DOCUMENT RESUME

ED 023 299 EM 000 331

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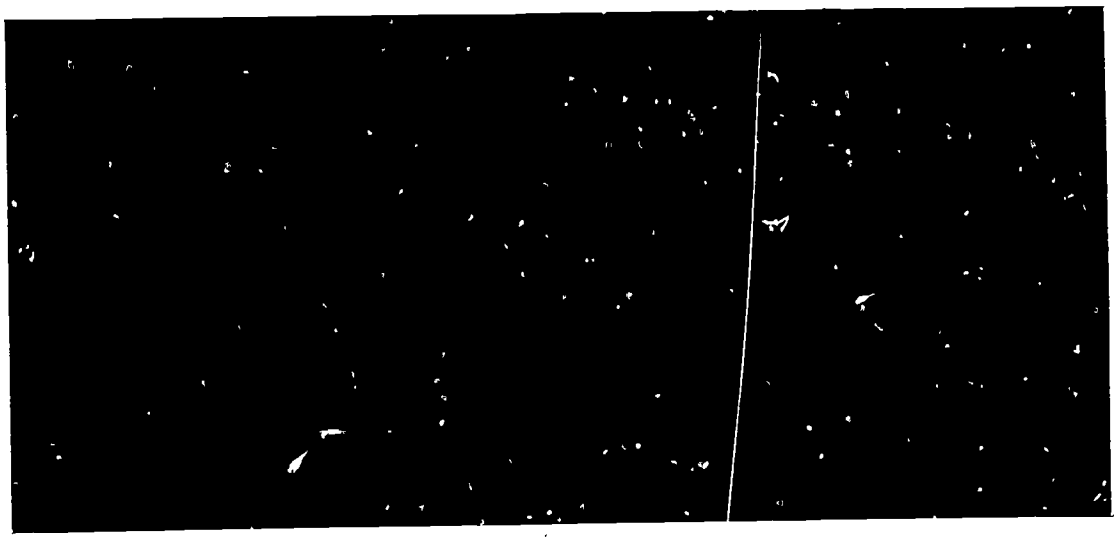
An Independent Learning Approach to Piano Sight Reading.

State Univ. of New York, Fredonia. Coll. at Fredonia.
Report No-IRC-RR-1
Pub Date Mar 68
Note-23p
EDRS Price MF-$0 25 HC-$1 25
Descriptors-Applied Music, Audiovisual Aids, *Audiovisual Instruction, *Autoinstructional Methods, College Curriculum, *Individual Instruction, Music Education, *Music Reading, Projection Equipment, Slides, Teaching Methods

The ability to sight read music accurately and artistically is important for pianists, expecially those who intend to become teachers and accompanists. Yet instruction in this skill is rarely available. An independent learning approach based on tachistoscopic speed reading techniques (i.e. controlled exposure) was evaluated for reducing sight reading errors among college piano students. Experimental subjects took part or eight 30 minute sessions over a period of two weeks. During each session, six scores of varying styles were projected onto a rear screen unit by a remote controlled 35mm slide projector. Scores were arranged in order of increasing difficulty. Control subjects received no formal instruction in sight reading during this time period. The performances of experimental and control subjects were evaluated before and after the sessions by two judges, one judge grading the experimental subjects and the other judge grading the control subjects. Experimental subjects showed a significant decrease in note and meter errors as well as an increase in ability to play with expression. In addition, student attitudes toward the approach were favorable. (RM)

research report



INSTRUCTIONAL RESOURCES CENTER

STATE UNIVERSITY COLLEGE
FREDONIA, NEW YORK

NUMBER 1

AN INDEPENDENT LEARNING APPROACH TO PIANO SIGHT READING

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AND
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MARCH 1968

The writers would like to express their appreciation to Miss Joy Klug for her invaluable assistance during the early phases of this project, to Charles Blohm and Richard Warner for their contributions in the design and construction of the unit used in this experiment, and to Edwin Lawson.

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BACKGROUND

The ability to sight read accurately is a basic skill required of all musicians. He must be able to inspect and assimilate, quickly and thoroughly, an immense and growing collection of materials. This skill is particularly important to the majority of pianists who plan to become both teachers and accompanists and has always been a major problem for many musicians.

Ideally, training in sight reading should start as soon as a student begins his musical education. Unfortunately, formal instruction in this area has been the exception rather than the rule. As a result, college students majoring in music, especially piano, are often poor sight readers. Pianists have different problems from other instrumentalists, for in most cases both hands have to play simultaneously four or five voices. Other instrumentalists usually carry only a single line or voice, making sight reading easier.

