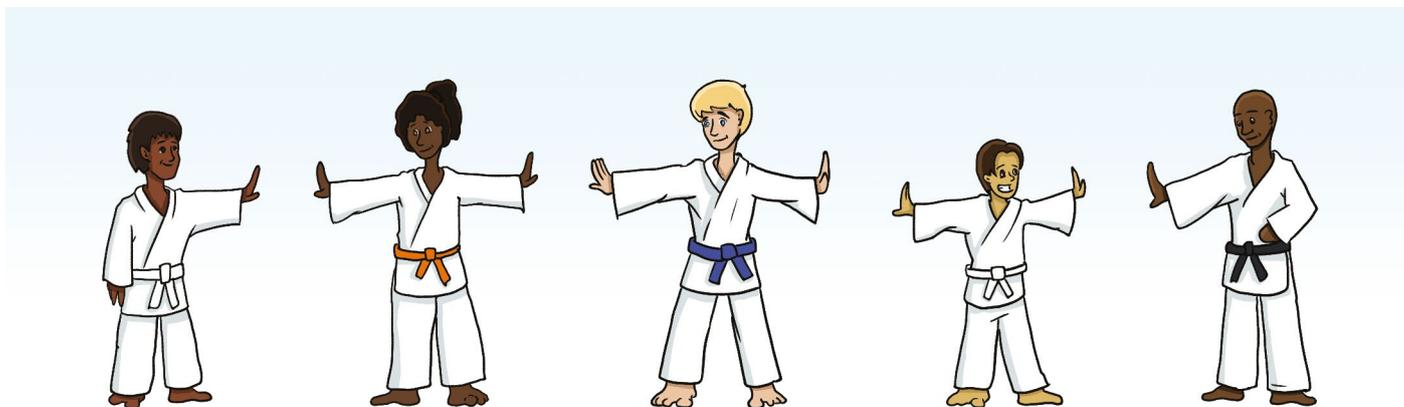
Karate provides all students with a clear set of rules on how to behave and demands respect for others. Self-control and unnecessary aggression is not tolerated. Instructors interviewed as part of Sensei Goodbarn's research stated that they provide new students with rules regarding dojo etiquette and that more experienced students often act as visual role models during training. In conjunction with routines, rules act as an additional aide to ASD students understanding of how they should behave in differing training scenarios. Therefore this strength can be utilised and ASD students can be excellent role models for dojo etiquette – although they may make verbal attempts to rigidly enforce these rules which needs to be managed sensitively by instructors.



Visual cues

People with ASD's place an over-reliance on visual cues in their environments but they also appreciate and benefit from order and precision. Upon speaking with autistic children, Sensei Goodbarn's research showed that children enjoyed the rigidity of lining up and preferably in grade order. However, only a minor change can add stress for those with ASD's. This was best personified by one student when talking about an occasion where visiting students had not stood in grade order when lining up documented, 'it changed the room, I did not feel comfortable'. This quote personifies how minor changes can have an impact on the delicate emotional state of students with ASD's.

Adequate spacing can reduce stress and anxiety for said students with parents in Sensei Goodbarn's research highlighting the nervousness experienced if students get too close. It is with this in mind that instructors are advised to appropriately space out their classes and take into account the moves that are being undertaken.¹²



Learning via visual means is often better achieved by watching peers, rather than instructors, during practice. Given that most techniques are done in groups and repeated multiple times, somebody with ASD who fails to understand verbal instructions from an instructor/coach can watch their peers so as to understand and embody the movements. The design of the karate class (situated in lines) and group activity facilitate this process and can be utilised to enhance the learning and experience of those with ASD whilst training.¹³

Students report it is easier to follow other students rather than the instructor. Historically instructors teach and demonstrate movements whilst facing the class however ASD students express they find it difficult to copy 'mirror image'.

