

Effective Learning in Taekwondo

In this essay I will describe and explain how the composition of Taekwon-do is ideally structured for the effective continuous lifelong development of its practitioners. I will outline how the inclusion of a range of teaching strategies, supported by up to date educational theories of learning, can be used purposefully by instructors in training to enhance the learning process of all students.

The composition of Taekwon-do lends itself well to progressive instruction. Each aspect within the composition is closely related to the others enabling each phase of instruction to link effectively with the last. General Choi identifies the composition of Taekwon-do in Taekwon-Do (The Korean Art of Self-Defense) as:

1. Fundamental movements – individual soldier's techniques.
2. Dallyon – maintenance of equipment.
3. Patterns – Platoon tactics.
4. Sparring – Field exercises in simulated combat conditions.
5. Self-defence – Actual combat.

The application of Taekwon-do as a military art of self-defence is clear in the progressive training program connected to the different levels of military training. In a civilian environment, training as though in the military may not be conducive to the range of students which participate in Taekwon-do in a normal dojang. This is due to the variations in age and physical capability in a normal population which can be significantly different from those who are active in the military. However, the need to develop a student's understanding and capability remains paramount. With this in mind, the composition of Taekwon-do can be re-aligned to link with a student's learning without compromising the structure:

1. Fundamental movements – individual moves done correctly.
2. Dallyon – fitness and physical conditioning.
3. Patterns – Linked moves against an imaginary opponent.
4. Sparring – Simulated combat with use of techniques under limited response time situations.
5. Self-defence – Actual application of the techniques in real world situations.

This allows the instructor to deliver a program that progressively challenges the student, whilst also ensuring that the student is able to see the relevance and purpose of each aspect of the training programme they are involved in. Whether by accident or design, the progressive composition of Taekwon-do, and its delivery through that composition, is reinforced by modern theories of learning. Throughout the program variations and adjustments can (and should) be made by the instructor to ensure that challenge is at the right level for the students to maintain their engagement and progress. To be flexible in the delivery of Taekwon-do, as in every subject area, a relevant level of knowledge and understanding is required.

To ensure that the knowledge base is effective, the instructor should set the right example and keep up to date with their own learning. This can be done through wider reading around the subject to increase the instructor's theoretical knowledge and application of Taekwon-do, but more importantly the instructor should train regularly with others so that they receive regular feedback on their own techniques. This increases the instructor's credibility as a lifelong learner and ensures that the techniques being taught are correct. They can also utilise some of the training approaches and drills used by more senior practitioners in their own classes. The instructor's credibility with the students is vital in supporting the learning process. An instructor that lacks credibility will lack the respect of their students and peers in relation to their ability to teach Taekwon-do effectively. Maintaining credibility through constant personal improvement is therefore a key area for an instructor to consider, especially considering the high impact "teacher credibility" has on student learning (as outlined later).

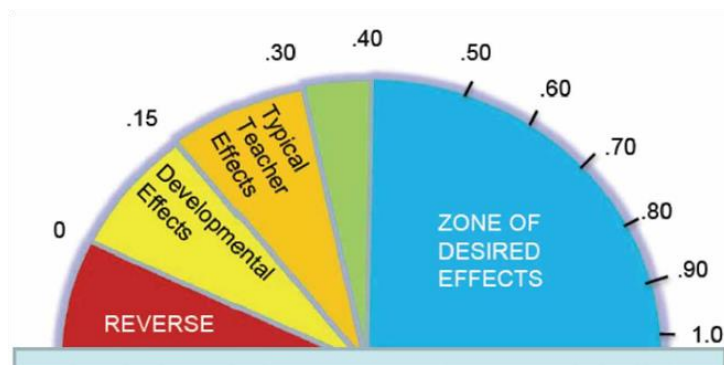
My role as a secondary school Headteacher, with responsibility for the development of effective learning strategies across a range of subject areas, has led me to incorporate a range of educational theories and practices

in my approach to learning when teaching Taekwon-do. Up to date information on memory and learning indicate that some strategies can be more effective than others.