While muscles in the fingers and eyes and the basic reflexes are easily conditioned and developed in the formative years, training by the time a person reaches his late teens is far more difficult. This does not mean that late starting adults cannot reach a high level of sight reading proficiency.

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It simply implies that training takes longer and requires more concentration.

Good musical sight reading involves quick reactions and reflexes. The musician must be able to assimilate the score at a glance and be able to recreate it as perfectly as possible, combining what he reads with musical taste and historical knowledge and background.

Work with piano majors at Fredonia, as in most institutions in the comprehensive music programs, has indicated a weakness in the sight reading skills which, in turn, affect the overall artistic proficiencies of the students. In exploring this area two facts became obvious. (1) An instructional sequence designed to efficiently and effectively meet this need did not exist; and (2) the shortage of available teacher time for the teaching of sight reading necessitated an approach that minimized individual instruction by the teacher.

Based on these needs, a decision was made to explore an independent learning approach to the teaching of sight reading to college music majors specializing in piano. This report describes the pilot phase of this project.

OBJECTIVES

The general objectives of this pilot project were as follows:

1. To test the hypothesis that a controlled sight reading sequence could reduce note and meter errors of piano majors.
2. To test the feasibility of this technique as an

independent learning sequence.

3. To test student attitude toward this approach.

A correlary objective was to select the basic scores that should be utilized and their placement in the total sequence.

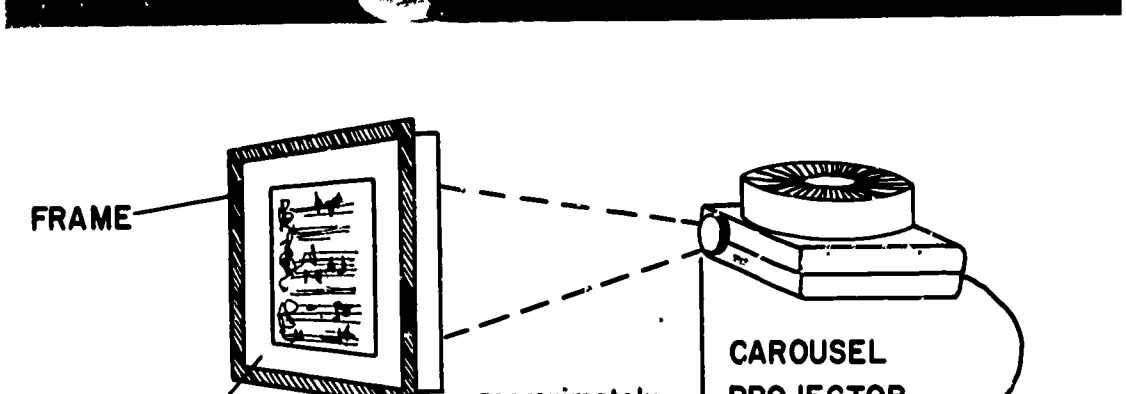
PROCEDURE

A survey of experiments in the field of general reading has indicated that the use of tachistoscopic speed reading techniques can improve both speed and comprehension. It was, therefore, decided to use this same approach to improve the ability of students to sight read efficiently.

The first problem to be faced was mechanical. How could scores of varying difficulty be presented in a controlled manner to the student seated at the piano? After much exploration, a decision was made to utilize a remote controlled 35mm slide projector focused on a rear screen unit. This approach had the following advantages:

1. A well-lighted image could be located in the standard position for music placed on a piano.
2. The image could be identical in size to the standard score.
3. Scores could be easily and inexpensively reproduced.
4. Scores could be changed by the instructor from a remote location. (In the next phase of the experiment it is anticipated that scores will be changed automatically by use of a signal transmitted from a tape recorder.)

A remote controlled 35mm carousel projects a score on a rear screen located in front of the student. The image is the same size as the standard score.



As noted above, pacing was controlled for this pilot project by an instructor seated in the room. This instructor had two functions: First, to control pacing; and second, to modify the difficulty of the scores as the project progressed.

Students were given a pre- and post-test consisting of seven scores selected for their (a) variety, (b) length, (c) style, and (d) increasing difficulty. Scores selected for use in these tests were closely matched in these four areas. See tables I and II. Included was one contemporary American composition in manuscript form to test the students' abilities to read handwritten scores, a skill essential for accompanists. The pre- and post-tests were recorded, with errors in notes and meter tabulated at the conclusion of the experiment.