'Autistic children have problems when they try to copy movements made by other people.... They may copy the reverses of the movement they see. That is, they will point down instead of up, and move the left arm instead of the right, and so on'.¹⁴

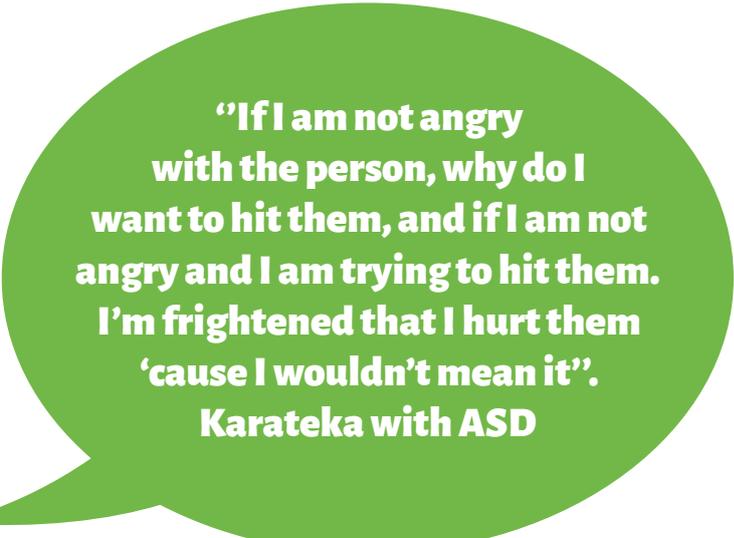
Studies of 'action imitation' have reported:

"The size of the imitative deficit is considerable. It is characterized by difficult with non-meaningful gestures more than with familiar meaningful actions, and also in difficulty with reversal".¹⁵

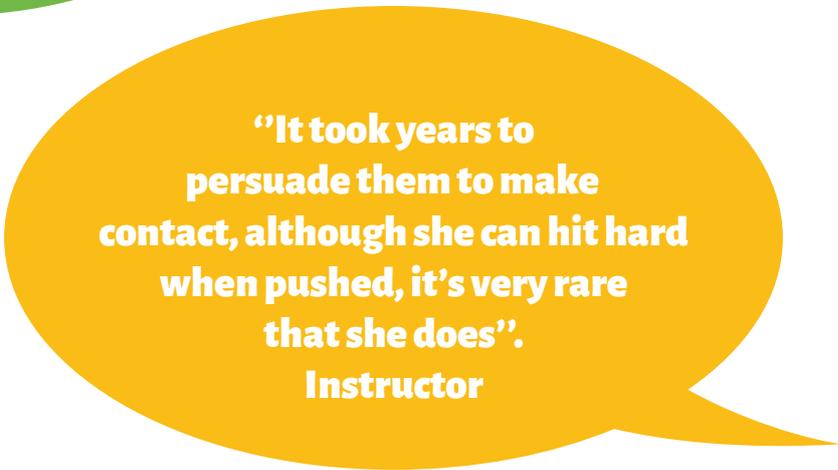
Utilising more than one sense at a time can also prove problematic. Observations have shown that these problems are exacerbated when demonstrated movements occur at the same time as verbal instructions, requiring students to use both vision and hearing at the same time. Therefore, 'Care should be taken to address one sensory modality at a time..... presenting more than one relevant stimulus at a time guarantees that the child with autism will miss some part of the lesson.'¹⁶

Physical contact

Students with ASD's can also show difficulties in understanding and accepting physical contact.



**"If I am not angry with the person, why do I want to hit them, and if I am not angry and I am trying to hit them. I'm frightened that I hurt them 'cause I wouldn't mean it".
Karateka with ASD**



