

On Teaching Bagpipes

Lindsay Davidson

Table of Contents

1.	Introduction	.....3
2.	Theory of Teaching	.....4
3.	Practical First Steps	.....8
4.	The Madeline Hunter Direct Instruction Model	.....12
5.	Setting a curriculum	.....17
6.	The Magic Maxim and the Golden Rule	.....19
7.	Rudiments	.....20
8.	First tunes	.....26
9.	Progressing and developing repertoire – etudes and tunes for pleasure	.....27
10.	Extending the 'Piping Muscle'	.....29
11.	Transition to Bagpipes	.....30
12.	MSR – what, when and how?	.....32
13.	Piobaireachd	.....33
14.	Group teaching	.....36
15.	The curriculum of the future	.....38

Introduction

There are thousands of books available on such subjects as teaching piano, or violin. There are 'recently invented' methods such as Suzuki method, Yamaha method and many more for other instruments, and libraries full of books describing them, their pros and cons, their history and comparisons between them. There are theory and other curricula and sequences of examinations set by various institutions and groups of institutions such as the Associated Board, Trinity College and so on.

In 'piping, we have a few alternative tutor books. Certainly more than umpteen, but without doubt less than most other instruments. With so many many respectable and worthy institutions appearing, and so many approaches, new and old, it is somewhat disappointing and alarming that so few books or extended essays are available concerning the theory of teaching or rather so few people feel the need and/or confidence to share their philosophy of teaching with others.

Is this because of a lack of philosophy? Is it because of a lack of reflection upon personal practice? Is it a lack of market? Is it a lack of competence? Or maybe 'piping is only just starting to become enough justifiably diverse and systematic to consider what we all do as teachers?

I have no desire to insult or provoke personal attacks, rather to provoke thought and reflection on how we teach our instrument and how that may change in the future. This book is a personal reflection, not a witch hunt or an attempt to lay claim to superiority. It is an honest and humble attempt to help beginner teachers in 'piping find their feet and develop their own style and method with awareness and confidence whilst encouraging experienced teachers to share and reflect upon their ideas.

Lindsay Davidson
BMus(Hons)
Dip.Mus.Ed
PGCE
PhD

Theory of Teaching

Theory. What is it? When we do something a certain way, the theory behind it is the collection of reasons we believe justify our approach. When learning to become a schoolteacher, we learn all about the theory of learning itself – what are the psychological mechanisms involved, the channels we can use to communicate our ideas effectively, the nature of cognition, or knowledge, the structure of the machine we call the mind, even down to the type of knowledge we can learn (procedural knowledge etc.).

We should never lose sight of the ultimate goal of our teaching – to motivate and enable anyone to play bagpipes, no matter how much or little talent they seem to have to begin with.

Professor Howard Gardner developed a theory in the early 1980s which he called 'Multiple Intelligences'. His basic idea was that we do not possess an intelligence which can be measured and given a number value through testing, but that we all have several different types of intelligence which we use in differing measures for any given task. Further, he noted that it is very hard to tell which types of intelligence we are using for any task, or to isolate any single type of intelligence.

Gardner originally asserted that there are seven types of intelligence, and that there may be more that can be defined in due course. He noted musical, logical-mathematical, spatial, linguistic, inter-personal, intra-personal and bodily-kinesthetic intelligences and discussed each one in moderate depth.

In playing a bagpipe, we depend upon musical and bodily-kinesthetic intelligences. The other intelligences that we use to help acquire our skills and understanding will vary from individual to individual. Rhythm for example can be explained using logic, spatial representation, words (linguistic intelligence), or simply through musical intelligence. Gardner's work is well worth reading (his writing style is simple and designed to inform, not dazzle) and thinking about to get a strong understanding of his theory and how we can use this in teaching 'piping. Even if we disagree with his basic theory, we can still take ideas to help us understand something of how our students may be thinking and feeling.

Music has four elements; time (rhythm), pitch, colour (loudness of notes,

timbre, instrumentation, etc.) and context (historical styles). In truth, every single aspect of music can be fitted into these four categories. Musical intelligence essentially occupies the first three areas, whilst our other intelligences will account for context. Awareness and understanding of these three areas can be developed by accessing ideas through any of our other channels if necessary.

Tony Buzan invented 'mind maps' and also researched many areas of memory technique and learning methods. Important to Buzan is use of the whole brain and understanding of synaptic connections. Speed-reading was also one of Buzan's specialised areas, and discussion of these points are perhaps better left to memorizing tunes.

Our brain cells are called neurons. There are billions and billions of them in each of us. Between neurons we have synapses. When something happens in the brain, a chemical signal goes between neurons, crossing over synapses. Without going into the chemistry and biology too deeply, we can assert that the brain undergoes physical change when we experience, or learn something. The brain automatically registers almost everything we experience, but dismisses a huge percentage of this as unnecessary (how many leaves we saw on the tree, or the exact shape of an individual banana, for example). The criteria for dismissal of information are essentially an issue of how the information has been labeled and treated by us in experiencing it and, critically, how it has been reinforced. The brain clears itself out regularly – at intervals ranging from every few milliseconds, to every few hours, days etc. Buzan explains that to put something into long term or permanent memory depends upon reinforcing it at regular and distant intervals, including over a year. This explains why school programmes are filled with repetitions, and also suggests that in designing our teaching, we should also include spaced interval repetition. This is as true for a skill as it is for a fact. We should note though that our repetitions should be concerned not only with short term achievement during a lesson, but should be structured into our curriculum and long term planning.

Thankfully, in 'piping, a new set of tunes of every type every few months will serve to check and reinforce our technical achievements.

Franz Liszt was arguably the most successful pianist that ever lived. Legend has it that he would practice with seven coins on the end of the piano. His method was to play one note, seven times in a row without any mistakes, and then add the next one, repeating that seven times, then adding one more

and so on. Every time he made a mistake, all the coins went back and he would start his sequence again. The goal of this behaviour was to make it impossible to make a mistake. We now know that brain theory supports this method as being effective and explains the mechanism by which it works. Using seven tokens and giving a reward for each tiny success is a tremendous way to motivate students, especially youngsters, and gives a chemical reaction (gaining a reward, logically, must release the 'happy hormones') which helps make the student 'addicted' to progress. Ultimately, losing the seven coins becomes a game, whilst gaining them has a seriously positive and motivational outcome.

Here we have touched upon a critical area – motivation.. One way to do this may be through trying to appeal to as many different types of intelligence as we reasonably can in a lesson as this will give maximum opportunity for success and 'feel-good' factor for the student, and also use as much of the brain as we possibly can. Observation of the student's reactions shows us which intelligences the student prefers for certain types of task.