It was impossible to eliminate all variables in this project but an attempt was made to have a basis for selection for both tests--the number of notes, the same meters, and as far as possible, the same keys, or relative keys.

TABLE I

PRE-TEST MUSIC SCORES

Title	Composer	Length	Meter	Key
1. Menuet "La Loff"	C. Ph. E. Bach	32 measures	3/4	C major
2. Bourrée from Suite in E minor S. 996	J. S. Bach	25 "	C	E minor
3. Rondo K. 590 c	W. A. Mozart	24 "	6/8	F major
4. Allegretto (in Supplement of the Collected Edition in 1888)	L. V. Beethoven	49 "	3/4	C minor
5. Waltzes No. 2	F. Schubert	17 "	3/4	A flat major
No. 14	"	25 "	3/4	D flat major
No. 20	"	17 "	3/4	G major
No. 22	"	16 "	3/4	B major
6. a. Larghetto from Sonata in F sharp minor	Friedrich W. Rust	15 "	2/4	F sharp minor
b. Allegretto from Sonata in F sharp minor	Friedrich W. Rust	30 "	3/4	F sharp minor
7. Dance, Allegro Molto (in manuscript)	Paul Nordoff	32 "	4/4	E minor

TABLE II

POST-TEST MUSIC SCORES

	Title	Composer	Length	Meter	Key
1.	Larghetto amoroso	D. G. Türk	26 measures	6/8	C major
2.	Bourrée (from English Suite in A minor)	J. S. Bach	24 "	C	A minor
3.	Rondo K. No. 109b #5 - 15t	W. A. Mozart	33 "	6/8	F major
4.	3rd mvt. from Sonata No. 22, Allegro (Kalmus 2nd volume)	F. Haydn	46 "	3/4	C minor
5.	Waltzes No. 3	F. Schubert	17 "	3/4	A flat major
	No. 10	"	17 "	"	" " "
	No. 21	"	17 "	"	G major
	No. 23	"	16 "	"	B major
6.	a. Adagio K. No. 540	W. A. Mozart	15 "	C	B minor
	b. Allegretto from F sharp minor Sonata	Friedrich W. Rust	30 "	3/4	F sharp minor
7.	Dance (in manuscript)	Paul Nordoff	40 "	4/4	D flat & B flat major

The extensive amount of listening and related tabulation required two experienced musicians to serve as evaluators with one being assigned to the control and the other to the experimental group. While this could result in a variance between groups, the procedure did have a single evaluator judge the pre- and post-tests for the same group.

The experimental and control groups consisted of music majors enrolled in the Piano Department at the State University of New York, College of Fredonia. Students in both groups included freshmen, sophomores, juniors, and seniors. The students, prior to this experiment, had not received any formal instruction in sight reading. During the experiment, the control group received no formal instruction in the area.

Experimental sequence: The experimental project consisted of eight 30 minute sequences completed over a two-week period. During each session, the student was required to sight-read a page from six different compositions representing a minimum of three styles. The last day was an exception, when five of the compositions were from the 20th century and all were of intermediate difficulty.

Each composition, during the experiment, was played twice with the student given approximately one minute to scan each score prior to playing. No review was permitted between the first and the second playing. The music being used became increasingly more difficult with each day's selections based on the overall performance of the group on the previous day. This

process did modify, to some extent, the originally planned sequence. A list of selections used will be found in tables III to X. Students were not informed of errors as they progressed through the sequence.

TABLE III

SCORES USED FIRST DAY

Composer	Title	Key
Prokofieff	Op. 97, Capriccio	D major
Paul Creston	Op. 24 #2 Languid Dance	C major
Morton Gould	Hillbilly	G major
Louis Richardson	The Echo	C major
Paradisi	Sonata, 1st movt. Vivace	D major
Paradisi	Sonata, 2nd movt. Presto	D minor

TABLE IV

SCORES USED SECOND DAY

Composer	Title	Key
Dohnanyi	Postludium	C major
René Defossez	Diabolo	C major
Louis Richardson	Summerwind	D minor
Poulenc	Nocturne #2	A major
C. P. E. Bach	Sonata	A major
Kabalevsky	2nd Sonata, Coda 1st movt.	E flat minor

TABLE V

SCORES USED THIRD DAY

Composer	Title	Key
Scarlatti	Sonata	F minor
Mozart	Variations	G major
Paul Creston	Rhythmicon #3, Teasing the Cat	
Zipoli	Pastorale	C major
Haessler	Sonata	C major
Norman Dello Joio	2nd Sonata, 1st movt. Coda	C minor

