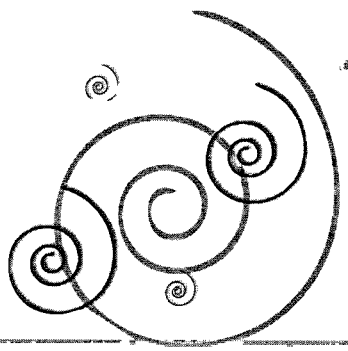


Paul Rolland's Spiral Curriculum

by Melissa Warr



When Russia sent Sputnik into space in 1957, Cold War tension between Russia and the United States increased. The U.S. government decided that the country's educational programs must produce better results and so began funding research aimed at improving educational methods. Jerome Bruner, then a professor of psychology at Harvard, received some of this funding.

Among Bruner's resulting theories is his well-known spiral curriculum. Using this model, education begins by gaining an intuitive understanding of the foundational concepts of each subject. An educational spiral is achieved by revisiting the same ideas in increased detail. Key to the success of such a curriculum is careful planning. Effective teaching and learning result from anticipating future outcomes throughout all stages of education. In the resulting program of study, early learning serves later learning by planting ideas for further development and by teaching positive attitudes toward education.¹

In a spiral curriculum design, fundamental ideas (ideas with wide applicability) are taught at all levels in an age-appropriate way. Bruner explains, "The foundations of any subject may be taught to anybody at any age in some form."² Although a young student may not be able to understand all the technical aspects of advanced concepts, he can understand all important ideas on an intuitive level. This intuitive learning is similar to the learning process used by researchers to discover new knowledge and is intrinsically motivating.

Once the foundational ideas of a subject are established, teachers must continue to revisit the same ideas, reviewing them and filling in details as the student's cognitive ability develops. This combination of developmental and remedial learning is vital to success. As ideas are revisited and refined, the gap between advanced knowledge and elementary knowledge is narrowed.

Bruner describes three main benefits of education built on a spiral curriculum design. First, helping the student gain an understanding of primary concepts in the first years of study provides a firm foundation for more effective learning later on. Second, a deeper understanding of the subject matter is gained, as well as an increased ability to remember and apply ideas. Third, intuitive learning motivates the student early on and helps him or her form positive attitudes toward learning.

At the same time that Bruner was forming his cognitive theories, Paul Rolland was experimenting with a new approach to string pedagogy at the University of Illinois. The pedagogical method that was produced was quite influential; his approach is found today in the teaching of many well-informed teachers around the world. Although it is unlikely that Rolland was aware of Bruner's studies, his success can be viewed in the light of Bruner's theory, showing that the

spiral curriculum—which is usually applied to the cognitive learning of mathematics, science, and English—also has clear benefits for kinesthetic learning.

Rolland's method teaches fundamental string playing movements to the beginner in ways that are simple for him to perform. Once a firm grasp of these basic, mainly large muscle group movements is achieved, the teacher helps the student refine each movement into more advanced skills while continuing to emphasize the fundamentals.

Key to Rolland's method is the use of movement and balance in reducing unnecessary tension, particularly in the beginning player. Movement is crucial in string playing. Teaching the student static forms, such as holding the left hand constantly in the first position, discourages natural movement.³ Movement also relieves static tension; muscles cannot remain in a state of static tension while voluntarily moved.

Good balance among the body, its parts, and the instrument also reduces tension by lessening the effort needed to play. Balanced objects are easier to move than unbalanced objects. As in the example given by Rolland, in a playground teeter-totter, the combined work done by the participants is less if their weights are balanced. This type of balance is also evident in smoothly functioning string players.

A balanced and relaxed body stance provides a firm base on which further technique can be taught. An initial method Rolland uses to produce this stance is the Statue of Liberty movement. The player begins with his feet in a V shape. As he moves his left foot forward and shifts his weight to the left leg, he raises his instrument in front like a torch, keeping his body in balance. Then the instrument is brought down from above and placed in playing position.⁴ This motion encourages a confident instrument position and balanced stance. After the instrument is in position, the beginner balances it between his head and shoulder while swinging his left arm to relieve excessive tension in the arm and shoulder and to prepare for further movement with the left arm and hand. Consistent with Bruner's curriculum design pattern, then, this stance is emphasized and revisited throughout the first years of study while further string playing movements are taught, beginning with simple motions and gradually becoming more complex.

Although Rolland's method emphasizes teaching the entire body, not just the right and left arms, hands, and fingers, it is easier to explain the movements associated with the left arm and bow arm separately. Both parts of playing are based upon the stance already discussed. Balance and movement also will continue to be revisited and developed on progressively more complex levels.

Left-Arm, Hand, and Finger Techniques

The professional performer uses three left-arm, hand, and finger movements: shifting, vibrato, and finger action. In the spirit of Bruner, then, the beginner also is taught these three motions in their simplest forms, with continual review and refinement of each skill. Almost all violin methods teach finger action from the beginning, but most neglect vibrato and shifting in the first years of study. Rolland's unique approach to shifting and vibrato closely reflects Bruner's theory by teaching motion patterns that will eventually develop into vibrato and shifting from the beginning of instruction.

