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From Pillars to Pyramids: Using Graphic Organizers in the Private Studio

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Abstract
The sheer complexity of teaching stringed instruments can be overwhelming. In addition to the technical skills specific to each instrument, students need also to be taught terminology, composers' history and style, basic theory, memorization, and a solid sense of self-esteem that enables stage confidence. To improve efficiency and effectiveness, the multiple elements of teaching an instrument can be organized into three categories: skills, knowledge, and affective domain.

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stringed instruments, skills, knowledge, affective domain, graphic organizers, violin pedagogy, string pedagogy, effective violin teaching, violin technique and improvisation

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The sheer complexity of teaching stringed instruments can be overwhelming. In addition to the technical skills specific to each instrument, students need also to be taught terminology, composers’ history and style, basic theory, memorization, and a solid sense of self-esteem that enables stage confidence. To improve efficiency and effectiveness, the multiple elements of teaching an instrument can be organized into three categories: skills, knowledge, and affective domain.

If string teachers omit an area of focus, they risk the musical futures of their students. Yet limited exposure to students makes this complete teaching difficult to accomplish. To complicate matters, teaching a skill requires a different approach to teaching a fact or an emotional response. The use of graphic organizers can help string teachers visually conceptualize the complex elements of teaching and the various approaches to teaching them. If used effectively in lessons, these graphic organizers can optimize the time spent teaching each focal area.

Planning the Road Trip
Traditional methods of studio teaching tend toward a linear and reactive style. The traditional lesson involves a student learning a piece incrementally from start to finish, then performing it in increments for the teacher’s reaction. While this format has worked for centuries, a stream-of-consciousness atmosphere can arise in a lesson in which the student leaves having forgotten what was mentioned at the beginning of the lesson. This linear approach easily transfers to the practice sessions, resulting in inefficiency. The models presented here, on the other hand, urge the teacher to consider a comprehensive, multifaceted lesson structure.

The analogy of a road trip illustrates the different approaches to teaching. Two people, neither of whom know the geography of the United States well, leave Boston headed for San Francisco. One person consults a road map to find the direct route combined with some scenic spots for side trips and good locations to spend the nights along the way.
The second individual simply sets off driving, taking this turn and that, heading generally west. The person who has surveyed the entire trip prior to departure obviously will make a more informed trip, having followed a prescribed plan, while the second driver—who may have an interesting trip—could miss some important sights and may even wind up in a different city at the end of the journey, finishing at a time that cannot be predicted.

Planning an itinerary before traveling seems like common sense, yet string teachers often assign students to learn a piece with no formal overview process that allows them to see the entire trip prior to departure. The result can be a rather unfocused and poorly timed trip through the repertoire. The extra difficulty in music lies in the multiple journeys that take place simultaneously, each journey—of complex skills, knowledge, confidence—requires a different approach or pathway, yet the goal is often singular in nature, arising from many disparate paths.

Factual information, for example, belongs in the knowledge category. Allegro will always generally mean a fast tempo, and although the name may need some repetition for retention, students can understand it instantly. On the other hand, skill development, such as shifting from first to fourth position on the E string, requires sustained repetition over long stretches of time, including the breakdown of the skill into its components, seeing how they combine to create the whole and how they vary if one component is even slightly altered (such as performing the same shift on the thicker G string). Confidence building requires both repetitive encounters and nurturing in which a student relies upon prior experiences and a supportive context.

If string teachers intend to cover all these topics in a limited time, they must be efficient. Efficiency may be enhanced if the variety of learning paths to be correlated are apparent. These paths may be summed up as follows:

- Factual information is best learned in a relational, hierarchic manner.
- Skills are best learned in an additive manner.
- Refining skills requires continuous referencing of the first-learned basic skills.
- Self-esteem needs to grow logically from smaller successes to larger successes.

The graphic organizers and their explanations that follow are meant as an overt to an efficient means of teaching learning paths for the skills, information, and confidence needed for success in music. The models are designed to be flexible. The topics placed into them for this article, therefore, represent only a beginning of the models’ possible uses.