In classroom teaching the ideal is to give the pupil the maximum possible ownership of the learning project through identifying goals, learning outcomes, explaining why this is useful, how our lesson fits into the bigger picture, and indeed, the mechanisms by which this should work. Even little children can understand multiple intelligences if explained in appropriate terms, and they can also cope with synapses and neurons, and how they work. There can be no reason why a person who has come of their own free will to learn a bagpipe cannot be given ownership of their learning by explaining the mechanisms by which this should happen and by helping them to identify areas which are not progressing so that the teacher and student can work together on finding solutions.

Stephen Covey wrote a famous book, primarily aimed at business leaders - "The Seven Habits of Successful People". It contains advice which is also useful for 'piping teachers (and teachers in general). Perhaps most useful from Covey is the idea to 'put first things first'. In the case of learning 'piping this typically means to make sure we are focused on the real issue and not on some manifestation of it. For example, if the G finger moves when trying to play a D gracenote, the issue is not necessarily lack of understanding on the part of the learner, or of inability, but may be caused by the instruction to move the finger being sent from the brain to both hands, or the wrong hand, and this can be solved by the table exercise described later, using positive assertions, rather than listing problems for

excision. This is putting first things first; finding the cause of each error and addressing this issue, solving the mistake en route.

Many years ago, a good friend commented on the method of teaching he had seen used by some 'pipers. He called this 'grunt and slap'. His point, colourfully enough expressed, was that many teachers show something then demand a copy, commenting somewhat unclearly when the copy is not exact that the correct answer is not what has been offered, but something else, demanding a further attempt, followed by another grunt that the student has gone too far in the wrong direction, and so on and so forth. I call this 'progress by differentiation'. This is essentially a negative method (and not by any means confined to teaching 'piping). Our basic principle should be positive – we explain each element, what it does, how it works, and how to create it, with all of the steps, and if something goes wrong we analyse the problem and offer positive solutions. We can identify areas for improvement without being negative, and save harsh words if we want to use them for other psychological reasons.

If someone asked, “How do you eat an elephant?”, it is likely that you would reply that the best way would be in small parts. Music should be treated in a similar way. As we have noted, there are four areas for concern, each of which needs a special approach. Additionally, we have the actual mechanical part of playing a bagpipe to add to this – moving the fingers and blowing the bag.

Thus we need to compile a list of elements to learn and an order of priority.

Practical First Steps

“Learning to play any instrument is about learning to move the fingers up and down in a certain order in a certain time. The order is technique and the time is music. When we corrupt that time it becomes a personal interpretation.” So sounds the standard preamble for adults (children get the easier version, without corruption..). To go deeper one may say that the order of finger movements, hence technique, can be programmed like a computer using the appropriate methods and can thus be guaranteed one hundred per cent.

Clearly then, one should start from gaining control of the finger muscles. At the same time, a basic concept of the nature of bagpipe music should be installed in the student's mind. Typically, it is possible to start to learn note names and basic musical literacy all within a half hour lesson.

To gain control of the finger muscles we have a simple 'table exercise'. Place your hands flat on the table then raise the index finger and ring fingers together. Follow this by putting them down and at the same time lift the middle finger and little finger. This should be done first of all with both hands doing the same, and then with the fingers moving in opposite phases (index finger up in one hand but down in the other), then with hands crossed over, and finally with eyes closed. This develops the connection between the brain and the fingers (bodily-kinesthetic intelligence) whilst also serving to show the student that patience may be needed to begin with to get past the bad-sounding first steps of learning any instrument.

The speed at which the brain learns this skill is almost always amazing to students and this fact serves well to motivate.

Once we know where the fingers are, we need to place them correctly on the chanter. Straight fingers are moved by using a minimal number of muscles; training a small number of muscles will take less time than training many, improving reliability of learning and efficiency of practice. The next important step is to explain that the fingers should ideally move from the same position every time, and that position should be in line with the front of the chanter. Finally, with regard to finger position the student should be advised to try to keep their wrists straight. This is a further way to ensure that a minimal amount of unnecessary movement happens and that all practice goes in the same direction.

As a guide especially for young learners I have found it useful to aim to place the chanter on the fingers between the joints of the fingers – 'between the lines'. This helps keep fingers straight and is also easy to understand.

To help reinforce these points, I usually point out that bagpipes can be heavy.

As these issues are easy to explain but need time to sink in, the first lessons should also contain the critical elements of 'theory', meaning both learning theory and music theory.

Reading music can be taught in a matter of minutes.

Pitches, note names and finger positions can be taught with flashcards. That is to say, on one side of a small card one writes a note on the staff, and on the other side, the finger position using a sequence of 'X' and 'O', 'X' for hole closed and 'O' for hole open. This 'noughts and crosses' way of writing diagrams is quick and easy, and can be used to check that the learner has a clear understanding of what they are being asked to do.

Diagram 1 – 'noughts and crosses' for low A.

X	X	Thumb	G finger
	X		F finger
	X		E finger
	X		D finger
	X		C finger
	X		B finger
	O		little finger
	LOW A		

Introducing and installing this way of thinking in the first lesson is a good idea.

Using flashcards to teach note names and finger positions takes very little

time indeed, and forms a good exercise from day one. The student can practice at home by playing not just a scale, which is a fair conventional and traditional approach, but by choosing cards at random, to actually check they have learned and internalised the information required.

The other aspect of theory to teach in the first lesson is rhythm. Traditionally this is explained using a 'note tree' – drawing a diagram dividing a whole note into its smaller values. This works for many people in so far as it teaches names and fraction 'labels'. This may for some people transfer into a meaning in sound. However, it does not work for all people, and for children who may not have learned fractions at school (note that class teaching changes with time, and some children may be taught fractions at an older age than we were...) this may be essentially meaningless. We need to have another method available.

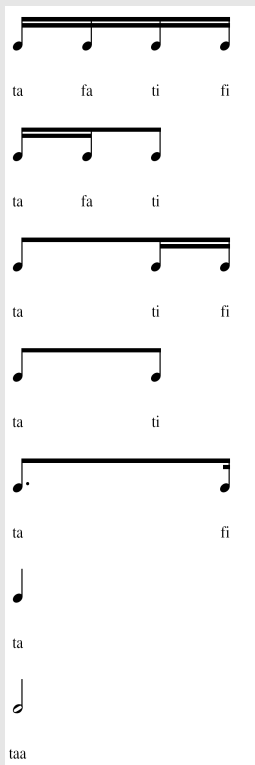
'Audiation' is when a person can 'hear' sounds that do not exist by remembering, imagining and predicting - hearing the music in one's imagination. This is basically the same as thinking in a language. We imagine we can hear words; we imagine the sound of the music we see on the page.

