# PRINCIPLES OF LEARNING FOR DRESSAGE INSTRUCTORS

## The Learning Experience

As a dressage instructor, you will encounter many individuals, all with different objectives of why they want to learn dressage and with different expectations of the learning experience. To increase trainer versatility and the overall effectiveness of the training, instructors need to develop the ability to identify and assess three important factors that influence the learning process. These are:

- PERSON
- TASK
- SITUATION

In addition to identifying the qualities associated with each of these factors, one must also consider how each factor interacts with the other. For example, rider A may have natural ability, be very comfortable on and around horses, and have a high motivation for learning dressage. Rider B on the other hand may not be very athletic, feel intimidated by horses, and is only learning dressage for social reasons. When presented with the same motor task such as sitting the trot on the lunge line, these individuals will approach the task differently and master the task at a different rate. Rider A may view the task as challenging but fun and want to continue even when the session is over, whereas rider B may view the task as very difficult and frightening, and will only endure it as long as necessary or request to quit before the session is over.

Your assessment of the interaction between the person, task and situation will be used in all phases of your instruction including: the types of goals you assist the rider in setting, the length and intensity of the training session, the type of feedback you provide and the priority of skills you teach.

### *Person*

In designing a training session the instructor needs to know who the person is and what personal qualities he or she brings to the training session. Each rider will be unique in the qualities he brings to the practice session. Some examples of personal qualities that can contribute to differences in the rider's movement are given in the following table.

| Personal Quality | Example |
| --- | --- |
| Ability | Flexibility, coordination, trunk strength |
| Attitude | Open, closed, or neutral to new experiences |
| Body type | Stocky, tall, short, lean, muscular |
| Fitness level | Low, moderate, high |
| Maturational level | Immature, intermediate, mature |
| Motivational level | Low, moderate, high |
| Learning styles | Visual, kinesthetic, auditory |

### Ability

It is important to identify each student's abilities to determine his or her strengths and weaknesses. Trainers can use this information in predicting students' success at certain tasks based on their strengths. Students will be encouraged to continue their efforts if they achieve some successes in each training session. An effective lesson planning strategy is to include a difficult task between two easy tasks in which the student is likely to achieve at least a moderate amount of success. This will preserve the student's motivation and not diminish the enjoyment of the session.

### Attitude

As a trainer you need to develop teaching strategies effective for all types of attitudes. Some individuals are very open to learning new experiences where others will not be as receptive to learning anything new.

### Body Type

Many times a student's physique will affect his ability to properly influence the horse. Trainers need to recognize that

sometimes this may be a limiting factor for some students. Body physique may also facilitate the rider's ability to influence the horse.

## Fitness Level

Fitness level of the rider can also be a limitation or an advantage for the rider. Fitness level should always be considered when determining the length of a practice session.

## Maturational Level

Maturational level is valuable to assess because it will guide the trainer in selecting appropriate instructional feedback that parallels the maturity level of the student.

## Motivational Level

The rider's motivational state will play a significant role in the level of intensity of the training session. A highly motivated rider will want and expect to be challenged, whereas a less motivated rider will be intimidated by too many tasks to learn or by a fast paced training session.

## Learning Styles

Not everyone learns the same. There are a number of different learning styles. A learning style refers to the way you prefer to take in and make sense of information. Identifying the rider's preferred learning style can help you take advantage of the student's strengths and help compensate for weaknesses. Knowing a rider's learning style can make it easier for him or her to grasp new material and make the training session more efficient. An exercise to illustrate this point is to sign your name on a piece of paper. Now with your non-dominant hand sign your name again. You probably noticed that although you were able to accomplish the task, signing your name with your non-dominant hand was more difficult and required a lot more effort than when you used your dominant hand. This is exactly what occurs when riders are forced to learn in a style that is not their preferred style. There are many different classifications of learning styles. The most basic classification of learning styles includes visual, kinesthetic and auditory.

The majority of people tend to be visual learners. They learn best by seeing. They find demonstrations, drawings, figures and pictures to be the most useful learning aids. You can identify these learners because they often use visual imagery when they communicate with others.

Kinesthetic learners make up a smaller but significant portion of the population in terms of learning styles. These types of learners are particularly aware of feelings and the sense of touch. They are sensitive to other people's emotions and they tend to focus on feelings rather than reasoning or logic. The are good at applied hands-on tasks, usually find doing to be the best way of learning, and prefer to walk through a demonstration.