TABLE VI

SCORES USED FOURTH DAY

Composer	Title	Key
Chopin	Polonaise (Edition Paderewsky) Posth. 1821	A flat major
Beethoven	Sonatina (E. Marks publish.) 3rd movt.	E flat major
René Defossez	La Leçon de Piano	C major
Von Weber	Polacca Brilliante, Op. 72	E major
Dohnanyi	Capriccio, Op. 2, #4	B minor
Norman Dello Joio	2nd Sonata, 1st movt.	F sharp minor

TABLE VII

SCORES USED FIFTH DAY

Composer	Title	Key
Kuhlau	Sonatina, lst movt. Op. 59, #1, (E. Marks publish.)	A major
Schumann	Spanish Romance Contrabandista (Smuggler)	G minor
Mendelssohn	Fugue (from Prelude & Fugue)	E minor
Busoni	Prelude No. 3	G major
MacDowell	March Wind Op. 46 #10	E flat major
Bartok	Tanz	

TABLE VIII

SCORES USED SIXTH DAY

Composer	Title	Key
Ravel	A la manière de Chabrier	C major
Prokofieff	Adagio Op. 97	C major
C. P. E. Bach	Sonata	F sharp minor
Tchaikowsky	Dumka Op. 59	C minor
Paul Juon	Naiads at the Spring Op. 18, #1 (Etude)	A major
Norman Dello Joio	2nd Sonata	E flat major

TABLE IX

SCORES USED SEVENTH DAY

Composer	Title	Key
Poulenc	Nocturne No. 1	C major
Paradisi	Sonata	D minor
Shostakovitch	Prelude No. 17	A flat major
Busoni	Prelude No. 5	D major
Barber	Excursions, Op. 20, No. 1	C minor
Gordon Jacob	Humoresque (Oxford publ.)	C major

TABLE X

SCORES USED EIGHTH DAY

Composer	Title	Key
Prokofieff	Summer Fairy Op. 97, No. 2	C major
Norman Dello Joio	Nocturne No. 3 (Carl Fischer publ.)	F sharp
C. P. E. Bach	Sonata	F sharp minor
Kabalevsky	Sonata No. 2, 2nd movt.	B minor
Ulysses Kay	Invention No. 4	C major
Ben Weber	Humoresk Op. 49	

RESULTS

Results of the pre- and post-tests as tabulated by the two evaluators will be found in tables XI and XII.

TABLE XI

RESULTS EXPERIMENTAL GROUP
ERRORS (Evaluator 1)

Student	Notes		Meter	
	Pre-test	Post-test	Pre-test	Post-test
1	192	160	22	11
2	84	74	6	0
3	226	37	11	6
4	177	59	5	3
5	177	59	6	4
6	96	29	5	3
7	129	40	12	1
8	187	48	7	2
9	171	66	12	3
10	261	86	14	2
Sum of the ranks:	59*	151	63.5*	146.5

*Significant at the .01 level of confidence using the Wilcoxon Test of signed replicates. (Wilcoxon, Frank and Roberta A. Wilcox, "Some Rapid Approximate Statistical Procedures", American Cyanamid, New York, 1964.)

TABLE XII

RESULTS CONTROL GROUP
ERRORS (Evaluator 2)

Student	Notes		Meter	
	Pre-test	Post-test	Pre-test	Post-test
1	98	108	11	22
2	90	124	18	28
3	272	263	59	33
4	261	269	35	27
5	147	128	28	29
6	57	75	16	26
7	205	332	34	31
8	139	158	40	43
9	210	221	26	33
Sum of the Ranks	92**	88	79**	83

At the conclusion of the experiment, a questionnaire was distributed to the ten students in the experimental group. The results of this questionnaire, returned by nine of the students, are as follows:

Questionnaire

1. For improving sight reading, I felt the experiment was:
   - A. very effective 6
   - B. effective 3
   - C. not effective 0

** Not significant

2. I felt that after eight days of the experiment, my sight reading showed:

A. much improvement	4
B. sufficient improvement	3
C. little improvement	2

3. The movement from easy to more difficult scores was:

A. too fast	2
B. too slow	0
C. satisfactory	7

4. The experiment overlooked problems related to individual piano technique.

A. yes	3
B. no	6

5. As a result of this experiment, I feel I need more work in:

A. Baroque	4
B. Classical	2
C. Romantic	0
D. Contemporary	5
E. Other	-

6. The 20-30 minute periods for the practice each day were:

A. about right	8
B. too long	0
C. too short	1

7. The use of slides in place of sheet music was:

A. effective	8
B. ineffective	0
C. confusing	1

8. I found the image on the screen to be:

A. clear	2
B. fuzzy at times	7
C. extremely hard to see	0

9. I feel the sight reading project is fine as it stands. 7
   I feel the sight reading project could be improved. 2

10. I would like to go through a similar experience again to benefit my sight reading. 6

    I would not like to go through a similar experience again to benefit my sight reading. 3

Student Comments

I realize that the most important thing is to continue sight reading on my own.