There is a method, known as the 'New French Method' (sometimes spoken about as 'French Note Names' and from now on referred to as 'NFM') for teaching groups of rhythmical patterns. The Kodaly method uses a variation of this, and there are many other variations in circulation. My personal choice is this method as it is strongly supported by logic. The idea behind attaching words to common rhythmical patterns is to use our language skills to assist in audiation. We memorise a word in association with a rhythmical pattern, and eventually take away the words, leaving only the sounds. We do this in steps by tapping on the table, clapping, stamping feet and so forth (depending on age of the students). With adults, audiation tends to be acquired very quickly in working with rhythm groups, at least on a basic level. Searching for rhythmical patterns in everyday life that we can name with our 'words' is a way to develop musical intelligence (as defined by Gardner).

In NFM, we divide each beat into four equal parts, which we then call 'tafa^tifi'. By omitting either a 't' or a 'f', we tie the values of subsequent notes together. The resultant words are below in table 2. Dotted quarter notes should be demonstrated by saying 'ta a ti' with a small glottal stop on the middle 'a', indicated here in bold.

A beat can be any 'fractional' length of a note, but it is easiest to introduce this using a crotchet (quarter note) as the basic beat. Unfortunately, as we get further into 'piping, fractional notation of rhythmical patterns becomes more complicated. We can teach small children entirely with NFM, but in later stages, if problems are encountered in reading rhythm when students are starting to freely read more complex music, for 'piping, they will need to be taught fractional values as well so that they can function independently.

Diagram 2 - New French Method names of rhythmic patterns



Other methods of explaining note durations include 'stepping out' notes cross the floor. A small step will be a sixteenth note (semi-quaver) and other, bigger, steps will correspond to larger values. This very graphic demonstration is mostly useful as an aid to understanding, as opposed to a complete method of explaining in itself. Similarly, it is possible to draw time as a graph with note units shown, or on squared paper, or the classic cake or pizza being divided.

Many people come to bagpipes with only a narrow knowledge of the music and idiom. By way of getting to know the sound of pipe tunes, and indeed to find one's favourite tunes, it is good to practice various rhythmical accompaniments to tunes, such as keeping the beat, tapping two times on the table each beat and so on. Whilst this may seem a waste of time for some people, for young children it has value as it helps develop audiation. It is worth noting in this regard that Suzuki method asks that children hear the music they are to play all the time at home, as background music. There is no reason not to apply such an approach for pipes.

The Madeline Hunter Direct Instruction Model

The title, 'The Madeline Hunter Direct Instruction Model' sounds very grandiose. In fact, another name might be 'the right way to plan and conduct a lesson', or indeed, 'common sense'.

The Madeline Hunter Direct Instruction Model describes the basic framework of teaching and learning and gives us a checklist for planning our lessons, both in the very short term (a single lesson) and in the medium term (a 'scheme of work' in school-teaching language).

Whilst the model gives a framework for effective and systematic planning, not all elements will need to be included in all lessons. Hence the assertion that the approach is for both very short term and the medium term.

The model gives seven steps listed and briefly described below:

1. Learning Objective – decide the goal of the lesson. For example, the learner will learn how to practice by the end of the lesson.
2. Anticipatory Set – why is our goal important and why does the student want to learn it.
3. Tell the student the learning objective – whilst this may sound obvious, frequently it is missing. A person who knows what their goal is can keep it in focus. Without knowing the goal, putting 'first things first' is impossible!
4. Input – teach the lesson (more on that below)
5. Check for understanding – an ongoing task, observing how the student reacts to information and presentation style, having them explain in their own words and so on to check they actually understand.
6. Guided practice – student should demonstrate skills acquired by giving simple exercises and task (“show me an 'E' please”, “read this note”, “write the noughts and crosses for this tune”, etc.) for the teacher to know that the lesson has been successful, and if not, to intervene appropriately, and re-teach if needed.
7. Give homework – to reinforce the lesson at home and seal in the knowledge gained and skills acquired.

Whilst this was clearly designed for class teaching (band rehearsals...) it is equally applicable to individual lessons.

Obviously, step 1 happens before the lesson starts. In the early stages you will have many diverse goals – gaining control of the fingers, learning how to practice effectively, learning basic notation, developing musicianship and so on.

In the case of a person choosing to come to you and pay for lessons to fill up their free time, there would seem to be little need to explain why something should be learned, or to interest the student. At the same time, learning an instrument can be a frustrating and challenging task, and this can work against you. We have the good fortune that bagpipes make a continuous sound at one dynamic (very loud). This is the key to explaining why we play embellishments – as our grammar, our way of showing which notes are more important, louder, accented, etc. I ask questions before every new element; “What does this do? Why do we have it? How does it work?” By the time you have asked ten students these questions, you yourself will be convinced of how easy it is to play bagpipes!

When we are teaching tunes, we should keep in mind that there are several purposes for doing so – motivation, as a study of one technical aspect, repertoire building, for competitions and so on. We need to be clear to the students as to what the purpose of our chosen tune is and make sure they agree and understand the reasoning behind your choice. This brings us to the third point in the method.

The fourth point is perhaps the most important for this discussion – the actual presentation of the ideas.

There is a basic sequence in instructing an an instrument:

- show the student what you want
- explain how it works and how to achieve it
- do it together with them
- gradually reduce your support until they are doing it by themselves
- ask them to explain and show you

Of course, we can go into a little more detail, and this refers back to brain theory – what physically happens when we learn something.

It is here that you must be most focused and strict, not allowing any deviation from what is required without using it productively.

We have five steps in learning to play *any* instrument:

1. **Programme the fingers** (write down what you want using X+O, and later have the student write this down). Contrary to common belief, the fingers do not move simultaneously, but very nearly so. This means there is a correct sequence in which to lift the fingers to change from one note to another. For example going from 'D' to 'E' involves lifting the 'E' finger before changing the position on the bottom hand, otherwise a crossing sound may happen. This should be written in the X+O sequence. It is in this level of detail that you will make the real difference to your pupil.
2. **Group the instructions**. On the piano this is playing both hands together, but on 'pipes it means calling gracenotes gracenotes and so on. It is when we go from purely mechanical to descriptive actions. It is in this stage that you can prepare the ground for strategies to speed up and co-ordinate the fingers.
3. **Add time** – this means we mark the positions of where the beats fall on the X+O sequence and all the other rhythmical details we want. We can think of this as a sampling rate on a video. How many times per beat do we need to know what the finger positions are in order to film and see every single change we must measure? In my own personal learning I measure down to each 512th note. This is not actually as difficult, nor insane as it sounds. Using tafatifi, I divide each beat into four, then each 16th into another four and so on. 512th notes are enough to cover almost all tunes. As a side issue, my own private research into using midi for teaching is based upon this approach.
4. **Make the time even** – so far, we have only dealt with theoretical note lengths. Making time even means spacing each beat an equal distance from each other, in time.
5. **Speed up** – by this stage, we know what we are doing.

Each of these steps should be accomplished seven times in a row without any mistakes, just like Liszt!