Auditory learners make up a third approach to learning. They often feel most comfortable learning and understanding concepts through lectures or discussions. They are good listeners and often repeat words or phrases out loud to themselves when they are trying to fix information in their minds. They are sensitive to sound and may lose their concentration when there is too much noise.

No one learning style is better than the other. They are just different approaches that each individual has become accustomed to using in understanding new concepts.

Trainers who have the ability to recognize learning styles will be able to structure their practice sessions and provide feedback to the rider in his or her preferred learning modality. This will serve to improve the communication of information, and ultimately result in more effective instruction and produce an efficient practice session.

The items listed above are not an exhaustive list of personal qualities. Many possibilities exist; for example, cultural background and prior athletic training may be additional personal qualities that may influence the learning experience. Trainers must always be keen to other personal traits that may influence the learning experience.

Trainers need to remember each rider is unique with respect to the personal qualities they bring to the learning experience. Trainers should maximize each individual's learning experience by designing experiences that are relevant to the needs and interests of the rider.

## *Task*

A trainer must also consider the demands of the task or the motor skill to be learned. Not all motor skills require the same abilities and may differ from each other in terms of strength, timing, coordination, and flexibility requirements. Tasks may also differ in terms of whether they require fine or gross motor control. Additionally, some tasks may inherently be relatively simple while others may be more complex in nature. For example, teaching the aids for a canter depart versus teaching the aids for a flying change. The aids for the canter depart are fairly simple, whereas the timing requirement for a flying change in addition to the correct leg and rein aid increases the overall complexity of the task. An effective trainer must be familiar with the abilities and skills required for the task in order to correctly teach the skill and have the student be successful in executing the task.

In dressage, skill selection should be guided by the qualities contained in the Pyramid of Training. These qualities are reflected in specific movements as riders advance through the levels of dressage. Theoretically, the task demands at higher levels are more difficult and complex than at the lower levels. Although the skills required in dressage may be predetermined to some degree and progress from easy to more difficult tasks, instructors must be aware of the rider variables that may interact with each movement as they select their approach to instruction. For example, one rider may perceive learning to sit an extended trot as an easy task, while another person may find this task very difficult due to personal variables.

## *Situation*

The conditions in which a rider learns and refines a task should also be an important consideration. Several environmental conditions impact the learning experience. For example, some riders learn best when they are in a group situation, others may prefer to be the only person in the arena. Additionally, it may make a difference whether or not the session is open or closed to spectators. When instructing minors, trainers need to be aware of the presence or absence of the parent(s) and how that affects the learning experience. Other environmental factors that may impact the learning experience may include the quality of the arena footing and weather conditions.

In equestrian events such as dressage, the horse constitutes an integral part of the learning experience. Therefore, careful consideration must also be given to qualities of the horse. These qualities include the level of training of the horse, the soundness and overall fitness of the horse, the horse's temperament and overall fit with the rider's qualities.

Finally, trainers must consider the context in which the motor skill is going to eventually be performed. For example, a recreational rider with no interest in showing may only aspire to be able to ride the dressage movement during a lesson in her home arena. Another rider may aspire to execute riding skills in a show competition environment. The demands of the show competition environment may also differ, for example, riding in a championship class or riding at an international championship such as the World Games or the Olympics. Each of these contexts has substantially different demands that require specific criteria of motor skill execution.

It is the interaction of these three factors (person, task and situation) that determines the content and flow of the training session. In the pages to follow, specific examples will be given in relation to the interaction of these three factors, person, task and situation, and how they influence goal setting, the type and amount of feedback, choice of motor skill to be learned, and the appropriate level of movement accuracy in any given instructional context.

# Stages of Learning

In addition to knowledge about the interaction of person, task and situation, it is important for trainers to understand how individuals learn and be able to recognize the stages of learning.

When teaching motor skills it is important to be aware of the stages of learning through which an individual progresses while learning a new motor task. The ability to recognize the various stages of learning will provide information that will guide your lesson planning and increase your effectiveness as an instructor.

Most learning theorists agree there are three stages to learning a motor skill. These stages are the verbal-cognitive stage, the motor stage and the autonomous stage.

### *Verbal-Cognitive Stage*

The initial stage of learning is labeled verbal-cognitive because at this stage riders are trying to conceptualize the components of the task. The individual expends much mental energy in her attempt to get the idea of the movement. Riders need to think about every aspect of the movement and about what needs to be done at each phase of the movement to accomplish the motor task. Some riders engage in a lot of self-talk during this stage, verbally guiding themselves through their actions.