Listed below are the teaching and learning strategies that link most effectively to Taekwon-do:

- 1.44 Student expectations** (*whether a student expects to learn or be challenged*)
- 1.07 Response to intervention/feedback** (*how a student responds to feedback given*)
- 0.90 Teacher credibility** (*the instructor's credibility as a practitioner and a teacher*)
- 0.90 Formative evaluation** (*ongoing assessment by the instructor of the effectiveness of teaching strategies*)
- 0.75 Feedback** (*Feedback provided to the student on how to improve*)
- 0.72 Teacher – student relations** (*the working relationship between the instructor and student*)
- 0.52 Classroom management** (*organisation of the class and lesson to support effective learning*)
- 0.12 Ability grouping** (*students grouped by capability*)

The impact calculation figure indicates the effectiveness of the strategy based on combining over 800 meta-analyses of teaching and learning investigations worldwide. The average effect size of positive interventions was found to be **0.40**. As a result, many schools and educational establishments have focussed their time on developing classroom practices that use the more effective strategies, those with an impact calculation of more than 0.40. (It should be noted that 0.15 to 0.30 is the normal impact of a teacher.)



The teaching approaches I have identified below respond to and utilise these high impact strategies either directly or indirectly. They could be considered by the instructor as part of ensuring effective learning occurs in the dojang.

The approaches identified are:

- The process of learning and mind-set
- Planning and consistency
- Warm up / Body preparation
- Demonstration
- Feedback
- Repetition
- Chunking
- Flipped learning

The Process of Learning and Mind-set

The student's own expectations have the greatest impact on their ability to learn. If a student enters the dojang expecting not to learn or improve their practice they are unlikely to do so. It is imperative that the instructor develops and reinforces a "growth mind-set" in their students. This can be done through consistent positive reinforcement of behaviours, clear diagnostic feedback that is linked to improvements in practice, as well as effective planning that challenges students sufficiently to cause improvements but does not discourage participation. This in itself will enhance and support the instructor-student relationship that the process of communication is reliant upon.

The approach of the instructor is extremely important in developing the student's mind-set. The feedback that instructors give their students can either encourage them to choose to challenge themselves and increase

achievement or discourage them and make them want to look for an easy way out. For example, studies on different kinds of praise have shown that telling students they are smart, or talented, encourages a fixed mind-set (see below). In contrast, praising hard work, effort and positive response to feedback cultivates a growth mind-set. When students have a growth mind-set they are more likely to take on challenges and learn from them, therefore increasing their abilities and achievements.

There is no set way on to develop a growth mind-set in students. Areas that may act as a good starting point include:

- **Types of Praise** – Praising the process, their effort and individual development over the result. Encouraging your students to ask for and act on feedback. Encouraging a sense of curiosity.
- **Level of Expectation** – Having high, challenging but realistic expectations of their performance and communicating this to your students. This can also help to fight against “Imposter Syndrome”.
- **Positive Group Norms** – Creating a growth culture that values learning, education and development.
- **Helpful Self-Talk** – Teaching students to manage how they talk to themselves and to do so in a positive, helpful and energised way.

Fixed Mindset	Growth Mindset
Thinks intelligence is static	Believes intelligence can be developed
Avoids challenges	Embraces challenges
Gives up easily (problem focussed)	Persists in the face of setbacks (solutions focussed)
Considers failure as fruitless or worse	Considers failure as essential to mastery (always learning)
Ignores useful negative feedback	Learns from criticism (wants to know and understand what has not worked)
Feels threatened by the success of others	Finds lessons or inspiration in the success of others (builds on the ideas of others)
As a result, they may plateau and achieve less than their full potential	As a result, they reach ever-higher levels of achievement