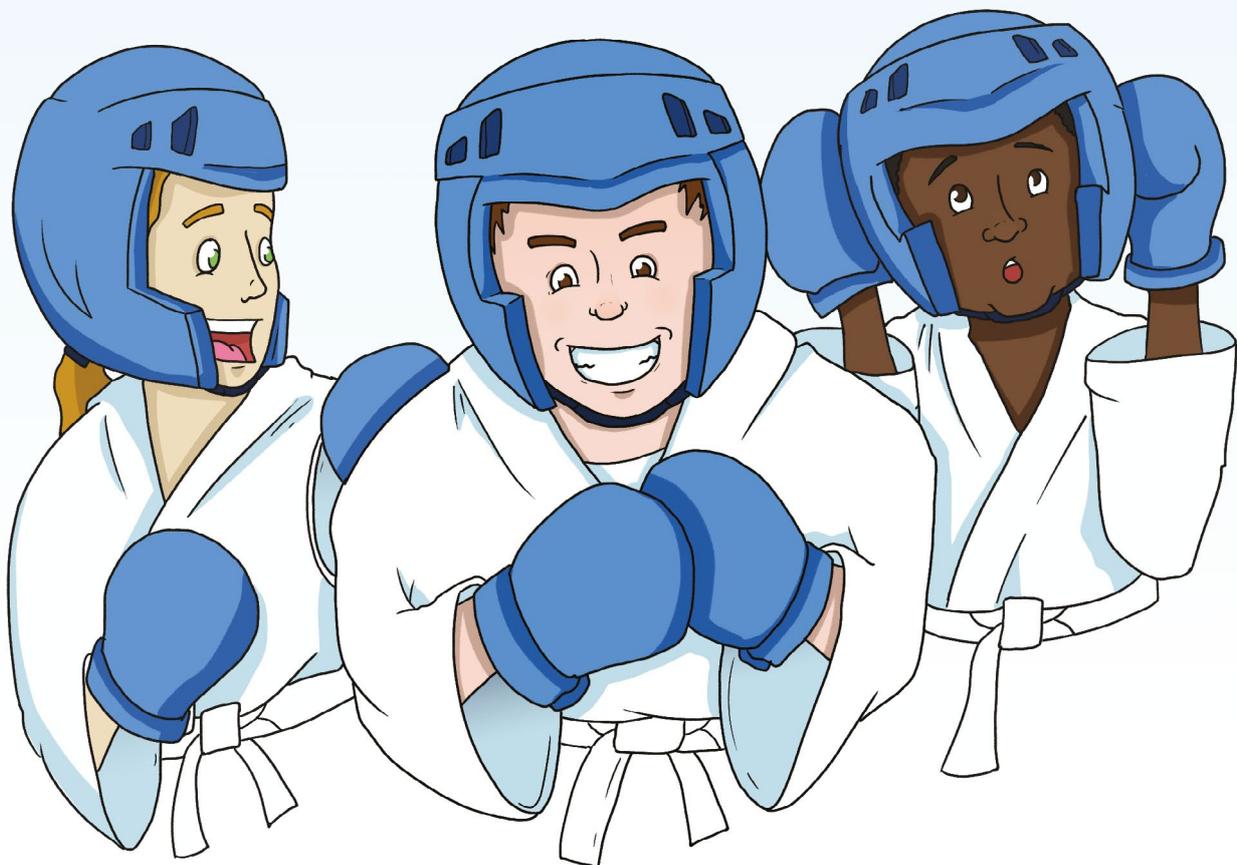
**"It took years to persuade them to make contact, although she can hit hard when pushed, it's very rare that she does".
Instructor**

During Sensei Goodbarn's research, instructors, parents and examiners noticed that a student had an inability/reluctance to touch partners during kumite commenting on the lack of judgement in terms of distancing. They noticed the student never straightened her 'punching' arm during kumite, but could do so in individual training. The parent of the child reported that the child did not see any reason to hit anyone and the best way to avoid it was to "not straighten my arms when I am close to them". The student went on to say that they liked kumite but did not want to hurt people and also found it hard to look at them – harking back to the lack of eye contact as documented earlier.

These statements reflect strong moral values which are inherent in people with ASD's. Literature suggests that this is due to lack of or delayed development of a theory of mind (TOM). For people with ASD's the world is very black and white, right or wrong. There are no grey areas. They neither understand that people have different thoughts to them or see things from different points of view. Social rules dictate that it is wrong to hit, and most people are taught this from an early age. Those on the autistic spectrum, with even a moderate understanding of social behaviour, stick rigidly to the rule, unable to accept that there are different or acceptable levels of 'hitting'. During the course of the research, a student reported an incident where she had been attacked in the street and was able to defend herself, but still could not bring herself to hurt her attacker.

Further academic tests have been carried out and in Stoddard's (2005) findings demonstrated that 10 out of 13 children were unable to differentiate levels of 'wrongness' based on cause, intensity of provocation or the situation.