### Teaching Factual Information

Factual information is best learned when small facts can be related to a more comprehensive picture, or when details support an umbrella concept. John Anderson’s research has shown that “information is encoded probabilistically [sic] into a network of cognitive units. The nodes of this network vary in strength with practice and the passage of time. The strength of a node controls the amount of activation it can emit and the amount of activation it can receive.” In other words, the brain’s information nodes relate to each other through a non-linear network of connections.

This principle is contrary to the linear pathway most students use, cramming minutiae in a frenzy for a test. Instead, if an overriding concept can be shown to have a hierarchy of links to increasingly smaller supportive material, then all the material has relevance. David Dodd writes, “One common organization [of concepts] is a hierarchy of categories. One level (generic or basic) has a special status … [that] derives from the number of attributes distinctly shared by objects within the basic category level.” In essence, the human mind...
of understanding that might relate to a specific piece or to several pieces.

Teaching Skills

The last work of relationships that arises from the pyramid may find application to skills as well as to facts. Yet skills are better learned in an additive environment in which one skill provides the foundation for the next, or where a skill learned by itself is carefully brought into the context of the musical passage in which it will be played. According to Anderson, "Skill development starts out as the interpretive application of declarative knowledge; this is compiled into a procedural form; and this procedural form undergoes a process of continual refinement of conditions and raw increase in speed."

Off-the-string strokes such as spiccato and sautille are clearly related; acquiring flexible right fingers is a crucial first step in the process of mastering either stroke, as shown in Figure 2. Control of each skill rests upon success in the earlier skills. In the sautille stairway, for example, the skill of moving the bow by flexing the right fingers (at the base of the stairs) is a prerequisite for all other skills on the stairway.

The progression moves from flexing the right fingers with the bow on the string to understanding the intrinsic bouncing nature of the bow at or near its midpoint. A drop-bounced bow leads logically to the same motion accompanied by an up-bow or down-bow motion, or a ricochet—a stroke that can be conveniently learned en route to sautille. Once students begin to control the ricochet in specific units—for example, one U-shaped bounce on a down bow and one bounce on an up bow—they have stepped into the area of spiccato. Moving to the tip of the bow with a tremolo stroke adds the final feeling for sautille without the problem of the bow leaving the string. Once this motion is comfortable, moving the bow incrementally toward the middle allows the bow to do its own work and naturally leave the string.

The skill stairway in Figure 2 assumes a laboratory environment that is removed from the immediate study of a piece. A logical sequel to Figure 2 might be a second stairway that takes the learned sautille skill as its bottom step and creates a thorough process for integrating it into a specific passage. The teacher could elongate the process, inserting short pieces, etudes, or technical passages to support the spiccato and ricochet bowings learned as a part of the sautille skill. This learning pathway is clearly different from that needed to learn factual information in that, while knowledge of one term is typically not a prerequisite for learning another term, learning a simpler skill almost always needs to precede acquiring a more complex one.

In sum, the stairway idea implies that for the initial teaching of a skill, the pathway the human brain accepts most easily is to begin broadly and simply and progress logically in an additive manner toward the more complex goal. A teacher and student could create similar stairways for other skills such as shifting, vibrato, pulling a straight bow, hearing intervals, and acquiring consistent rhythm. By creating an organizing map

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AUGUST 2000 | AMERICAN STRING TEACHER | 61
Refining a Skill

A careful stairway process has been used in first learning the skill, students will understand the component parts of the skill and how they combine to form the complex skill. Next, the refinement of a skill to a higher quality requires students to use a different mental process, returning patiently to square one of the skill in order to illuminate the subtle muscular changes that must occur before the skill can be carried out with greater quality, ease, or accuracy. Efficient skill refinement also requires a road map with a predetermined destination.

The research of M. B. Jones in 1962 shows that practice is a process of simplification. Jones’s definition of practice is “the portion of the learning sequence that follows the formation of correct hypothesis.” In this process of practice, Jones says that “Beginners make many extraneous movements, but with practice the unnecessary movements are eliminated until the highly skilled performer is a model of movement efficiency.”