The observant reader will notice that not all of these elements are actually one single step. In your longer term planning, you install the skills needed to support these five steps en route.

These five steps are truly mind-blowing in application. If you are teaching a workshop and the students are experiencing this way of thinking for the first

time, even if they know the idea, it is advisable to give a lecture to them all together first, and start with something so simple that they will get through it easily.

In my own experience I have had some very scary moments with insisting on this. When someone is falling down on the sixth repeat every time, frustration sets in. It is fair to go round the issue slightly, but never let go. Every time we fail, we need to go back to a level we know we can achieve and reinforce our playing from there.

The bad news is that between lessons and practice sessions, a little ground is lost, and it will be necessary to repeat from an earlier stage. However, the level of solidity and technical/musical confidence gained from this justifies the hard work.

If in doubt, try it yourself first...write down the sequence of finger movements for a new tune, go through them one at a time, without any rhythm (without blowing as well), seven times without a mistake, write down the rhythm you want for each action, including when you open and close the gracenotes, go through that seven times checking you are aware of the position of your actions in relation to a beat, make the beats even, seven times through the whole tune, and then speed up seven times in a row, and finally, see how you feel.

I always explain that this is mind-numbing to begin with but that it installs a system of training which is stunningly effective and leads to much easier and faster results in the longer term.

If you are teaching your own students from the beginning, in fact you can install the method immediately and as the tasks are very small, they will not feel the difficulties experienced by introducing this at a later stage. It is the boiling frog in the pan syndrome.

Doing this to a whole pipe band reveals many interesting things. Firstly, it reveals how a typical band has uneven levels of knowledge and surprising gaps. These are easily found and filled. Secondly – do you want to be the person who makes the mistake on coin six, last bar? Everyone knows they can make a mistake and so witch-hunts tend not to arise, but the psychological motivation to not let the team down is immense (and by-the way you have just built a team!). As with individuals, it takes a long time to install the method initially, and can be a rough road, but when it is done, the

capacity for learning quickly and understanding how to play details together is thrilling.

Returning to Madeline... We go through the five steps together, starting with the teacher saying the noughts and crosses instructions and leading the way, from time to time asking the pupil to say and show what will be next (avoiding any mistakes). When we have done this enough to feel the student can lead, ask them to do so, showing in your fingers what is required as well, by way of support. When you can feel they are fluent, then remove your support and have them work alone. The quicker you get them to this stage, the better, as it is at this level that they need to give seven repetitions without a mistake for you to know they have got it. Model and support them for each of the five steps in the early stages of their piping career, and cut down gradually.

As a final check of your student's progress, ask them to explain for you, writing down the X+O, explaining the whole framework and going through the motions.

For homework you can either ask to reinforce what you have done in the lesson (especially if you have a one hour lesson during which a lot of time will be spent on practice as opposed to giving new theory), or for new tunes and exercises to be prepared by themselves as a way of using their knowledge. It is vital that you are clear in giving tasks. For youngsters this should be explicit and highly organised, and preferably you should write down what you want from them. Adults can often remember themselves, but you may wish to write down what you want so that you can remember more clearly. In effect, you are writing the plan for the beginning of your next lesson – checking homework.

Setting a Curriculum

In the early stages, this is a fairly simple task. It should be noted however that there are two routes to learning bagpipes, both of which you should consider, and both of which it would be advisable to be prepared to deliver. There are circumstances in which one or the other route is the best.

The Traditional Path.

All embellishments, one after the other, each with an exercise, then tunes.

Pros – systematic, makes transition to tunes easy, gives very strong technical foundation.

Cons – frustrates some people, is incomprehensible to people from communities that have had no contact with 'piping, or even amateur music making, before.

The 'Boys Brigade' Path

Minimal rudiments, followed by tunes, introducing embellishments as required.

Pros – gets people onto tunes quickly, and this motivates some people (especially useful for teaching people from communities that have had no contact with 'piping, or even amateur music making, before).

Cons – is not inherently systematic (you the teacher must plan a very long programme in advance and hold very firmly to your path), can give a false sense of accomplishment (playing Amazing Grace with one gracenote is not the same as playing a bagpipe).

The College of Piping in Glasgow, and many other organisations, have covered the cons of the second method by publishing a series of books to take someone from nothing to full technique. This gives a framework, but as noted, is much longer than it needs to be, costing more money and time than strictly necessary. However, this is not a criticism if someone chooses this route and wants a gentle hobby. The other important point being that this method really does appear to help in places where 'piping is new (in Poland, where this book has been written, for example).

I was taught using the first method and was opposed the second. My objection was that by introducing tunes with embellishments removed the language of 'piping was not being introduced and developed systematically and logically. I stand by this reasoning. I believe that *some* of the abuses of kitchen-piping (in general I am in favour of kitchen-piping) are due to a poor understanding of the function of gracing. The obvious solution to this is to compose tunes using limited technique which are musically logical in and of themselves. There should be several tunes on each level. One day perhaps I shall do this. In the meantime, I encourage everyone else to do it first.

Each lesson should be divided into sections – music/'piping theory, theory of learning/teaching and, of course, playing. Within these sections there should be further divisions into revision (checking what has been done at home and what has been remembered or lost) and new material. The exact balance between these elements will be different in each individual case.

The Magic Maxim and the Golden Rule

The magic maxim:

“If you can play slowly you can play quickly, but the converse isn't necessarily true.”

Jimmy Inglis, my teacher, always said that if you can play slowly you can play quickly. The magic maxim goes beyond this and is essential knowledge on which to base both an individual's capacity for precision every time they play, and for a pipe band to play together.

Let us think of taking samples of activity in a classroom at regular time intervals. Imagine we take one photograph at midnight every day. The resulting picture which emerges is that the room is always dark and is never used. If we double our sampling rate and take a picture at noon as well (during lunch break...) we see the room is still never used, but that it is light half of the time. Going further, we take pictures at 6am and 6pm, which tell us no more about what the room is actually used for. Only when we start taking eight sample pictures per day can we see that the room is used, and then we still have a blurred and inaccurate representation of what it is used for.

Reviewing what we are playing, listening to feedback from our ears and fingers is the same. Our sampling rate is measured in terms of how many times per beat we measure what we are doing, and from there we have a measure of how precisely we are playing. If we start off something new by playing quickly, we have no time to become aware of the details of the rhythm of embellishments and therefore we can't necessarily go from there to playing slowly. However, going the other way is possible. In such a way the image of correct, rhythmically proportioned, performance can be created and ingrained into your mind, ready for a tempo change when ready. To do this, we use the five steps described above.

The Golden Rule:

“Practice slowly, learn quickly.”

In light of the magic maxim, this is self-explanatory...

Rudiments

Writing a book about teaching bagpipes without discussing this would be absurd. The rudimentary embellishments will be dealt with here in the order that I would normally teach them. In other words, this is my typical and preferred curriculum.