Therefore, instructors could adapt classes whereby protective equipment e.g. headgear and body protection is worn to mitigate these fears of being hurt or hurting somebody else. Furthermore, a no head contact rule could be initiated for students – similar to that utilised for minors at the moment in classes and competitions.



Language and communication

The language and communication difficulties of people on the autistic spectrum are well documented. The student's literal understanding of language is a common theme.

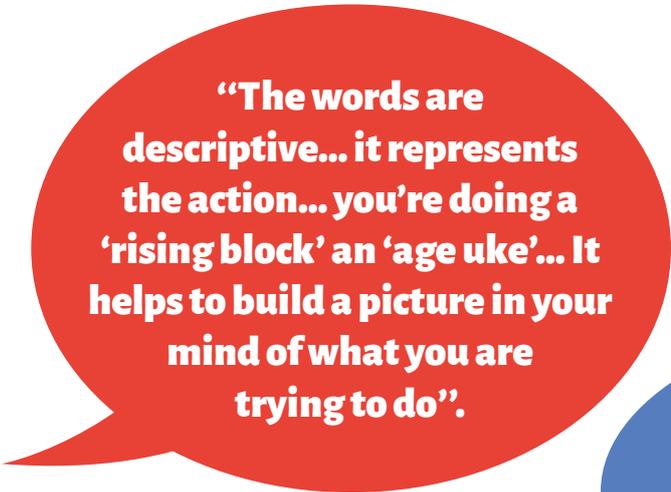
A parent recalled their child's distress at being constantly asked to straighten her back leg and confiding that "I don't have back legs, I'm not a dog". Another student recalled being asked to "look up, not down". He demonstrated both head positions. "When I looked up at the ceiling, the instructor said, 'that's not what I meant', but that was what he said to me".

Researchers such as Siegel (1996) suggest an additional difficulty:

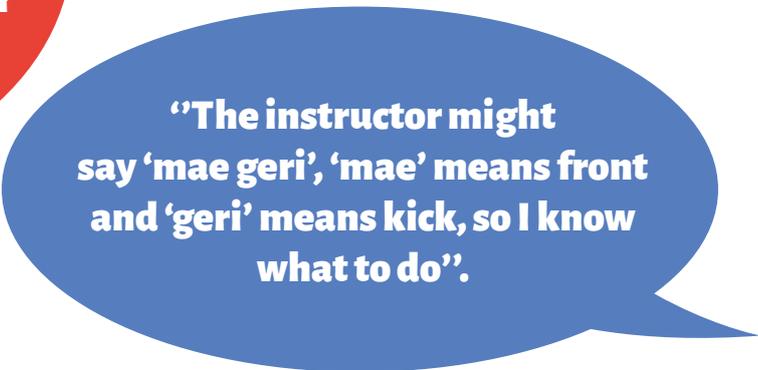
"In most autistic children, tone of voice is consistently 'off' in some way....autistic children can't comprehend the additional (emotional) meaning that tone of voice imbues".

It is also widely acknowledged that those with ASD's cannot always understand jokes. Facial expressions and tone of voice can also have an impact with students feeling like they are being told off when they are not. Scenarios like this can lead to students taking weeks off before coming back to training due to the distress caused. Therefore the tone of voice should be taken into account when speaking to students with ASD students.

However, the language of karate is literal and concrete. English is renowned for having words with more than one meaning. Japanese words have only one meaning and are not open to interpretation. This can have real benefits for students.



"The words are descriptive... it represents the action... you're doing a 'rising block' an 'age uke'... It helps to build a picture in your mind of what you are trying to do".



"The instructor might say 'mae geri', 'mae' means front and 'geri' means kick, so I know what to do".

Instructors have reported using a combination of English and Japanese for the first five grades and Japanese for Brown and Black Belts. Most use the languages consecutively, almost forming one phrase e.g. age uke rising block'. This is the overwhelming preference for students and should be adopted by all instructors teaching those with an ASD.