For example, a novice rider learning the aids for a canter depart initially will have to think about the sequence of the aids, that is, position of the outside leg, inside leg, outside rein, and inside rein, as well as the seat aid. As they are riding, novice riders may be thinking to themselves or saying to themselves 'slide the outside leg back behind the girth,' etc.

Riders are using cognitive and verbal processes in order to problem solve. Because of the time it takes to process all of this information, the rider's movements at this stage are generally stiff looking, the timings of the aids is generally inaccurate, and the execution of the movement is very inconsistent. Riders lack confidence at this stage and typically are hesitant and indecisive about performing the task.

### *Motor Stage*

With practice, riders eventually solve most of the strategic or cognitive problems and have attained a notion of the general movement pattern. Less mental energy is expended on what to do and the rider's attention shifts to refining, modifying and adapting the general movement pattern. Consequently, the execution of the movement becomes less stiff, more accurate and more consistent. Therefore, in our example of novice riders learning the canter depart, at this stage they are now focusing more on motor aspects of the movement, such as how far to slide the outside leg back, how much rein pressure they need, and the timing of the aids. Also, by the end of this phase riders should be able to adapt and execute the movement under different environmental conditions. For example, initially the novice rider may only be able to successfully execute a depart coming out of a corner or on a 20-meter circle. However, through practice novices will learn to adapt the movement so that they become proficient at executing a canter depart at any point in the arena. In this stage the rider is more decisive about employing the aids and has fewer errors in executing the movement. Riders will spend a considerable amount of time in this stage compared to the verbal-cognitive stage.

### *Autonomous Stage*

After extensive practice, riders reach the stage of learning that is characterized by performing the task effortlessly and automatically. The movement is performed without having to consciously think about the sequence or process of the movement and as a result this frees up more mental capacity. The rider can use the available mental capacity to focus on the more critical elements of the movement to achieve superior performance.

More importantly at this stage, riders have developed the ability to detect and correct errors. The ability to detect and correct errors enables the rider to make adjustments during the movement so that the movement can be executed better. For example, is the horse absolutely straight, is the horse's poll the highest point, or is the horse's inside hind leg coming under enough, etc.

It is difficult to assess when a rider has progressed from one stage of learning to the next. The end point of one stage and the beginning of the next stage are not always distinct. Instructors should look at the characteristics of movement behaviors to make a reasonable judgment about the stage of learning in which a rider is currently operating. The ability of the instructor to assess the rider's stage of learning will increase the instructor's effectiveness because it provides information important in the decision to provide appropriate level and type of feedback for the individual (see section on feedback).

### *Movement Behaviors Associated with Motor Learning Stages*

| Cognitive-Verbal Stage | Motor Stage | Autonomous Stage |
|---|---|---|
| Stiff-looking | More relaxed | Automatic |
| Inaccurate | More accurate | Accurate |
| Inconsistent | More consistent | Consistent |
| Slow, halting | More fluid | Fluid |
| Timid | More confident | Confident |
| Indecisive | More decisive | Certain |
| Rigid | More adaptable | Adaptable |
| Inefficient | More efficient | Efficient |
| Many errors | Fewer errors | Recognizes errors |

# Goal Setting

Goal setting is a powerful technique that facilitates the learning experience in three important ways. First, goal setting increases the rider's attention focus. By setting goals, the rider directs his attention to the most important tasks and avoids being distracted by less important things. Second, goals increase the rider's motivation and effort. Goals act as markers against which riders gauge their progress. This performance feedback can motivate riders to maintain their current level of effort if they are doing well, or to make a greater effort if their initial attempts fall short. Finally, setting goals increases the rider's confidence and reduces anxiety. When riders set and reach goals, they generally feel more confident about their abilities. When riders feel more confident they become more relaxed, and practice and perform with less anxiety.

The trainer should always inquire about what goals the rider would like to achieve. Goal setting is a collaborative process that takes place between the rider and the trainer. When athletes participate in the goal setting process, they are more committed to achieving their goals and they usually have a better understanding of the purpose of different training exercises.

