A Helping Hand: Individually Prescribed Music Instruction (IPI)

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ABSTRACT
Individually Prescribed Instruction (IPI) is an approach to teaching that emphasizes the diagnosis of learning problems and the provision of prescriptive assignments to assist individual students overcome their difficulties. When this strategy is employed effectively, the teaching environment is highly adaptive. The teacher matches the students' abilities to alternate ways of learning, and also provides remedial assistance and positive reinforcement. Individually Prescribed Instruction has been shown to be effective across the school curriculum. This writer reviews the success of this strategy for assisting students overcome learning problems, and proposes a model for its implementation in music instruction.

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Introduction

"The most unique feature of IPI is its requirement that each pupil's work be guided by written prescriptions prepared to meet his or her needs and interests."2

Robert Glaser

Music teachers have provided countless young people with a variety of musical experiences that have enriched their lives. However, there are also many students who are less than successful in a performance group and require more individual assistance to progress. The music classroom environment is often characterized by a high degree of teacher authority, ensemble discipline and technical proficiency.3 Upwards of 87.7 percent of the verbal behaviours in a music classroom are teacher-initiated (i.e., lecturing, informing, demonstrating or criticizing) rather than student-centred (e.g., questioning, probing, prompting or suggesting).4 Very little attention is given to individual learning needs and, as a consequence, many students are alienated and either become disruptive or leave the program.5 What the profession needs is a strategy for individualizing instruction and meeting the personal needs of students who experience frustration and limited success.6

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4 Robert Erbes, "I used to direct my rehearsals like a drill sergeant!" p. 53.
A teacher-led ensemble, inherently “top-down in nature” with students dutifully following directions always dictated from the podium, might not provide sufficient opportunities for the development of musical understandings, or allow students to be involved in any decision-making processes.7

Individually Prescribed Instruction (IPI) was developed by Robert Glaser and his associates at the Learning Research and Development Center at the University of Pittsburg and first implemented in the Oakleaf Elementary School near Pittsburgh.8 This particular approach to individualized instruction emphasizes the diagnosis of learning problems, and the provision of prescriptive assignments to assist students overcome their difficulties. It is based on the premise that students acquire competencies in different ways, and display a wide range of skills, aptitudes and knowledge. Consequently, the teaching environment should be adaptive; that is, one that matches a student’s abilities to alternate ways of learning.

There are several assumptions underlying Glaser’s approach. He believes that students differ in the amount of time they require for mastery of subject-matter; each student should be able to work through the material at his or her own pace and with the proper amount of practice; students with the appropriate materials can learn with a minimum amount of direct teacher instruction; no student should be permitted to try a new unit until he or she has mastered the previous one; and the program should provide frequent evaluations for reinforcement.9 For IPI to function effectively, the teacher must correctly identify learning obstacles, formulate appropriate prescriptions, and develop reliable pretests and posttests to make valid diagnostic and summative evaluations.

IPI in the School Curriculum

In Individually Prescribed Instruction, the curriculum is divided into a series of work units. Each of these units contains a specified number of well-defined objectives with accompanying assignments. Prior to the beginning of a unit, the students undergo a pretest to determine their strengths and weaknesses. Based on the test results, a diagnosis is made to ascertain an appropriate assignment. Students are provided with self-study aids, such as pre-recorded cassettes and videos, library references, computer-assisted instruction, sample tests, or programmed learning modules. For example, prior to a unit on chordal analysis, the teacher would give the class a pretest to assess the level of proficiency in clef reading, interval recognition and chord construction. Those students that demonstrated competence in these prerequisite skills would proceed to analyze the chordal progressions as outlined in the unit. The remaining students would receive a prescription in which they would be expected “to do things in order to practice the ability that they are expected to acquire.”10 It could consist of a series of exercises which give the student practice in def reading and chord construction, or a pre-recorded tape which provides practice recognizing intervals. When a prescription is completed, the work is checked by the teacher, and if it is satisfactory, the student proceeds with the unit. At the end of each unit, the class completes a posttest before attempting the next unit. Those students who are unsuccessful once again work through a prescription until the required competence is attained.

Review of the Literature

An IPI classroom environment is highly responsive to individual differences and allows students to work at their own level of accomplishment.11 The major goal of this form of instruction is “to permit pupils to proceed through a carefully sequenced set of objectives for a given subject at a pace that is determined by

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individual abilities and interests.12 It is a comprehensive approach that was developed in response to research that has shown that lectures fail because students are passive; teacher-dominated discussions are less effective than student discussions; students have different learning styles; learners need frequent reinforcement and their learning improves with frequency of reinforcement; retention increases with involvement; and audio-visual aids are more effective self-aids than teacher interviews.13 Individualized instruction has substantial benefits: students can pretest until the desired proficiency level is reached, move at their own pace, receive immediate feedback, receive more personal attention, attain grades on the basis of achievement only, and participate in a success-oriented environment; and, teachers can create multiple learning paths for their students, use a variety of media, increase the level of personal interaction, and certify the achievement of students.14 More recently, Joseph Lipson adapted IPI for the education of the handicapped, for home study use, and for industrial and military training;15 and John Bolvin demonstrated how it could be used to improve college reading levels.16 Jeanette Fleischer and Katherine Garnett reviewed IPI's success in assisting students with learning disabilities learn arithmetic;17 and Marjorie Goldstein demonstrated how it can be used in planning programs in special education.18 A dissenting voice, Grace Scering argues that Individually Prescribed Instruction is a scientifically systematized curricular program that fosters personal gain and private control, and if not used sparingly, could impair the school's purpose in society (i.e., the common good).19