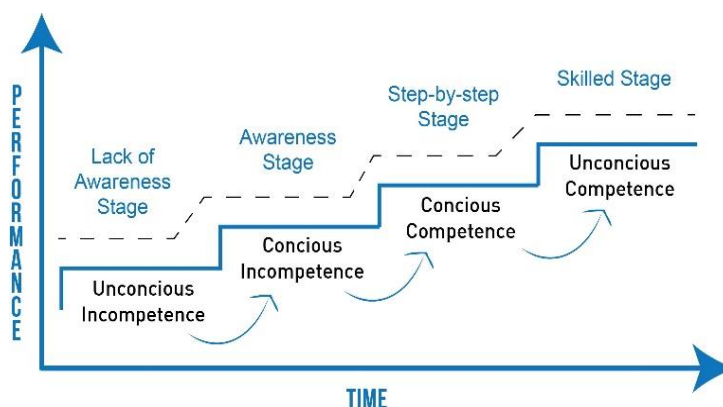
To enhance the effectiveness of a student’s “growth mind-set” the instructor should have an understanding of how the brain and body learns new things.

When we learn we move through various stages of understanding and capability. These can be simplified into 4 steps:

1. **Unconscious incompetence** (*I don’t know what I should do and I can’t do it*)
2. **Conscious incompetence** (*I know what I should do but I can’t do it*)
3. **Conscious competence** (*I’m thinking about it so that I can do it well*)
4. **Unconscious competence** (*I’m not thinking about it but I can do it well*)

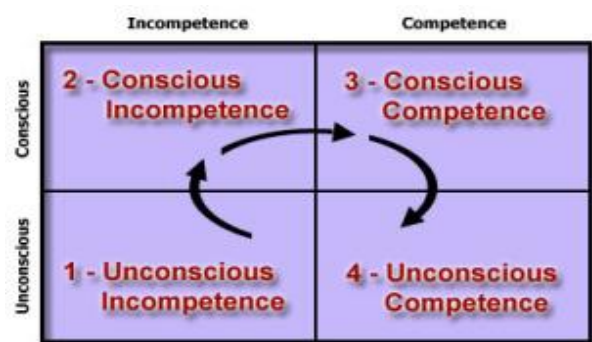
The 4 steps can be seen as both a continuum and a cycle.

The continuum can equate to learning one specific task or an overview of expertise within a specific field. In Taekwon-do this relates to learning to do a Walking Stance and stepping forward using sine wave. At first each individual part of the move requires thought as well as how they fit together. But over time the student will move from having to think about what they are doing to eventually doing it without thinking about it. This is because they have “chunked” the information about each component together into their working memory as a single action.



The continuum format can also show the development of a student's overall understanding of Taekwon-do over time as they move from 10th Gup to 1st Dan and above. In this case the individual student's perception of where they are on the continuum will change based on their developing understanding of the Taekwon-do.

I remember when I achieved my 1st Dan, I became aware of the wealth of knowledge which I had not apprehended before. I realised how little I actually knew and understood compared to the amount that I didn't know. I therefore moved from feeling that I was Skilled (Unconscious competence) back to Awareness (Conscious incompetence) overnight. This realisation can be daunting for any student, but if the instructor has instilled a growth mind-set approach in the student it can be seen as a challenge or opportunity rather than an obstacle.



Conscious Competence Learning Matrix

The cycle format is actually closer to the truth for any practitioner of Taekwon-do. It demonstrates that learning is continuous.

As a result of striving for constant improvement our position within the cycle will constantly change as we take on new challenges to improve both ourselves and our martial art.

With these stages of competence in mind, instructors should consider the way the student is having to use their working memory and process the new information they are teaching.

All students display very similar behaviours regardless of academic capability or learning difficulty when learning new things. Many issues relate to difficulties in:

- **remembering instructions,**
- **following complex sequences,**
- **keeping track of multi-stage tasks.**

This relates to the student's ability to actively use their working memory when learning new things.

Working memory is:

- **Storage capacity** (*everything you know and can recall from memory*)
- **Processing capability** (*active use of brain capacity to understand and relate the new information*)

An example might be that students may be able to recall stored procedures for doing long division when it is presented as a sum, but may struggle to remember what to do when the same procedure is presented as a written problem in another context. In this case the extra variable of reading for meaning (understanding the what the problem is) can prevent access to the stored procedure (how to do long division).