Additionally, being able to speak and understand Japanese can also be a source of self-esteem which can be easily damaged for those on the autistic spectrum".¹⁷ Student participants with Asperger Syndrome demonstrated the ability to learn and remember the Japanese terms, but those with autism still needed English or visual cues.

Both parents and students acknowledge that learning a combination of English and Japanese is an advantage and removes barriers. It enables students to train anywhere if uniform across karate clubs.

However, even slight changes to language can cause problems with one technique often being described in a variety of means i.e. ude uke, soto ude uke – all refer to 'outside block', but from documented research from Sensei Goodbarn this too can cause problems.

Further issues arise when instructors use lengthy explanations. Instructors should therefore refrain from giving an instruction followed by a description of how the technique can be used in several other differing ways for differing purposes. Or where this is pertinent, the original instruction should be repeated at the end as to jog memory.

Other factors to consider

Sensory issues can have significant effects on students and therefore (where possible) instructors should:

- Keep visual distractions to a minimum
- Have plain walls
- Refrain from training in a sports hall with other activities going on the other side of the hall/ curtain
- Having the lights too bright
- Ask students whether they are too hot or too cold
- Ensure deodorants are only sprayed within designated changing rooms and never in the dojo

Conclusion

Karate is an accessible leisure activity for students with ASD's. Many of the difficulties experienced by ASD students stems from an incomplete understanding of autism among instructors and examiners. However, moderate adjustments to the teaching of students with an ASD can have hugely beneficial effects. By understanding the condition more and adapting classes to focus on the inherent strengths of students with an ASD positive results for coaches, athletes and parents can be realised.

For alternative versions of this document, please contact:

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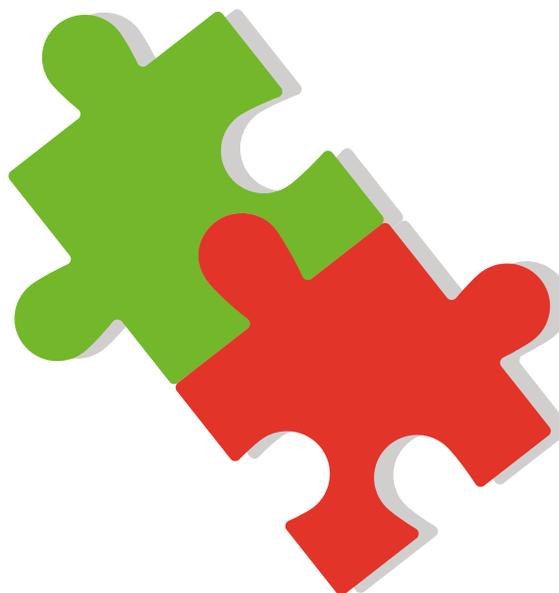
Appendix 1 summarises the document succinctly.