The trainer needs to recognize the importance of designing a training program that is consistent with the rider's desires and personal qualities. A trainer should resist imposing goals on a rider that are inconsistent with the rider's intentions or desires. For example, a rider may wish to learn the principles of dressage purely as a recreational activity, or solely to improve her seat or the ability to control her equine partner while hacking in fields. It would be inappropriate for a trainer to impose a goal of performing in a show for this individual. However, it is appropriate for a trainer to modify a rider's goal to make it appropriate in terms of the rider's ability to realistically achieve the goal. For example, a novice rider may set a goal of riding a Grand Prix test in the show arena. A trainer should never discourage such a goal but is obligated to educate the rider in the requirements of accomplishing such a task and then prioritizing the skills based on the rider's current level of proficiency. A possible appropriate response from a trainer might be, "In order to be a Grand Prix rider, you must have a quiet and effective seat. Therefore, achieving this seat should be one of your first goals."

Athletes should be encouraged to set long-term and short-term goals. The terms long and short are relative, meaning to say one rider may set a long-term goal that will take two years to attain, while another rider will set a long-term goal that might be attainable in a few months. When asked to set goals, most athletes tend to identify long-term goals such as wanting to ride at least one level above their current level of proficiency or scoring high on a test. Sport psychologists have recognized that in addition to long-term goals, short-term goals are needed so that athletes do not lose sight of their long-term goals. Short-term goals act as a road map of the progression of skills needed to achieve the long-term goal. When athletes achieve short-term goals and see improvements in their performance it enhances their motivation and keeps them engaged in their efforts to pursue their long-term goal.

When setting goals, they should always be stated positively. That is, identify behaviors to be exhibited rather than behaviors that should not be exhibited. For example, "I want to ride without looking down at my horse all the time" is a negative goal that focuses the rider's attention on what she shouldn't do. Whereas, "I want to ride looking ahead through my horse's ears" is the same goal stated positively. This positive goal setting strategy helps athletes focus on success instead of failure.

The effectiveness of goal setting depends upon the types of goals selected. There are two distinct types of goals, outcome goals and action goals. Outcome goals focus on the end result of the activity such as "I want to qualify for regional

championships" or "I want to win my class." Action goals on the other hand identify specific tasks that direct the rider's attention to what needs to be done to affect a superior performance.

Although it is not incorrect to set outcome goals, these types of goals are not as effective as action goals because they are generally outside the athlete's control, lack direction in how to achieve the goal, and many times focus the athlete's attention on irrelevant factors. Let's take the example of wanting to qualify for a regional championship. This goal is beyond the rider's control because one does not have control over the ability of other riders or the quality of horse they may be riding. Also, the rider does not have control over the judge's perception and how they may score during the competition. Setting a goal of qualifying for a regional championship does not provide information to the athlete of how to accomplish this or what to work on, as stated, it is simply a desire. And finally, this goal focuses the athlete's attention on an end result, which if not attained would highlight the failure rather than the improvements that the rider attained in his efforts to qualify for the regional championship. Outcome goals are useful in identifying an athlete's desires and aspirations of what they would like to accomplish. Once an outcome goal is identified a useful strategy is to work backward from that point to set action goals that lead to the achievement of the outcome goal.

Action goals are objectives that focus attention on the rider's behavior. This may be learning a new skill or improving the rider's skill execution relative to past performance. Action goals identify the specific behaviors the rider wants to accomplish. To increase the effectiveness of action goals they need to be specific, measurable, attainable, realistic and timely. It is helpful to use the acronym SMART to remember these guidelines for setting action goals.

### Specific
Action goals need to be concrete, specific tasks the rider wants to accomplish. Goals such as doing one's best or becoming better are least effective because they lack specificity and do not give the rider direction as to what she needs to do.

### Measurable
Goals should be expressed in terms of specific measurable behaviors. For example, "I will ride my canter depart exactly at the letter C." A good criterion for a measurable goal is whether an observer (e.g., a trainer or judge) can readily assess goal attainment. This is important because without objective measures goal attainment cannot be determined. The measurement criteria for determining goal attainment should be clearly stated in the goal.

### Attainable
In order to achieve goals, achievement strategies must be identified and integrated into the goal. For example, how many times a week will the rider work toward the goal, for how long and under what conditions.

### Realistic
The goal needs to be within the reach of the rider's ability. An unrealistic goal that exceeds the ability of the rider will lead to frustration and failure. Set hard goals that are just out of reach but not out of sight. Goals should be set that are difficult enough to challenge riders but realistic enough to achieve.