Research in music on individualized instruction has tended to focus on programmed learning. Certain aspects of this research are relevant to the development of IPI for music instruction. Albert Shaw found that programmed learning was effective for teaching basic motor skills in musical performance; Stephen Lawrence demonstrated that a self-instructional format was effective for developing facility in music reading for instrumental music students; Bernard Weiss developed programmed materials for band students but found implementation difficult and time-consuming; Michael Wagner discovered that the use of a precise recording system in individualized instruction may prove beneficial in objectifying many aspects of applied music study; and Douglas Greer concluded that the behavioural model concerned with assessing the frequency of learning represented a viable alternative to the traditional method of anecdotal reporting.20

Individually Prescribed Instruction in Music

The application of IPI to music education could be accomplished directly in the non-performance studies area. Prescriptions, pretests and posttests could be developed for units in music theory, ear training, listening and history. But such an effort may be questionable when non-performance study generally constitutes ten to fifteen percent of a course and seldom reaches beyond twenty percent, even in the senior grades.21 Direct transfer to performance, however, cannot be so easily achieved within the framework of the conventional music classroom. Individual assignments cannot be carried out in a class setting without creating a cacophonous din. In addition, the accepted method of assigning marks for performance or achievements is to evaluate the students' performance.22

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12 C. Mauritz Lindrall and John O. Bolvin, Individually Prescribed Instruction: The Oakleaf Project, Working paper No. 8, p. 10.
creative activities, that is testing one-at-a-time, is very time-consuming and mitigates against more frequent pretests and posttests which would impinge on instructional time.

It is this writer’s suggestion, based on pilot trials with secondary music students that a more flexible interpretation would allow the essence of IPI to be utilized for both performance and non-performance without the necessity for extensive re-writing of the music curriculum. Essentially, Glaser’s formula of pretest-prescription-posttest consists of the diagnosis of a problem, the provision of a work assignment, and the monitoring of the student’s progress to ensure that the problem is solved. If these features - diagnosis, prescription and monitoring - are adopted as the basis of an instructional sequence, then a strategy can be formulated that offers the remedial functions of IPI on a broader scale. For example, during a class rehearsal the teacher may find that poor intonation in the clarinet section is caused by a certain student who is having difficulty crossing the break from the lower to the higher octave (diagnosis). A worksheet could be provided that takes the student through a series of exercises of increasing difficulty designed to improve his or her skill in crossing the break (prescription). The student would work on the exercises for homework, or in a practice studio during class time. When the student could play the exercises accurately for the teacher (monitoring), he or she would rejoin the section. In another instance, a class may be completing an instrument recognition quiz. Those students that had difficulty identifying the various instrumental timbres (diagnosis) could be provided with a cassette of Benjamin Britten’s *A Young Person’s Guide to the Orchestra* (prescription). After individual study at a listening center or at home, the students would redo the quiz to demonstrate their competence to the teacher (monitoring). Thus, by using the sequence of diagnosis-prescription-monitoring instead of the more restrictive and time-consuming pretest-prescription-posttest, IPI can be used to respond to problems as they emerge during large group instruction.

In music, similar learning problems arise from year to year when undertaking performing, creating, and listening activities. In planning for IPI, it is incumbent upon the teacher to identify those problems and develop prescriptions that will provide individual study to overcome them. For example, a music teacher can predict with a reasonable degree of certainty that some beginning brass students will experience difficulty slurring wide intervals. This procedure requires a firm embouchure and good breath control, both of which take time and practice to develop. A slurring worksheet designed to achieve the precise motor control needed to slur wide intervals (outcome) could be developed and maintained in the teacher’s file. The prescription would contain a series of exercises that gradually increase the distance slurred and the length of each phrase, thereby increasing lip endurance and breath control (refer to Table I). Successful execution of the worksheet exercises (activity) would develop a student’s slurring technique, and enable him or her to perform more musically.

When students first attempt slurring, the teacher identifies those students with a problem, provides each of them with a slurring prescription, and monitors their progress on a regular basis. With a prescription, the student controls the timing and pacing of the practice, whereas the focus of the learning is provided by the instructions accompanying the exercises. The teacher provides corrective feedback and reinforcement on a one-to-one basis, and checks that the exercises are completed. With this approach, evaluation is integral to the monitoring process. Transfer occurs when the individual applies the improved slurring technique in a musical setting.

It is helpful if the teacher at this point reinforces the learning through praise and a review of the fundamentals of slurring technique. The teacher can acknowledge a student’s success with a nod, a smile or a comment, such as “Good, you’ve got it right!”; and restate the principles of effective slurring - a firm embouchure and good breath control - for the benefit of the individual and the class.

**Concluding Comments**

Individually Prescribed Instruction (IPI) is a highly structured approach to individual learning, but one which is appropriate for a wide range of learners. The student and teacher enter into a dialogue to solve a
learning problem that cannot be dealt with in a large group setting. The process of diagnosing a problem, providing a prescription, and monitoring student progress enables the music teacher to quickly respond to learning problems that emerge during instruction. The strategy is particularly useful for solving difficulties that recur from year to year, and it is most helpful for those students who need remedial assistance.

**TABLE I: Individually Prescribed Instruction (IPI) Slurring Prescription**

These exercises are designed to improve your slurring technique so that you are able to play musically.

1. Play the examples very slowly and pay attention to the breath marks.

2. In the following examples, notice that dynamic markings have been added.

3. The wider the interval the more air you need. Concentrate on your airflow and on how it feels.

4. Let's do this exercise (no. 3) again and concentrate on the embouchure. Make sure that you keep it steady. Resist the temptation to drop the jaw or pinch the lips.

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**References**


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