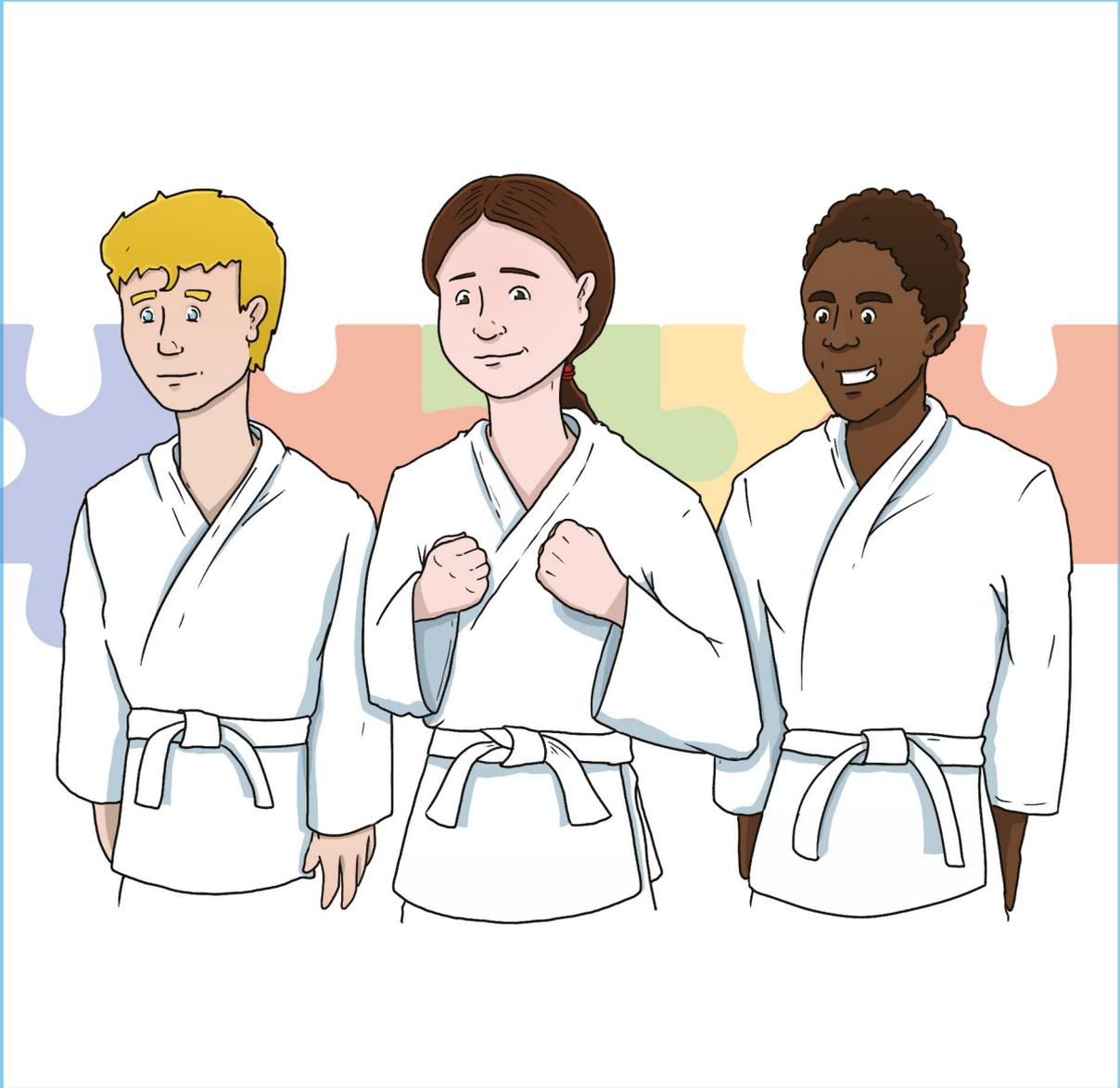
Appendix 1: Coaching advice summary

1. Not making eye contact is not a sign that a student with an ASD is not listening
2. Postural stability and preparing movements are inherent physical manifestations of the disability
3. Allow more time for thought processing
4. Sequential learning has huge benefits for students
5. Rigidity and order is welcomed
6. Kata and Basics pose fewer challenges than kumite but pre-set kumite scenarios can and do work
7. Head contact should be avoided where possible
8. Provide visual cues and aides
9. Provide clear concrete instructions and repeat if required
10. Utilise the Japanese language as far as practically possible
11. Lessons should follow a familiar structure
12. Students with an ASD often learn by mirroring and can therefore utilise adjacent students to learn from – this is not copying
13. Adequate spacing of students within classes can prevent discomfort and anxiety
14. Speak with the student and/or their parent/guardian to understand what works for them – not everybody is affected in the same way
15. Involve the students as much as possible – karate offers many benefits for the student and they offer many benefits to the club

Endnotes

- 1 National Autism Society
- 2 Wing, 1997
- 3 Stewart et al, 2006
- 4 Coyne and Fullerton, 2003
- 5 Bogdashina
- 6 Bogdashina
- 7 Molloy et al, 2003
- 8 Kohen-Raz et al, 1992
- 9 Wing, 1980
- 10 Lovaas, 1993
- 11 Scott, Kozub and Goto, 2005
- 12 Smith-Miles, 2005
- 13 Scott et al, 2005
- 14 Wing, 1980
- 15 Williams et al, 2004
- 16 O'Conner et al, 2000
- 17 Beaver, 2002





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