### Timely
A date to goal achievement should be determined and stated clearly in the goal.

Once the rider and the trainer have established SMART goals the rider should be encouraged to write them down and keep them visible. It is not enough to just think about your goals. Goals that remain only in your mind are easily forgotten or changed. It is important that goals be written down and then put in a place where they can be seen every day.

Goals are meant to be flexible and adjustable. It is almost impossible to be able to predict with complete accuracy when a rider might attain a set goal. If a rider has set a SMART goal but finds the goal will take longer than originally estimated it is acceptable and advisable to adjust the time frame. If a rider attains the goal early she should be encouraged to set a new goal. Remember goal setting is a tool to increase riders' motivation and help them focus on the most important tasks or skills to be learned in reaching their fullest potential as dressage riders. Every time a rider achieves a goal, it is important for trainers to recognize the student's accomplishments. By doing so, trainers facilitate the student's confidence which will serve to promote more effort and motivation for future goals.

In assisting the rider to set SMART goals it is imperative that the trainer consider the 'Person, Task, Situation' model. The trainer needs to know the answer to these three questions:

1. Who is the person?
2. What is the task they want to accomplish?
3. Where do they want to be able to perform the task?

Only when a trainer has knowledge of the person, the task and the situation will they be able to effectively guide the student to goals that are specific, measurable, attainable, realistic and timely.

# Feedback

As a natural consequence of riding, riders constantly receive information about their skill execution from many sensory sources: visual, auditory, and kinesthetic. Riders can see whether or not their voltes are round, they can hear the rhythm of the horse's footfalls and they can feel the horse's mouth in the reins and the horse's back through their seat. This type of information is referred to as intrinsic feedback and can come from sources outside the body or from inside the body. One of the goals of dressage instruction is to teach students to attend to the appropriate intrinsic information that will allow them to detect and correct their own errors and to consistently ride the movement correctly. To accomplish this, trainers must provide riders with what is referred to as augmented or extrinsic feedback. Extrinsic feedback is sensory information provided by an outside source that is in addition to, or augments, intrinsic feedback. Extrinsic feedback about errors provided by the trainer is one of the more important sources of information for riders so that they learn correct intrinsic cues for performing the task correctly.

In addition to helping riders direct their attention to appropriate intrinsic information while performing a motor task, extrinsic feedback reinforces riders for correct performance or discourages incorrect performance. It can serve to provide riders with information about the nature and direction of their errors and recommend ways of correcting them. Extrinsic feedback is often very energizing and can increase a rider's motivation.

Although there are many positive aspects to providing extrinsic feedback, riders can also become so dependent on this type of feedback that it interferes with their awareness of intrinsic feedback and their performance suffers when the extrinsic feedback is withdrawn. Often trainers become frustrated when students who show high ability during the practice session do not perform well in the show arena. Many trainers attribute poor student performance in the arena to performance anxiety. Although performance anxiety may contribute to the student's poor show arena performance it is often the result of the trainer providing too much extrinsic feedback during the practice session which interfered with the rider's ability to learn the appropriate intrinsic cues. During competition, extrinsic feedback provided by the trainer is forbidden. Therefore, the rider must rely only on performance cues provided by intrinsic feedback. If the student never learned these intrinsic cues, naturally the performance will be poor.

Moreover, it is understandable under these circumstances why the rider feels anxiety during the performance.

To increase effectiveness and avoid the dependency-producing effects of extrinsic feedback, trainers should consider four important factors when providing extrinsic feedback to riders. First, the content of the feedback should be prescriptive, i.e., the intent of the feedback should be to inform the rider about specific changes they need to make in order to improve the execution of the skill. Trainers sometimes only tell riders about the errors they made without telling them how to fix them. Such descriptive feedback is not as effective as providing riders with prescriptive feedback. An example of descriptive feedback is simply telling a rider that was not a very good half-pass. On the other hand a trainer may offer prescriptive feedback by telling a rider to improve that half pass, point the shoulders on a diagonal line and then ride a haunches in.

Second, trainers need to consider the amount of information contained in the feedback. With very simple tasks a rider may be able to attend to more than one feature of the movement but as the task complexity increases the feedback information should decrease. Trainers need to be aware of the potential of overloading the student with too much information. There is an upper limit to the amount of information that a rider can process. As a general rule, when providing feedback the trainer should restrict feedback to just one feature of the rider's movement that is the most fundamental for task improvement. Once the rider masters that feature, the trainer can provide feedback about the next most important feature. For example when introducing the rising trot for the first time a trainer may first focus the rider's attention on the two

beat characteristic of the horse's trot and provide feedback to assist the student in synchronizing his body movement with the horse's rhythm. Once the rider accomplishes this component of the rising trot the trainer may focus the rider's attention on the carriage of his upper body. Finally, the trainer may then provide feedback about correct leg position.