Hand Position and the Scale

This has only briefly been mentioned above. Hand position is vital and must be insisted upon at every chance during a lesson. It is easy to make a joke out of this so as to not irritate both teacher and student.

I suggest using flashcards with X+O to help the student learn the notes without context, and to run through the scale from bottom up (for adults, or larger hands) or from top down (for very small hands). This will typically take one lesson to install and two or three to stabilise.

The concept of crossing sounds should be introduced as early as possible, as already in the scale there are ample opportunities to make mistakes. This should be demonstrated carefully, along with an explanation of what causes them (fingers moving out of sequence) and advice on writing X+O diagrams to make sure the student knows how to analyse a note transition learning the correct, clean manner of performance.

G Gracenotes

One reason gracenotes exist is to provide emphasis for our music in the absence of 'dynamic' and 'articulation'. The other reason is to repeat, or cut notes.

High G gracenotes provide the most strident emphasis. Firstly, the repeating or chopping function can be demonstrated by playing, and requesting the student to copy, repeated gracenotes on one or more notes.

Using a gracenote to change pitches with emphasis involves introducing our five step, seven perfections approach. The order of events should be explained (example below) and demonstrated at the same time.

1. Starting note
2. Lift 'G' finger (open gracenote).
3. Change note (remember changing notes sometimes requires extra actions).
4. Put down 'G' finger (close gracenote).

There is one exception. When going to or coming from High 'G', explain to the student to use the thumb instead of the G finger and that this is then called a "Thumb Gracenote" or "Back Gracenote" or "High 'A' Gracenote".

Introducing this when the notes are not yet fully embedded in the student's memory is a good way of both justifying and introducing the method described above. The student will typically be grateful for the chance to go slowly, and will feel the benefit of the method and gain rapid results. In a great many cases, the method is now sold and installed and progress is impressive.

There should be two exercises to improve this – use flashcards to select two notes to link with a gracenote, and also to go up and down the scale with G gracenotes. This gives both a simple way of developing, testing and using procedural knowledge and a simple exercise that the student can perform without help to gain motivation.

D Gracenotes come next, in the same way, followed often in the same lesson by E gracenotes. To emphasise the similarity of technique (and reinforce good learning method) it is useful to try to use language which very closely resembles what was said earlier. If you can quote yourself that is even better.

G,D,E Gracenotes exercise

This will typically be in the next lesson to avoid giving too much homework. There are any number of such exercises used and any one will do, providing it shows the two functions of gracenotes, emphasizing changing notes and repeating notes, and is easy enough to motivate and build some fluency of action.

By this stage the learner is a few lessons in and typically needs time to consolidate.

Strikes

Strikes are easy to explain as they serve only to repeat notes, usually with more emphasis than gracenotes. As they are easy to show and to learn little need be said. The strike on B may warrant special attention to avoid crossing sounds.

Throws

I introduce this very quickly after strikes, for the obvious reason of taking advantage of the strike on D.

Of course, there are two throws in common use. This is not the place to discuss the merits of one over the other, nor to perpetuate the war between the two schools of thought.

I always inform the students of both styles, play them both and demonstrate both, before choosing to teach them the one I play. I explain that there are violent reactions to throws all over the 'piping world and, tongue-in-cheek, advise caution when approaching the subject.

As a teacher, you, like I, may find yourself running a workshop for a band that plays the throw that you don't and as a professional, you need to be able to work with that and develop their needs in line with what has been established by their pipe major.

Throws have the musical function to provide heavy emphasis on D.

The so-called 'light' throw achieves its goal by sounding the loudest note on the 'pipes before the beat, to announce something important is coming, hitting the first D on the beat and repeating it with a small strike after the beat. Repeating something gives it emphasis. Saying something again does too...

The so-called 'heavy' throw achieves its goal in a completely different way. Firstly it has two low Gs (cut by a D gracenote) before the note, to say something hugely important is coming, then on the beat the note we want to hear (D) is cut into (acciaccatura) or 'squashed' by a C. This injury to the D provides extra emphasis. I demonstrate the 'injury' by pretending to cut into my arm on the beat or with flamboyant students by banging suddenly and unexpectedly on the table.

We can continue to use flashcards to create random tests of knowledge but should also give the simple exercise of running up and down the scale playing a throw from every note. This captures every possible use of the throw equally.

Doublings - general principles

Saying something twice makes something more important. In other words, repeating something gives it emphasis. And so is the idea with doublings. Where more emphasis is needed than that given by a gracenote, a doubling should be used.

The general principle is to play a High G gracenote (as a loud gracenote) to the note being doubled, and then repeat that note by cutting it with another gracenote. When the student understands this principle, they typically find doublings extremely easy to learn.

I explain here that in interpretation there are few hard and fast rules, but that we can make a good guideline by saying that we almost always want the first gracenote to close on the beat and double with a 'chop' after the beat.

And then we go through the order of events for the first doubling, low G.

Low G Doublings

It is logical to start at one end of the scale and go through it in steps. Low G doublings are not very common in tunes, so it seems also fair that if one doubling is going to be weaker to begin with, then it should be this. Additionally, the top two notes are doubled in different ways.

Typically when introducing doublings, I only give this first one in the first lesson on the topic. The exercise will be a low G doubling from each note of the scale. Of course flashcards can also be used to generate exercises during the lesson.

Low A Doublings, B Doublings, C Doublings

It is vital that the student can explain the general principles behind doublings before tackling these three in one lesson. When they see the pattern and the principles working together, the whole rationale for

embellishments becomes clear and this reinforces what has been taught in a very powerful way. Introducing them all in one lesson helps with this.

D Doublings, E Doublings, F Doublings

These doublings, if the previous ones have gone according to plan, may also be introduced in a single lesson.

When giving students so much new material in one go, I insist they write down the instructions (order of events) in words (see G gracenotes) and if needed also in X+O in addition to whatever textbook support they have.

The reason for introducing these doublings in groups is not to speed up learning, but to reinforce the reasoning behind them.

High G Doublings, High A Doublings

These too can be given in one lesson as they work on similar principles – simply repeating the note with a strike. I often give the canntaireachd words for these as a sound for the student to aim for – 'hiri' and 'dili' .

It may be that the student will need an extra week or so to reinforce what they have learned so far and allow doublings to 'bed in'. There shouldn't be any sense of rush or panic.

Grips

Grips provide extremely heavy emphasis when moving between notes. It is very easy to play a low G and cut it into two with a D gracenote. This is how I explain grips, then adding that we can have any note on either side.

It is important to point out that both low Gs should seem to be the same length (in fact they are not) and that the grip almost always goes before the beat, thus opening the next note ***ON*** the beat.

I can't explain why we have the exception for grips coming from D. It is a historical anomaly, and we just live with it.