In the dojang this equates to a student forgetting how to form a low forearm block whilst trying to remember the next move in a new pattern.

Instructor interventions and planning can reduce memory conflicts and permit a focus on the process, these could include:

- Less than 5 bits of information, instructions or steps at once;
- Make expectations/criteria visible during the task and refer to them regularly throughout; constant verbal feedback and physical adjustment or correction.
- Tasks that require processing (understanding) need to have minimal memory demands; so drill the individual moves before putting in a sequence.
- Tasks that require memory (recall) should be structured to have minimal processing, especially in the early stages of learning; standard procedures within the session.

- Chunk/Step changes **with reviews** of the progress made; build the sequence step by step always using previous learning as a starting point and repeat.

Initially the feedback and correction will be from the instructor, but ideally the student should be reviewing their own situation and making corrections and adjustments based on the criteria set by the instructor. The instructor needs to notice and praise this action by the student as part of positive reinforcement of behaviour.

Planning and Consistency

The first step of planning a session or a training program is to ensure that the instructor is planning from the correct perspective. This can be summarised as:

- It's **not about you** (the instructor);
- It's **all about them** (the students);
- **Don't** plan what you (the instructor) are going to do;
- **Plan what they (the student) are going to do and... how you (the instructor) are going to support that.**

When planning a session it is imperative that the instructor has an understanding of who the students are, in relation to their understanding and capability within Taekwon-do. The plan needs to consider:

- where the students are at now – the foundation upon which the lesson is built
- where they need to get to in their skills and understanding – the goal or learning objective for the session
- how the instructor is going to get them there – the process and steps within the session

When planning the stages of a session, a consistent format of approach to new learning will support students to engage. This is because they will be accustomed to the format and know what to expect. This reduces the mental conflict of the student when dealing with new information and so enables them to focus on the new learning more effectively.

For example when teaching a new pattern to students a structured approach can be linked to the composition of Taekwon-do mentioned earlier.

1. Fundamental movements of the pattern
 - a. Teach each individual move separately and link to previous learning.
 - b. Link moves as sequences in line work (chunking).
2. Dallyon – Consider the physical moves required and include fitness and conditioning practice linked to the technique.
For example: Holding the leg in side kick whilst rotating one foot from Juche could be broken down into:
 - a. Side kick lifts
 - b. Side kick hold
 - c. One leg balance
 - d. Side kick rotate
3. Patterns
 - a. Teach the diagram so the student knows where they are moving to.
 - b. Chunk the moves in sequences and repeat.
4. Sparring – Include the new techniques from the pattern in set sparring to consolidate, as well as provide context and purpose.
5. Self-defence – Include the new techniques from the pattern in self-defence to further consolidate and embed the real life application and purpose of the technique.

At each stage of this process the instructor will need to demonstrate what success looks like, so that students know what they are trying to achieve. Throughout this process the new learning is being consolidated and reinforced, by the instructor responding to the students and providing effective feedback about how to improve.

Warm up / Body Preparation

This is a section of a training session that is often overlooked as being part of the whole development of the student's technique. In normal academic classrooms many teachers use starter activities to engage students on entry into the lesson. The best starter activities are those that recap previous learning and link directly to the new learning planned for that lesson. The start of the training session in Taekwon-do can be seen more as an opportunity to prepare the body for the coming session rather than simply a warm up.

The instructor could include a range of muscle preparation and conditioning techniques that are related to the techniques to be developed during the session. For example, if the session has a focus on developing kicking techniques, then the preparation stage should focus mainly on exercises from the core down with a particular emphasis on the hips and kicking. This could include hip activation exercises, passive and active stretching, plyometric exercises, as well as controlled kicks.