Third, trainers should consider the preciseness of the extrinsic feedback. Increasing the precision of the feedback enhances learning only to a point, beyond that point additional increases in feedback precision result in little additional learning because the information is meaningless and cannot be utilized. For example, informing a rider that the angle of the leg yield was too steep is more precise than saying the leg yield was not very good. By indicating to the rider the leg yield was too steep, the trainer is providing information about the direction of the error, whereas just saying the leg yield was not very good does not provide the rider with any useful information to correct or improve her performance on the next attempt. If the trainer attempted to further increase the precision of the extrinsic feedback by providing information about the magnitude of the steepness of the angle, e.g., the leg yield was 5 degrees too steep, this increase in precision would produce little if any additional learning because unless the rider can conceptually envision exactly 5 degrees, it is not useful information. Generally, feedback about the direction of the rider's errors (the angle of the leg yield was too steep) is more useful than feedback about the magnitude of the errors (the angle was off by 5 degrees). Novice rider errors are usually so large that precise information about the exactness of the movement does not matter. However, expert riders may benefit from somewhat more detailed feedback because they want to make more precise adjustments in their movements. Of the two aspects of error, direction information is more important than magnitude information. Feedback about magnitude is of little use unless riders are also informed about the direction of their errors.

Fourth, instructors need to consider the frequency in which extrinsic feedback is presented. As stated earlier, when extrinsic feedback is presented too often it interferes with the rider's ability to attend to appropriate intrinsic feedback and inhibits the capability to detect one's own errors. When the extrinsic feedback is withdrawn the rider's performance deteriorates. To avoid having a rider becoming too reliant on extrinsic feedback, trainers should provide frequent feedback in the early stages of learning to assist the rider in conceptualizing the general movement components of the task. Once the rider has a notion of the general movement pattern, trainers should begin to reduce the frequency of feedback as riders become more skilled at performing the task.

The timing of the feedback is also important. For example, providing instantaneous feedback inhibits learning, probably because it interferes with the rider's intrinsic feedback processing and development of error detection capability. A useful strategy in providing extrinsic feedback that provides riders with an optimal amount of information without creating a feedback dependency is called summary or average feedback.

Trainers can optimize the amount of feedback and reduce the rider's dependency effects of extrinsic feedback by providing riders with summary feedback. The trainer may have a student ride a four-loop serpentine at the canter across the arena with a flying change upon crossing the centerline. At the completion of the four-loop serpentine the trainer would summarize the student's performance on each of the three flying changes. Summary feedback is effective because it affords riders the opportunity to key into intrinsic feedback cues while they are riding but they also have the advantage of receiving extrinsic feedback about their performance strategy at the end of the trials. Withholding the extrinsic feedback until the end of several attempts minimizes the dependency-producing effects of feedback.

In applying the factors for increasing the effectiveness of extrinsic feedback mentioned above it is useful to use the Person x Task x Situation paradigm. For example, deciding on the appropriate amount of feedback is dependent on the type of task, i.e., simple versus complex. A rider will be able to process more information from the trainer if the task is easy rather than difficult. As the complexity of the task increases, the rider's available mental capacity for additional information decreases. Therefore, feedback information provided by the trainer should also decrease otherwise the student will become overloaded with information and will not be able to process the trainer's feedback.

Additionally, the degree of precision is contingent on person variables. For example, novice riders will not benefit from detailed feedback whereas highly skilled riders may need more precise feedback in order to refine their movements.

Similarly, frequency of feedback is dependent on the situation and the stage of learning. When riders are in the early stages of learning, frequent feedback is needed in order for them to get a general idea of the movement. As riders move to more advanced stages of learning, less frequent feedback is more beneficial to learning so that the rider does not become dependent on extrinsic feedback.

# Emotional Control and Performance

An athlete's ability to control his or her emotions has a significant impact on performance. It is not uncommon in sporting events such as dressage to witness very accomplished and highly skilled riders not performing to their fullest potential particularly in a competitive situation. The skill level of the riders certainly has not changed, their physiological capacity hasn't changed and their biomechanical efficiency hasn't changed. The fluctuation in performance is generally caused by fluctuation in the rider's emotional control. Most riders' trainers explain these types of situations in terms of a lack of concentration, or choking under pressure or not being psyched-up for the event. All of these explanations are related to the topic of emotional control and more specifically to the concept of arousal. In this context, arousal refers to the level of activation or excitement of the central nervous system (CNS). The arousal state encompasses a continuum of CNS activity that ranges from deep sleep to extreme excitement. The quality of an athlete's performance often depends on the athlete's arousal level.