The shifting motion is taught in the first months of study through large, free movements with no finger pressure or pitch designation.⁵ The beginner practices strumming the strings with the left hand by swinging the left arm from the shoulder while moving the hand up and down the fingerboard among a general low, middle, and high position. Next, the student moves his hand among the three basic positions while plucking the G string with the third or fourth left finger. The student also practices long, free, silent shifts with the finger lightly touching the string. When the student is ready, pitch designation is added to the shifting motion via harmonics. Then finger pressure is added by performing the long shifts already learned with finger pressure on the string, eventually adding the bow to develop independence between the two hands. In the intermediate stages, pitch designation and finger pressure are combined while the student transposes short melodies up the fingerboard and plays scales and arpeggios with one finger. As more complex levels of shifting are practiced, the student continues to refine the basic shifting motion.⁶

In addition to giving the beginner a solid shifting base, the shifting sequence also introduces other advanced techniques and attitudes. First, the student must learn to hold his violin with his head like a "real violinist" in order to successfully shift. Second, the motion encourages a more relaxed and free left arm and shoulder. And third, early shifting movement reduces fear of the high positions commonly found in many intermediate and advanced students.

Vibrato is also often disregarded in beginning string playing, whereas Rolland teaches simple pre-vibrato motions from the start, revisiting them often with increased sophistication. The basic motion of a hand (wrist) vibrato is first taught by tapping left-hand fingers on the violin body and strings in various rhythms. The shifting motions already discussed are a precursor to arm vibrato. These two motions are combined to give the student a taste of combining arm and hand vibrato as the professional player does by tapping in the low, middle, and high positions. Later, arm balance is once again emphasized as the vibrato motion is refined.⁷

Bow Technique

As in Rolland's shifting and vibrato sequence, the spiral curriculum in bow technique is also apparent. The beginner learns the basic upper-arm swinging motion common to almost all bow strokes and then adds forearm motion to extend the stroke, bounce to perform spiccato, pressure pauses to execute martelé-staccato, and so on. String-crossing and tone-release skills also are taught from the beginning of study and then are progressively refined.

The basic bowing motion is first taught silently as the student practices shadow bowing rhythms on his shoulder. Shadow bowing may be revisited over and over as new bow skills are taught. Next, the student learns to play short strokes in the middle of the bow, produced by swinging the upper arm from the shoulder. The student experiences the beginnings of a circular and continuous bow motion and practices tone releases by playing short down bows, retaking before each with a circular, continuous motion in the rebound.⁸

The extended stroke is an extension of the short beginning stroke. The simple introductory exercises include swinging the arms freely, the flying pizzicato, and wandering in different parts of the bow. The student gets the feeling of a free, relaxed right-arm motion away from the instrument by swinging his arm or case in front of him. The next level is the flying pizzicato, where the student plucks the string, outlines the elliptical motion of a full bow stroke with the hand, and returns to the string to repeat the exercise. This motion is continuous, as a refined legato bow stroke should be, and encourages free, relaxed motion. A slight transfer of weight from one foot to the other while performing this exercise once again fosters whole-body balance. In wandering, the student repeats a simple rhythm in different parts of the bow without lifting the bow, getting the feeling of playing in each part of the bow.⁹

The spiral curriculum continues with the extended rebound, built off of the rebound (tone releases) mentioned earlier. In this motion, the student revisits the rebound stroke, this time using the whole bow.¹⁰ This motion is really just the flying pizzicato while holding the bow. Once it and the other skills are mastered, the extended stroke can be taught with ease.

String crossing is another technique that is taught from the beginning in its most basic form. The student practices a silent rolling motion with the bow held in the right hand and the tip of the bow hanging from the left fourth finger. This motion is then transferred to silently rolling the bow across the four strings. When the extended bow stroke is taught, slurred string crossings are revisited, this time with full bows.¹¹

The Test of Time

Both Bruner's innovative spiral curriculum and Rolland's string education ideas have been highly successful. This success can be seen in the frequent use of their ideas in today's teaching methods some four decades since their inception. Their ideas are so significant that teachers often use them without knowing their origin.

In Bruner's case, such success can be attributed to the creativity as well as philosophical soundness of his ideas. Rolland's method also undoubtedly has many reasons for success: its focus on balance and motion, use of rote work before reading music, and careful consideration of physical and physiological principles. Added to these reasons for success is Rolland's imbedded spiral curriculum format, which ensures that the beginning student can feel like a professional musician and the advanced student will have a solid foundation in, and a positive attitude toward, the many facets of string technique. *D*

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Renowned jazz violinist Regina Carter will perform with the Regina Carter Quintet and the Arizona State University Symphony Orchestra at the 2005 ASTA National Conference in Reno, Nevada. Carter's abundant talent and energetic performances have made her one of today's most popular young violinists.

Photo: Bill Phelps

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