Here is a good place to bring out flashcards again to test a student's flexibility of thinking, but home exercises should be more prescribed, and I ask for grips to E from the whole scale, as we would expect in piobaireachd.

Taorluath

In the next lesson taorluaths are introduced as extensions of grips, providing even more emphasis when going to notes lower than E. The homework exercise will be taorluath from the scale to low A, as in piobaireachd.

Birl

I explain and demonstrate that there are two rhythms for birls, and two ways to play them both. Sometimes they have a gracenote before them and sometimes not. I also add that it takes a long time to get them to work properly. It took me seven years...

The first rhythmical pattern we can call “ta-fa-ti” (see NFM above) and the second “tri-pe-let” (three notes of even duration).

The birl requires the little finger to be moved by two separate muscle groups in order to get the speed of action required. Two times down and up with the pinky will simply never provide the result.

We have the upside down seven action. This means the first muscle group pulls the little finger towards the bottom of the chanter, then the second group pulls it in a little circle coming back.

The other birl, 'tap and across', means just that. The first muscle group taps the little finger down, then another muscle group pulls it across the chanter towards the hand.

These points are important to explain. By now, if you have followed the same path as I prefer to, you will have the student fully onsite.

Tachum

Tachums are full of mystery. Other musical traditions call them a “scotch snap”. I simply show the formation of tachums on the page and explain that the idea is to make the sound of the word in the fingers.

First Tunes

The choices here are quite straightforward – either give a tune that has as much technical variety in it as possible (Scotland the Brave, Kilworth Hills) in order to remind the student of what they have just done, or pick something very simple (Sutherland March, Quimperle) to ease them into the difficulties of actually playing tunes, or maybe something slow they know well (Amazing Grace, Skye Boat Song) to get them playing, and recognizing, a melody.

The important thing to remember is that the first few tunes that your student learns will probably be unsatisfactory for the first five years of their playing; all the learning mistakes, fumbles, trips, problems with solutions, get coded into the hands as they go along, which means that making it into something presentable for a performance is unlikely to be worth the effort, or worse, demotivating. Rather, it is safer to have a small list of 'disposable tunes', chosen to be attractive and motivating, but with the balance of techniques you wish to give, with a list of areas you wish to develop.

If you want to get embellishments into a tune, and make it sound like a tune, then Scotland the Brave is an ideal start. If you just want something sounding like a well known tune, Amazing Grace might work. If you want to use a wide variety of techniques to remind your student of everything, then Kilworth Hills or Highland Laddie are great choices. Teribus, Killicrankie, Bonnie Lass of Fyvie, Jenny's Bawbee are all great choices and serve the purpose of having easily recognizable (and singable) melodies with a medium level of technical difficulty which require a high enough level of fluency in rhythm to make the student both work, and get satisfaction.

As a general rule your student should be playing about ten tunes fluently on the chanter before thinking about 'pipes'. It is a good idea to have a mixture of tune types/purposes in the mix you give them.

Progressing and Developing Repertoire

Etudes and Tunes for Pleasure

As stated above, the early tunes are in many cases going to go to waste. It therefore can make sense to be open about this and choose some tunes to be 'etudes'. An etude is a piece of music composed with the purpose of training one particular aspect of technique whilst being somewhat attractive.

Aspects of technique that need to be addressed in 'piping are:

- embellishments in the context of tunes
- fluency of fingering (including speed)
- crossing sounds
- rhythmical control (in embellishments and otherwise)
- being tuneful

Additionally, different tune types should be addressed early on, before starting on 'pipes:

- slow airs
- 4/4 marches
- retreats
- 6/8 marches
- short strathspeys
- short reels
- simple jigs

By short, I mean two-parted. Simple jigs means jigs that develop frequently occurring patterns such as GDE gracenotes, scales, three repeated high 'A's. Slow airs are psychologically easy for beginners (though not necessarily when it comes to blowing the 'pipes). The other types of tunes would be considered part of the basic repertoire requirements by most 'pipers. These two lists will give you ample material to choose from. If you set one target from the upper list in each tune from the second list, you will have your curriculum set.

Of course, it is also useful to ask the student what they want to play (and why). Very often they will have a tune in mind they like or want to be able to play, and if it happens that said tune is far away from beginner music, then you can use it to generate a series of 'etudes' for your student to learn,

knowing why they are doing them. If there are no other agendas involved, such as a band agenda, then why not? If there is a band agenda, then that changes everything.

My own first tune was Highland Laddie. Truth be told, still today I don't play it in a way that could be called satisfactory... After that I was given the Green Hills. Not long ago, when trying to figure out how to make the computer play this in a human way, I discovered that it is not a simple tune. The amount of contrast between the longest note and the shortest gracenote (in the grip at the beginning) is greater than in most competition style 2/4s. This shocked and surprised me, and explained why beginners always have problems with it.

This is a point worth noting. “*Difficulty*” should be used to describe the level of contrast between long and short notes, and the amount of variety of length of gracenotes in tune. “*Intensity*” should be used to describe how 'black' the page looks – that is to say, how many embellishments and notes are crammed on to the staff. Intense tunes are not necessarily difficult. This is worth thinking about when deciding on tunes for your student.

Extending the 'Piping Muscle'

The 'piping muscle' is located in the mind. It can't be dissected, x-rayed or transplanted. However, like any other muscle, it can be developed through regular exercise.

Body-building depends on flexing a muscle until it breaks a little. As it repairs itself, grows back, it grows bigger because a message has been sent that it was too weak before. To make the muscles grow you should exercise to breaking point every second day, and eat things that help muscles grow. This gives time for the muscle to repair itself and material for it to do so.

The 'piping muscle', being the most important muscle the human race has ever known, grows back more quickly. It can be broken every few hours and grow back through mere rest.

The 'piping muscle' is that part of your mind devoted to 'piping'. It is your ability to concentrate, to play a whole tune without breaking down, to memorise tunes, to read new tunes, to remember tunes you hear. You will notice that in a good practice session you should get to saturation point. This is where the muscle has been slightly broken. That is when you stop.

The seven coins, five steps method described above is extremely intense and will take most beginners to breaking point very quickly. If you change task frequently, and appeal to different type of intelligence, you can make a whole lesson productive. If you only work with one type of intelligence, or don't vary your approach enough, the student will break too soon and half the lesson will be lost. Observation of the student will guide you in this.

It is desirable to aim to stretch the student's ability to concentrate on a single 'piping task a little bit in each lesson. If the goal is eventually piobaireachd, then the *Lament for the Harp Tree* needs to be a realistic goal...no small task..

This is of course another reason why lessons should include a variety of playing, learning theory, and tune theory. This is an aid not just in building a balanced musician, but in using time as efficiently as possible.

Transition to Bagpipes

This need not be at all difficult. Whilst it may be a controversial assertion, I believe that many 'pipers in the world are wrongly taught to “blow and squeeze” the bag. I believe the bag should be blown until it stretches, and let the natural contraction of the bag under pressure sustain the sound whilst the 'piper takes a fresh breath.