Often arousal and anxiety are inappropriately used synonymously. As mentioned above, arousal refers to the activity of the central nervous system. It is a neutral term that refers to the physiological intensity of the CNS and does not indicate emotions, whereas anxiety refers to the interpretation an individual assigns to the changes in activity of the autonomic nervous system. Simply stated, anxiety may be described as a subjective feeling of apprehension and increased physiological arousal. It is closely related with the concept of fear. Both positive (joy) and negative (fear) emotions can cause an increase in arousal levels and will produce the same effect on performance. Therefore, arousal level is important regardless of the emotional interpretation attached to it. However, the trainer's recommendation to riders who are over- or under-aroused due to feelings of joy and fear will obviously be quite different.

To describe the relationship between arousal and performance, sport psychologists often refer to the inverted-U hypothesis. The inverted-U hypothesis suggests that an individual's performance will increase as the arousal level increases but only to a certain point, whereby further increases in arousal will cause the individual's performance to deteriorate. The inverted-U hypothesis thus suggests that a moderate amount of arousal is optimal for excellent performance and if a rider is under- or over-aroused her performance will be diminished.

When arousal levels are low, a rider's performance is diminished because the rider's perceptual field is very wide and they are likely to pay attention to cues that are irrelevant to the task being performed. For example, during a competition, a rider preparing to halt at C notices the judge is looking down or that her parents just arrived in the stands. Neither of these cues is important or relevant to the rider for executing the task. Consequently, her performance will not be optimal. As arousal increases to a moderate or optimal level, a rider's perceptual field decreases thereby increasing the rider's focus on cues important to the task. Therefore, in the example of the rider preparing to halt at C, the rider's perceptual field has now narrowed to the extent the rider does not notice the judge's actions or the presence of her parents. The rider's perceptual field only includes cues relevant to performing the halt at C, i.e., location in the arena, appropriately timed half-halts, etc. Arousal increase beyond this point results in further perceptual narrowing, and performance deteriorates because the rider's perceptual field has become so narrow she is unaware of cues relevant to task execution. Extending the above example, as the rider prepares to halt at C, her horse momentarily spooks in the corner that causes an increase in the rider's arousal level. This increase in arousal causes the rider's perceptual field to narrow to such a point the rider does not attend to the relevant cue such as the approaching letter C and overshoots the halt.

To determine the optimal level of arousal for dressage riders, the person x task x situation paradigm is particularly useful. The optimal level of arousal varies as a function of personal qualities of the rider, the complexity of the task and the situation or environment encompassing task performance. Trainers need to consider all three factors in order to assist riders in regulating their arousal activation to an optimal level for high performance.

In this context the greatest individual difference influencing arousal level is personality. People differ with respect to their normal scope of arousal and the degree to which they perceive situations to be threatening. Individuals who normally operate at higher levels of arousal are going to be more likely to become over-aroused than riders who normally operate at lower levels of arousal. Interestingly, each individual performs best at different levels of arousal. If an athlete is typically high-strung, even a small amount of arousal can put him or her over the top on the inverted-U curve. On the other hand, if the athlete is typically calm, cool and collected, he or she will be able to tolerate much higher levels of arousal without suffering a performance decrement.

Arousal levels will also fluctuate with the rider's prior experience with a task as well as amount of practice. The rider

that is more skillful is more likely to compensate for the detrimental effects of increased arousal than the individual who is less skillful. In fact, an expert rider may need to psych-up for the event whereas a novice rider may require calming to perform optimally. For example, an advanced rider showing at First Level will be able to tolerate higher levels of arousal much more effectively than a novice rider showing at the same level. The optimal level of arousal for a novice rider will be considerably lower than the optimal level for an expert performing the same task. This concept explains why highly skilled riders perform better in competitive situations.