I have found that the inclusion of compound movements in the fitness aspect of a session is very effective. A compound movement is an exercise that engages two or more different joints to fully stimulate entire muscle groups and multiple muscles. The benefit of using compound, or multi-joint movements, is the systemic stress they exert through the target muscles and neighbouring areas. This leads to a system wide, or total body, coordination of movement and development. Added to this is the physical and mental coordination needed from the student to complete the movements in a coordinated fashion. The student becomes more adept at being "in control" of their body as opposed to their body "doing its own thing".

It should be noted that sparring - and combat - require coordination of compound movements, so the inclusion of compound movements in the body preparation stage of a session underlines the need to include related movements in the warm up/fitness stage to ensure that students are developed as effectively as possible.

Demonstration

Consistent use of a demonstration cycle in teaching is very effective as it provides a visual and concrete example of what success looks like.

1. **Show** – demonstrate and break down the technique; link to the purpose of the technique. Sometimes it will be necessary to ask a student to demonstrate the technique so that the pertinent aspects of it are able to be pointed out and described.
2. **Do** – students attempt the new technique, the instructor observes, ready to give feedback.
3. **Reflect** – instructor provides diagnostic feedback to the student to improve the technique; the student reflects on the feedback and works out how to incorporate it into their actions.
4. **Redo** – students repeat the technique taking into account the feedback provided.

This cycle can repeat itself numerous times. It should be noted that the effectiveness of the feedback will be dictated by the expertise of the instructor at diagnosing the issue the student has with the technique. The more experienced instructors are more able to go beyond "it's not correct" to the cause of "why" it's not correct.

Peer teaching can be utilised successfully in the early stages of this process. This is an effective development tool, as it provides the learning student with support and feedback, whilst the teaching student consolidates their understanding as they are required to explain and provide feedback. Whilst this is happening, the instructor has time to facilitate and provide support at the point of greatest need within the group. Peer teaching should be used with the knowledge that the standard of the feedback for improvement possible will be significantly lower than that provided by the instructor.

Feedback

Taekwon-do is a practical subject, so to improve its practice the practitioner will need to get feedback on the effectiveness of the techniques used. Ideally this will come during training from instructors and coaches, but it can also come from competition and ultimately from an opponent in combat. It is better to get the feedback and act on it before it becomes an issue of personal survival.

As such, the effectiveness of the feedback given (aforementioned Impact Calculation 0.90) and the student's response to feedback (Impact Calculation 1.07) when combined are extremely important factors in learning.

When feedback is given it should be based against known success criteria. Students should be aware of what they are trying to achieve and what that success looks like. The success criteria for a technique being taught can be explained to students through demonstration (physical or video) and description (verbal or written texts). The feedback provided will then be within a known context.

The instructor should consider the following areas when identifying success criteria to students:

- **What do they need to know?** (Which facts do they need to recall?)
- **What do they need to be able to do?** (What skills are being developed?)
- **What do they need to realise?** (What understanding and links should be made?)
- **How can/will the student demonstrate what they know?** (How do you know that they know?)
- **How can/will the students demonstrate what they can do?** (What will they do?)
- **Can the students understand the expectations?** (Do they understand your instructions / success criteria?)
- **Are the criteria embedded throughout the instruction?** (Did you include the success criteria in the session and demonstration?)
- **Have you got examples of previous work to demonstrate what you mean?** (Demonstrate)

Once the success criteria have been identified and explained the next step is to provide effective feedback based on those criteria.

We have many **methods** of feedback (verbal, non-verbal, written, individual, whole class etc.) at our disposal but there are only four **levels** of feedback.

1. **Self** – Praise
2. **Task** – How well has the task been performed; is it correct or incorrect?
3. **Process** – What are the strategies needed to perform the task; are there alternative strategies that can be used?
4. **Self-Regulation** – Self –monitoring to achieve a goal.

Praise is the lowest level of feedback. It is important to link the feedback to the behaviour that the instructor wants the student to repeat again on purpose. If that behaviour is not identified in the praise then it can become “empty” feedback, praise with no reason for the praise over time is just background noise to the student.