I teach this with the 'two minute trick' – blowing a continuous sound for two minutes with someone else holding the 'pipes by the drones stocks – and no-one touching the bag. The student will experience a sense of resistance when blowing into the bag and this sensation is something they should try to remember – it is a sign of good technique.

The logic behind not blowing and squeezing is that when you squeeze, you empty the bag of air. This means your next breath goes to filling it up again, only to be squeezed out once more. In other words, the bag will never be full and the arm will be required to control the pressure on the reeds at every moment and in full.

With the two minute trick, it is true that there will be a tiny drop in the pitch as the pressure in the bag falls. As the student progresses, they will learn to correct this by applying a minimum amount of weight on the bag with the arm. This is different to 'squeezing'. The bag will always be full, the arm will only ever have a minimal responsibility for pitch control, the 'piper will never be 'catching up' on breathing but will eventually be ahead of it and only ever hold the pressure using the diaphragm muscles. In the long run, this is much less tiring than 'blowing and squeezing'.

My preferred route is to first of all master the two minute trick, then go through all the exercises - scales, doublings, gracenotes, everything, seven times correctly before starting on any tunes. In the case of children, you can expect such a request to be ignored at home and the child to play tunes anyway. There is no real harm in this and it is sometimes advisable to turn a blind eye. In truth, such a revision of exercises and basic technique doesn't take very long if the student has already mastered the chanter and is very much worth the effort.

Tunes can either be started as tunes, directly imported from the chanter, or they can be programmed seven consecutive repetitions of each of the five steps discussed above. This second approach is particularly useful when the

student is being prepared for band playing, or when they have difficulties with getting used to the 'pipes (but not with blowing).

I have so far been unable to find a truly universal way of developing the lip muscles to handle the blowing. Maybe just breaking the muscles, resting them and then having another go is the safest way to get on top of this.

Likewise, dizziness seems inevitable. Reeds should not be too hard, but even the easiest of reed may cause dizziness for beginners.

In my experience, the biggest barriers to making the move to 'pipes would appear to be blowsticks that are too narrowly bored, bags that are too big, reeds that are too hard, blowsticks that are too long or too short and of course a lack of time and place to get down to the noisy business of practicing.

Wet chanter reeds, or the inevitable problem of reeds going out of tune are distasteful and may be solved by plastic chanter reeds. I have tried these options on many occasion and found that if the student has experience on different instruments, the constant struggle that beginners face with tuning may be off-putting. If the student is not very aware of the sound going wrong, or if it isn't going wrong too much, then my view is that cane is still better. Plastic 'pipe chanter reeds have got better in recent years, but can still tend to behave differently to cane reeds and continue to have a different sound.

I personally believe that putting drones on or off makes little material difference to the beginner if the reeds are balanced properly.

MSR – What, When and How?

This indeed goes back to the question of the 'piping muscle'. When the muscle is big enough to handle three four-parted tunes of high intensity, then the student is ready.

Typically it will take a couple of years to get to this stage and unless there is some other agenda, there is no need to rush. How do we get there?

Putting together three tunes requires the ability to think ahead whilst playing something. This means thinking of two tempi at the same time and two tunes at the same time. This skill can be developed on small medleys, as pipe bands tend to play. These medleys should be two parted tunes.

Duality of thinking can be achieved by using technical exercises of a particular format. For doublings for example, I suggest going up the scale with the note as a quarter (crotchet) followed by the two gracenotes separated by eighth (quaver) notes of the doubling, three repetitions on each note of the scale (sound “ta ta-ti” in NFM), and coming down twice as fast (eighth note and two sixteenths, “ta-ti-fi” in NFM), once on each note. This is horribly difficult, and is also a great way to warm up a band and get them thinking about playing technique together.

MSRs do not need to be very *difficult*, but they are *intense*. *Arniston Castle*, the *Shepherd's Crook*, *Alexander Kennedy*, *The Eight Men of Moidart*; these are all tunes that have relatively little variety of rhythmical duration in the embellishments. Tunes such as *Captain Norman Orr Ewing*, ironically (given this is a popular first competition march), has more variety in the embellishments, and while it is not very intense, it is quite difficult.

This represents a different way of thinking about difficulty, as discussed above. I strongly suggest forming an opinion on this.

Piobaireachd

Alas, the task of teaching piobaireachd, while simple in many ways, could fill a whole book by itself. The student has already been playing for a few years and has established a strong control over the instrument, and themselves. Piobaireachd is essentially a question of some new techniques, canntaireachd, and a new relationship to 'time' in music.

I believe the way I was taught, from aged fourteen (after playing five years), with a few clarifications, was an excellent path. My first tune was *Glengarry's Lament*, but I started it after a couple of months of learning some of the new embellishments (crunluath mainly) I would need for piobaireachd, and singing the tune in canntaireachd.

This general model is in my opinion a good idea. However, it was not quite as systematic as it could be. My suggestion is:

- all new embellishments
- learning canntaireachd in full (regularly translating tunes between staff notation and canntaireachd)
- singing several new piobaireachd in canntaireachd whilst learning techniques

Each of these three areas should be given equal emphasis during the lesson and practice time.

The moment in which the student should start playing instead of singing the tunes is the moment in which they have proven they can play all the required embellishments in a manner that sounds like the canntaireachd words.

As with earlier technique, piobaireachd embellishments can and should ideally be learned rhythmically and in the context of the way they will be played (leamluaths to E, taorluaths to low A).

An example of one embellishment should suffice to demonstrate why piobaireachd is more difficult to play than light music, and what level of understanding should ideally be put across:

Taorluath a mach – with the exception of D, the beat should land on the

melody note (thematic note). Each notated quarter note (crotchet) should be divided into three equal parts. The thematic note should be as long as the low Gs in the taorluath, with the D and E gracenotes proportionally shortened. The return to the thematic note will be on a point before the second third of the beat subdivision and tied to the rest of the note. This will give an effect of syncopation. Lest this verbal explanation be unclear (...) an illustration is below:

Example - Taorluath from A followed by taorluath a mach on B



For a taorluath a mach on D, the beat should land on the D in the throw, which means everything before that will be before the beat. The length of the low G will be a question of personal style.

In my opinion, the following embellishments should all be given at the outset so that when the student meets them in tunes they are not unusual:

Crunluath, crunluath a mach, dre, edre, dare, vedare, harodin, horodin, darodo, embari.

The question of time in music is somewhat more challenging and has occupied the best musical minds more or less since time began. In piobaireachd, time as a linear function should be suspended, and redefined as 'organisation of tension'. Notes happen one after the other, as do variations, but the essential musical message is carried evenly throughout the whole tune.