This amount of time was fine. It gave us a chance to go back over the piece and correct many of the mistakes.

The slides were certainly more efficient than sheet music.

This test certainly increased my awareness of the importance of sight reading, especially sight reading which is done daily, even if for only a half hour. I think it would be beneficial to have a test like this again next year so that we can see if we have improved any over a year's time.

We came into contact with many types of music--it was a fast and efficient method--not as bulky as a pile of music and could be changed more quickly.

The pressure was just enough to make you concentrate, therefore, making you learn and improve.

At the conclusion of this experiment, I felt that sight reading was easier.

It taught me that the only way to become a good sight reader was constant practice.

The project made relatively easy pieces very easy, however, eight days is too short a time to show a great deal of improvement.

Since the experiment I have found that I enjoy sight reading. I have done it quite a bit more than I used to and intend to begin sight-reading on a regular basis soon.

The experiment was good for medium-type readers. But for some that are avid sight readers, it didn't seem to accomplish the full purpose.

It was very efficient and much easier than fooling around with stacks of sheet music.

DISCUSSION

It is apparent that as a result of this experiment there was a significant decrease in the number of note and meter errors made by the experimental group. For some students the number of errors was reduced by as much as 80% at the end of the four hour instructional sequence, completed over a two week period. (Tables XI and XII.)

The students felt that the experiment was effective (100%), the sequence well-paced (77%), and that the 20-30 minute periods of the correct length (88%). While many (77%) felt that the clarity of the projected scores could have been improved, there was general agreement (88%) that the use of slides was effective. Two-thirds of the experimental group stated that they would like to go through additional experiences of this type. The students also felt that they had the most difficulty in the contemporary and Baroque scores.

In observing the students during their pre- and post-tests, the instructor noted several major changes in the sight reading habits of the experimental students. First, the students were able to view whole phrases and play them more expressively without stopping at each mistake. Second, the students learned not to take their eyes off the printed score. During early sessions, the students tended to look down at the keyboard, thus losing their place in the score. Third, students became aware of their own difficulties in note and meter sight reading and were able to identify which styles needed more work. It was also interesting to note that many students, despite the fact that they were piano majors, found themselves being introduced to many composers previously unknown to them.

The most common mistakes in rhythm were in note values. Dotted and tied notes created many problems to the students, as well as 32nd and 64th notes, even though the tempos may have been slow. Key and clef changes occurring on a single

page also accounted for many errors. Some students had short memories regarding unusual accidental changes from one line to the other in a score. Under stress, some students left out the left hand and continued with only the right one.

During the first few days, phrasing was very sloppy, as the students placed their major efforts on trying to play the correct notes and meters. Staccatos were often left out as well as dynamic indications. Tempos during the first playing were usually on the slow side with the second reading being closer to the directions. Some of the students, already more experienced in sight reading, were able to capture the spirit of the pieces immediately, while others needed to replay to recreate more successfully the composers' demands.

As noted during the description of the project, a secondary objective was to select the proper sequence of scores for each of the eight short sessions. Early in the experiment it became obvious that the introductory scores were too easy. As a result, the simpler ones were dropped and replaced by more challenging pieces.

In reviewing the comments of the two evaluators, it became readily apparent that, despite their somewhat equal training, they were using different criteria for counting errors, particularly in the meter area. While this does not affect the results of this study, since each evaluated the pre- and post-tests for the same group, it does identify a problem that can arise when different evaluators are used.

CONCLUSIONS

1. The independent learning approach to piano sight reading used in this experiment significantly increased both note and meter accuracy.
2. With as short a time as four hours of practice over a two week period, students can show a major decrease in note and meter errors.
3. Students are favorable toward this approach.
4. The use of a slide projector to project scores at their actual size is effective.
5. This approach can provide, for the piano major, a variety of insights that can help improve his piano efficiency and overall musicianship.