Pillars are a useful model for portraying this back-to-basics process that winnows extraneous movement and builds efficient, consistent movement. The pillar example in Figure 3 shows how the return to basics is crucial for the improvement and refinement of shifting. Clearly, the ability to move the arm up and down the instrument is not sufficient. A player must be able to move exact distances, time the shifts exactly, and feel the fingertip with increasing sensitivity so that the shift is stylistically correct. Teaching the complete process of shifting—using the arm, making a gentle arc shape, gliding along the string, and other approaches to this technique—is so complex that no teacher can expect the student to become proficient at shifting in a short time. So teachers first teach the basic technique, then revisit it many times with higher goals in mind.

For each of these higher goals, teachers need to be sure the students understands the basics of the goal more clearly than before, as a prerequisite to learning the higher-order skill and as a point of comparison and contrast while learning the more advanced technique. Players return to the fundamentals time after time, even as seasoned professionals in an unceasing effort to burn the image of correct technique into our minds, thus ensuring greater consistency in the maneuver. Artistic performance requires the virtually inhuman ability to make minute and perfect judgments instantaneously every time a passage is encountered. Such consistency is impossible without spending considerable time in the basic aspects of technique where the judgments are relatively easy and confidence is boosted because the success rate is high. The pillar geometric design is a plausible way to impress upon the student the need to return to square one as a routine part of all technical growth.

Fostering Self-Esteem

“Instrumental conditioning is the learning process concerned with voluntary responses,” according to John Drowatsky, and “is based upon rewarding responses that occur in a series of successive approximations progressing from an initial crude approximation to the refined final response.” Both the teaching of skills and the teaching of knowledge must occur in an environment in which the student’s self-esteem grows with the acquisition of greater abilities. Teachers err when they deny self-esteem as a part of the learning experience, and they similarly err in attempts to build self-esteem without noticeable progress to support it. Self-esteem has become such a buzzword in modern America that tremendous pressure is brought to bear upon teachers to ensure that students feel good about themselves. There is danger in this pressure because typically the students, the parents, and the teachers all have differing ideas on how self-esteem should be fostered.

One way to foster self-esteem is through praise. As both a teacher and student (but not yet a parent), I feel strongly that in the lesson praise needs to be linked to audible progress so that esteem is always grounded upon a foundation that can be proven. The teacher and student can agree that the words “that is good”
or "that is correct" are reserved for praise at the end of a process, and that, until such a time as the process is complete, compliments will take the form of "that is better and yet still needs work."

The spiral, as seen in Figure 4, provides a strong visual image for the growth of self-esteem because each growth, based upon a prior accomplishment, creates an upward flow of energy. The intent is to increase the requirements at a gradual enough pace so that the student remains in the area of success and self-esteem rather than that of failure. As in other designs, the process is additive; yet here emotional content is at the core. Teachers need to ask themselves if they are enabling a greater sense of security, confidence, and thus independence as they move the student forward technically and musically, or are they creating dependence and insecurity through their approach? All students must ultimately leave the studio, and those who will perform on stage must do it alone; therefore, this part of the process is admittedly crucial.

Clear Progress and Meaningful Results
These models are intended to provide a graphic image that is memorable to teacher and student so that the complex processes of learning may be made more clear, and thus more attainable. These models, when used by teacher and student as a part of the educational process, can open up the seemingly unending linear process of learning notes, facts, and techniques and show a general overview of the entire journey, especially the goals. Within the cohesive framework of a visible journey, progress is more clear and results more meaningful.

These ideas may be nothing new to many readers, but for those who may wish to incorporate them into future pedagogy, they need not require a great adjustment of present teaching style. In my own lessons I sometimes give a student a blank form to fill out for a specific goal. At other times I simply explain the concept to students before they begin to learn or refine a skill so they understand the kind of journey they are about to begin and how to best practice for success.

Factual information can be incorporated into lessons simply by asking pointed questions about terms, facts, and styles throughout the lesson and helping the student develop hierarchic reasoning as it relates to the piece currently studied. Most often, however, if the teacher knows the importance of, and the differences between, the learning pathways described in this article and can show the student the entire journey with goal and general time frame, then keeping the student conscious of progress and actively focused on the goal is sufficient. In this sense, these graphic organizers are more for the teacher than the student and serve to remind them once again of the rich and amazing complexity of their task with these young lives.

References

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