Relative tension in a musical phrase is given by the sum of dissonant consequent intervals together with tension against the drone. A further layer of definition can musically be given by highlighting specific sound events (notes) by accenting the embellishment accompanying them. The number of layers being measured, controlled and highlighted by a given player will be

their own personal decision and interpretation choice. Important is retaining the tension structure throughout each variation. This will mean that the later variations will have some irregularity in beat durations, which will reflect interpretation decisions earlier on.

These theories are fine if you are teaching piobaireachd for purely musical goals and satisfaction. If you have a competition agenda you will run into problems. Competition rhetoric in piobaireachd is its own field and works by its own rules. Here we could define the first approach as *expressionist* and the second as *classical*. Full discussion of these ideas really does deserve its own book.

As a safe approach for competition preparation, I would suggest taking samples from the many recordings and websites available of acknowledged master performances, and reproduce them wholesale in your student.

It should be commented here that new controversies have arisen in the last twenty years concerning things such as double echoes, phrasing, performance of embellishments and tempo. These controversies have been mainly opened up and led by Allan MacDonald and have come from an attempt to define an historically accurate style, related to and derived from Gaelic song. In relation to the musical text and canntaireachd, Allan's arguments are logical and convincing.

Historical performance practice is a field which exists in other types of music and should be taken in to consideration when making your own teaching decisions regarding piobaireachd in particular.

It should also be commented that early publication series such as Glens of Edinburgh also open questions about historical style of performing light music. Thankfully, though, that is comparatively less complex. This is not the place for such a discussion.

Students should listen to a wide range of piobaireachd to understand and 'feel' what they are trying to create. They should by this time in their 'piping career' be starting to form a sense of style, and the teacher ideally should be debating and discussing provocatively to open up the student to examine the foundations on which their stylistic decisions are being made. This will help develop musical awareness for piobaireachd learning.

Group Teaching

In any classroom situation the biggest challenge facing a teacher (excluding discipline) is differentiation (now not in the mathematical sense, but the pedagogical). Each student has individual needs which should be identified and addressed by the teacher in every lesson. Each member of the class (or band) should be developed somehow in every lesson. This is a tremendously challenging idea to internalize and respond to fully.

Teachers need excellent observation and short term memory skills to find, identify and remember issues to be addressed in each individual, they need a Multiple Intelligence toolbox of ways of explaining and demonstrating ideas, they need a series of exercises of varying difficulty to capture every need, they need to watch intently to see when attention lags in one student to capture that moment and keep everyone awake and working the whole time.

The goal of every lesson must be to change something. Change can be:

- acquisition of new knowledge or skill
- reinforcing existing knowledge or skill

The change is supposed to take place in the learner. Putting first things first means checking constantly whether the learner has changed something or not. Bloom's taxonomy (a definition of different levels of intellectual function) is something worth looking up and reading about here to have further ideas as to exactly what new knowledge/intellectual skill can be acquired.

The general principles outlined above stand true for group and band teaching – tell them what you plan to do, do it with them, lower your support so they do it themselves then, at the end, tell them what you have done, and give them something to do at home.

Even the very best 'pipers can learn from the very weakest, if they try and want to.

The best kind of lesson is when everyone is active and offers something. Craftsmen have a saying, “let the tools do the job”. In having students lead the lesson, they explain in various ways, using different intelligences and channels. They will do the hardest part for you, and at the same time, build

up your repertoire of explanations.

It may well be in the band context that you need to arrange the music into several parts or voices in order to address each individual need. There is no reason to be shy of this – personalized attention in a group makes the learner feel better about themselves and also has the function of committing them more to their place in the group effort.

If your group lessons are actually a pipe band you will need to pay a great deal of attention to the medium and longer term strategies. 'Making do' and 'fixing up' musical arrangements are a fine way to begin building a common understanding, and a very powerful tool in managing change, but when push comes to shove, in the final analysis, the weakest members need to be brought up to the level from which the entire band can work and go forward. The band is only as strong as its weakest member.

It is worth noting that often the weakest member has the highest motivation – they know they are weakest, but they lack some crucial information to get better. If this is the case in your band, it can be used as a motivational tool for everyone.

The Curriculum Of The Future

This is of course a chapter of pure speculation, intended to provoke thought. Often I personally have given thought to what 'pipers should be taught. As time goes by I become increasingly aware of idiosyncrasies in the way other musicians are taught. For example, everywhere I have been, organists are given a deeper and broader general musical training (beyond playing) than any other musicians in the classical tradition. This is probably because, in the main part, they are still being prepared for a specific function – that of music master in a church, where various skills will be needed for their daily tasks – skills that violin players don't really need.

The 'piping tradition, especially on and around the competition circuit, demands a quite amazing level of precision and skill, yet often 'pipers are allowed to develop with little or no effective musical literacy or broader musical knowledge. If 'piping is eventually to raise itself to the level of other instruments, in terms of status, breadth of application and context and musical possibilities, then we 'pipers need to raise our expectations of general musical training.

Here we come across a question about what type of music should take primacy – Beethoven, Shankar or MacCrimmon? What do we need to know as a worldwide practice?

There are some areas of study for us to consider which are relevant in all musical traditions:

- notation systems (we should know canntaireachd and staff notation, including various clefs and if we live in a country or area with something different then we should be at least familiar with it);
- rhythmical theory (essential for group playing);
- counterpoint (the whole idea of putting one voice in contrast to another within a set of rules);
- harmony (supports counterpoint and facilitates writing for other instruments to play with us)
- the concept of instrumentation (to help us play with other instruments)
- arrangement (to help us play with other instruments)
- playing snare drum and tenor drum (if we want to lead a pipe band we should be able to do these things, however basically)

Additionally we should know about history of 'piping – our own masters, our own famous bands, traditions, schools, styles.

Here it should be said that there is a tremendous amount of space for these questions to be properly researched. Certainly many of the theories I have heard from respectable authorities regarding 'styles' and 'schools' are meaningless nonsense with no scholastic or academic foundation. Simply put, too little worthwhile research has been done to date.

I would also recommend that a serious 'piper learns to play a different instrument too – a second study, maybe even singing. Other musicians do, so why shouldn't we? This is a great way to find parallels and to cross-feed ideas. Likewise, other traditions have instrument-specific issues which may be able to deepen our understanding of 'pipe music and 'pipe learning. Certainly piano playing has greatly influenced my thoughts about 'pipe teaching. I have always believed that one of the best ways to practise 'piping is to sit down and play the piano (especially J.S. Bach).

As our tradition spreads across the globe, the musical expectations from different communities can all bring something to our instrument. As different educational institutions across the globe start to offer degrees and such courses in 'piping, or traditional music, an increase in variety of what is being offered is inevitable. This will in turn further diversify our tradition. It is my belief that more variety is a good thing and that there is room on the planet for many more university and conservatoire courses in and around bagpipes.