The nature of the task also impacts the level of arousal for optimal performance. In determining optimal arousal for successful performance, trainers need to analyze the task in terms of motor control requirements (gross versus fine) and the cognitive complexity of the task. Tasks that primarily involve fine motor control (i.e., small muscles) are performed best when the athlete is at a lower level of arousal than tasks requiring gross motor control (i.e., large muscles). Dressage is a sport that requires the use of both gross and fine motor control. Riders use large muscles of the upper body to maintain their balance on the horse and large lower body muscles to influence the horse, e.g. half-halting requires gross muscle control in order to use the seat effectively. Dressage also requires fine motor control such as the use of small muscles in the fingers to administer rein aids.

The cognitive complexity of a motor task is determined by the amount of precision and steadiness required by the task, the number of decisions required, the speed requirement of the decision, and finally, the sequence of decisions.

Dressage is obviously a sport that requires precision and steadiness. While performing a test there are many decisions a rider must make, often with split-second timing. Any given movement in dressage requires the rider to decide the appropriate application of the aids. This makes dressage a very cognitively complex sport.

Finally, trainers need to consider the situation in which the rider will be performing the task. Important with regard to arousal levels is the rider's perception of the situation and whether or not he perceives the situation as threatening or non-threatening. One possible threatening situation could be the horse's temperament and its response to external influences. The more the rider perceives such a situation as threatening, the higher his arousal level will be. As previously discussed, many factors influence the rider's perception of the situation, e.g., weather conditions, footing, presence of audience, temperament of the horse. Consequently, situational factors often precipitate changes in rider arousal levels.

Optimal levels of arousal that produce high performance can be determined only when all of the above factors have been considered. The identification of the key factors involved in producing the rider's arousal level will prove invaluable in determining the zone of optimal functioning for that particular rider. Also, trainers will be able to employ appropriate instructional strategies (i.e., psyching-up or calming) and provide effective feedback in preparing the rider for successful skill execution.

Although low arousal can adversely affect high performance, most athletes' performance suffers from too much arousal. It is important that trainers recognize the behavioral signs of over-arousal and become familiar with the physiological signs associated with high arousal in order to ask riders appropriate questions to assess these physiological signs. The behavioral signs associated with high arousal may include uncharacteristic rapid speech, lack of attention to instruction, pacing or fidgeting and yawning. Physiological signs of over-arousal include increased heart rate, increased rate of breathing and tightening of muscles. These behaviors are an indication that the rider is exceeding the optimal level of arousal and a trainer needs to intervene in lowering the arousal level.

The most common mental preparation strategy used by coaches to reduce high arousal is relaxation. Learning to relax involves teaching athletes to distinguish between tension and relaxation. To accomplish this goal, many trainers use a technique referred to as progressive relaxation. This technique teaches athletes to progressively tense and relax all major muscle groups in the body, thereby sensitizing them to recognize the muscle sensations related to both tension and relaxation. Initially, the exercise takes about 30 minutes to complete in order for athletes to effectively release all muscle tension and achieve a state of relaxation. With practice, athletes can achieve the same state of relaxation in a matter of only a few minutes or less. Riders and trainers recognize the need to practice skill execution of dressage movements regularly. It is just as important that trainers encourage students to practice anxiety-reducing approaches on a regular basis as well.

In some cases, a rider's anxiety level may become so problematic that it is beyond the expertise of the trainer. In cases

such as this, as well as other situations that involve a rider's psychological well-being, trainers are encouraged to refer these riders to a qualified sport psychology professional.

## The Role of a Sport Psychologist

To be successful at dressage requires great physical skill. Riders spend hours each day practicing and honing the physical execution of guiding equine partners through dressage movements. Many successful dressage riders have also recognized that in addition to the physical prowess requirements of dressage, it also requires effective mental skills such as controlling emotions (e.g., anxiety), excellent concentration, appropriate attentional focus to the task at hand, and the ability to stay mentally relaxed but at the same time be able to respond to unexpected occurrences. Because of the high mental demands of dressage many riders at all levels of experience are now seeking the expertise of sport psychologists or performance enhancement consultants (as they are sometimes referred to) to help them develop mental skills and enhance their dressage performance to the fullest potential.

As indicated above, the primary focus of a sport psychologist or performance enhancement specialist is to provide mental or psychological skills training to athletes to positively enhance their athletic experience. A sport psychologist does not provide dressage training-that is the role of the trainer. A sport psychologist complements and enhances the trainer's efforts to teach motor skills by mentally preparing the rider for instruction to facilitate quality practice and by removing mental barriers to successful performance execution. Trainers and sport psychologists serve two different functions but both functions may equally impact the rider's success.