Task feedback is linked to the task, or technique being learnt. It is based around completion of the task correctly; did they do it right? In Taekwon-do task feedback will often be focussed on correct sequence, correct position or posture.

Process feedback involves a more diagnostic approach from the instructor. The instructor identifies the issues with the way in which the student is executing the technique that prevents them from doing it effectively; why didn't they do it right? The feedback is based on correcting the cause of that issue to enable the technique to be performed better. For example, the student cannot complete a side piecing kick with the correct kicking foot position; the instructor identifies that the standing foot is orientated incorrectly preventing the hips from rotating sufficiently. Diagnostic feedback requires an in depth understanding of techniques and how to break them down. This break down of the technique provides additional success criteria that the student can then respond to, so

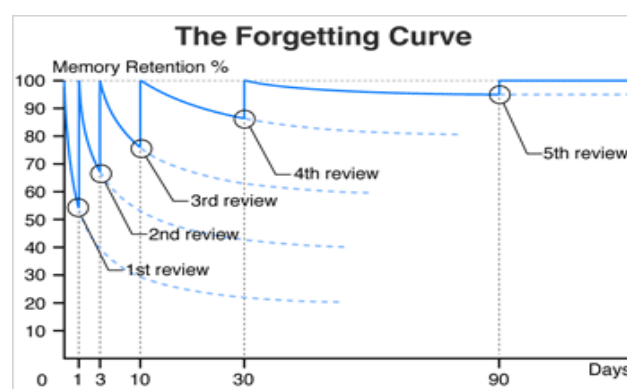
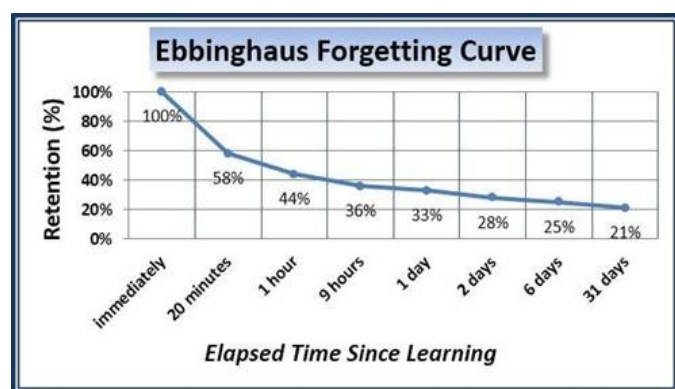
they can demonstrate progress. For students to progress to the highest level of feedback - self-regulation - the success criteria should be explained and demonstrated well.

Self-Regulation is the highest level of feedback possible. In this situation the student fully understands the success criteria by which they are being measured and they are trying to achieve, and they are using this information to monitor and make corrections to improve their own progress. This process requires the student to be effective at monitoring and reflecting honestly on their own progress. In this situation the student has taken ownership of their own learning and the instructor is then able to act as a facilitator to support the student to reflect effectively and make progress. The student is now "assessment capable" as they are aware of how they are being assessed and what they need to do to achieve that.

Repetition

This seems obvious, but it is important to repeat techniques regularly so that they embed in the long term memory of the student. This reduces the memory conflicts that occur when learning new techniques.

The Ebbinghaus Forgetting Curve indicates how quickly new learning can be lost if the technique or information is not revisited soon after first learning; 42% of new information is lost within 20 minutes of first learning.



To embed the new learning it must be revisited regularly over time. This will eventually lead to the information or technique being embedded into long term memory. This situation relates directly to information that the brain is required to use and recall, but muscle memory acts in a similar way.

Muscle memory is a form of procedural memory that involves consolidating a specific motor task into memory through repetition. When a movement is repeated over time, a long-term muscle memory is created for that task, eventually allowing it to be performed without conscious effort; the information has been chunked for easy access and efficient use. This process decreases the need for conscious attention and creates maximum efficiency within the motor and memory systems. Repetition in line work supports muscle memory retention, as does linked planning for the consolidation of techniques across line work, patterns and set sparring.

Chunking

Chunking is a term referring to the process of taking individual pieces of information (chunks) and grouping them into larger units (bigger chunks). By grouping each piece into a larger whole, you can improve the amount of information the student can remember. This, in a sense, has already been done within Taekwon-do, and many other martial arts, in the form of patterns. Also, as mentioned earlier, repetition of techniques leads to the information being chunked as muscle memory.

An instructor can utilise the concept of chunking throughout the session. Examples include:

- Breaking the session into distinct sections that chunk the information in a training format – warm up, line work, patterns, set sparring etc.

- b. Breaking a technique down into distinct actions so that the student can learn each action separately before completing together.
- c. Combining techniques in line work that link to patterns or sparring drills.
- d. Sparring drills that link complementary techniques, to support the student to repeat them automatically during sparring without having to think about it.
- e. Use of the relevant terminology and practices during training so that those associations have already been made before competition.

When built into a training session on purpose, the practice of chunking learning is an extremely effective teaching strategy.

Flipped Learning

Flipped learning is an instructional strategy and a type of blended learning. It reverses the traditional learning environment by delivering instructional content, often online, outside of the normal classroom. It is reliant on the student learning specific content in their own time thus enabling the instructor to use the teaching time to check understanding, correct misconceptions and reinforce rather than deliver new content all the time.

In the simplest form within Taekwon-do, this would be students utilising the text from Taekwon-Do (The Korean Art of Self-Defense) by General Choi to learn all aspects of Taekwon-do and then attending training with senior instructors who correct issues in understanding.

The evolution of the internet with numerous online resources and apps has supported this process within Taekwon-do significantly. Examples include “The Black Belt Project” (Jerzy Jedut/Jaroslav Suska), “This is Taekwon-Do” (FGM Rhee), and many others.

The most effective examples of flipped learning involve specific personalised information and resources for the student that they can interact with in the format that works best for them. These are often produced by the instructor themselves and made available to the students through online forums. I have used this approach with my own students in the form of podcasts, handouts and videos that are linked to understanding that is required for each grade from 10th Gup to 2nd Dan. I have found it to be very effective in improving students’ performance, especially in relation to the Korean terminology and pattern meanings.

And finally...

One of the most important aspects required for effective learning is purposeful practice linked to the student’s attitude in sessions. As mentioned earlier, the expectations of the student have the highest impact on their ability to learn over time. A student that expects to learn will do so more effectively than one who doesn’t. This links closely to the concept of “training with intent” and “purposeful practice”.

The instructor can prepare an exceptional training programme that utilises all of the current theories about learning and development, they can also deliver it to plan, but if the student does not engage and train with intent and purpose they will not progress effectively. No-one cannot expect to perform at their best level during a grading or competition if they do not prepare to perform at that level, and part of that preparation is to train consistently at that expected intensity. It is important for the student to recognise this, either through observing senior grades within the class leading by example, or through consistent expectations and the inclusion of full intensity opportunities during a session.

Many students’ only experience of examinations is in an academic school environment, where last minute preparation is an acceptable approach to examination. This generally involves the knowledge being crammed for the test and then forgotten soon after. This approach is not conducive to sustained progress within Taekwon-do. Therefore, training with intent is an ethos that needs to be embedded into the culture of every dojang through a consistent and understanding approach to learning of Taekwon-do led by the instructor and all of his/her students.

In conclusion

Experienced and effective Taekwon-do instructors may already utilise many of these teaching approaches simply because it was the way they were taught. I do not believe it is an accident that martial arts have been structured using repetition, chunking and feedback. Over time, and by using trial and error, previous instructors will have identified the most effective approaches to embed techniques into muscle memory. They may not have understood why the teaching strategies were so effective, but it has led to them to incorporate approaches into the normal structure of the art's development that are also supported by up to date learning theory. With the additional knowledge of why the structure and composition of Taekwon-do is so effective, we can use the teaching strategies more deliberately, with a clear understanding of the reason and aim, to enable our students to learn as effectively as possible.

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