MUSIC’S EFFECTS ON ACADEMIC ACHIEVEMENT

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FRESHMEN
1ST YEAR
BACKGROUND INFORMATION

• THE MAJORITY OF COLLEGE STUDENTS LISTEN TO MUSIC WHILE STUDYING

• MUSIC HAS THE POTENTIAL TO EVOKE EMOTIONS AND PERSONALITY

• VARIOUS STUDIES AND OBSERVATIONS INDICATE THAT MUSIC CAN INFLUENCE LEARNING IN CORE SUBJECTS AS WELL AS CONTRIBUTE TO THE ATTAINMENT OF LEARNING GOALS
QUESTION AND HYPOTHESIS

QUESTION: WHICH TYPE OF MUSIC, JAZZ, COUNTRY, POP, OR ‘SILENCE’ ALLOWS STUDENTS TO ACADEMICALLY DO BETTER?

HYPOTHESIS: IF I HAVE 4 GROUPS TAKING WORD SEARCHES BASED OFF OF A CERTAIN TYPE OF MUSIC THEN THE PEOPLE WHO TAKE THE WORD SEARCHES WITH COUNTRY MUSIC WILL FIND MORE WORDS BECAUSE COUNTRY MUSIC IS CALMING AND WILL HELP WITH CONCENTRATION MORE THAN OTHER TYPES OF MUSIC.
VARIABLES

• **INDEPENDENT**: THE MUSIC THEY ARE LISTENING TO WHILE TAKING THE TESTS

• **DEPENDENT**: HOW MANY WORDS THEY FIND IN 3 MINUTES

• **CONTROL**: TESTS IN SILENCE

• **CONSTANT**: THE PEOPLE IN EACH GROUP, THE TESTS THEY ARE TAKING DEPENDING ON THE MUSIC, THE AMOUNT OF TIME ALLOWED
MATERIALS NEEDED

1. PEOPLE (MIDDLE/HIGH SCHOOL AGED)
2. 4 WORD SEARCHES (45-51 WORDS IN EACH)
3. TIMERS
4. HIGHLIGHTERS
5. CLASSROOM WITH DESKS
6. A CD WITH THE DIFFERENT INSTRUMENTAL VERSIONS OF THE 3 SONGS YOU ARE USING
7. A SET OF DIRECTIONS TO GIVE THE PEOPLE TAKING THE TEST.
WORD SEARCHES

Silence – Musical Instruments

Jazz – U.S. Presidents
Pop – U.S. State Capitals

Free Printable Word Search Puzzles

USA State Capitals

Find and circle all of the USA State Capitals that are hidden in the grid. The remaining letters spell a secret message – a Bill Vaughan quotation.

A T C I T C G S A L E M I A T A N T A Z E E H
N R O F A K R E B O I Q I S E N N E Y E H M R R A I L
L C E A U W J U N E A U I T O D T Y L L C R R I O
S N S O T B H O E C A O S I N N E H T E R E L
Y T I M C A S R A L K T C K L A F O I A D
N O L F O I G H L C N N L T N C O N B F P U R
D O N N L D R D A A E O Q I X M E R A C O L O
T L P A U C R H J R S A O T I M O M A P N A C C
G A N L C A Y D R E B K T O N T A M O I C N
Q N E N U S H N E C M B L U N E R O S L L O
B S N L S T O F N A A L E A T D L L T O C I C
D I A E W M F E D T U O H N A R G H O E A B S
E N E N M E D I D A R R O O T C U S A O P K S R
N O S C A J H N P A E F M C O S W H M T A H
V N A V O R T L V K E A K T S R U E O C E E T
E R T O N O S E N T O C O L U M B U S I V R O
R T R S U T I D A D E I F O N I R P S T N E Y
I P N G U J R A R A M O N T P E L I E R N A A E T
I O E N H A F F L E A L Y A T P M Y L O C E T S
N A S H V I L L E S A L T L A K E C I T Y I O N

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Country – U.S. States

Free Printable Word Search Puzzles

USA States

Find and circle all of the USA States that are hidden in the grid. The remaining letters spell a secret message - an Alistair Stevenson quotation.

V I M P H A W A I I A N D S I E D H O R
I W A O A E A M E S S O U T H D A K O T A T A R R
R Y I S I N I A R K A N S A S A N I L A E
G O N A B H N Y N Y A S A R B E N N O W A D
G E R R O D S T O N N O R M E E R V T N E U T O O
G N S O I C W Y M A I N I S O T K N
I N A A E B E A A A I C A O L S T S U L O M
A G N K O A E N L C V N M L I V E C A N P
I R I E N S T H A I A I A I N I H D E E A
P N L Y T I V O I C L B B N R N R N T O D A W N
P O D R E E S G K O A E A G I C M S E W H Y
I A R D N S A S A R A W L I M E A E U L A A K
S D A P A N R A C Y D N I N A P E C A S M C A
S I C H S R S C E U I N F I E S A W P S H R I N
R H S I H O R J A R O T D O T S S N A I S T D
S L R U S T L O O T E B H O N E N Z E G I E O
I F O T U I A H S O N E R N N I S T R K K
M S N M A S S A C H U S E T T S S E A R A O G H
S A K E T N E W M E X I C O E T T A N K E S

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1. Gather your required materials; for the people you will need at least 20
2. Find four 45-51 word word searches
3. Make your directions for the people taking the test so they are not doing things out of order or incorrectly and give each group the same directions
4. Group A will have silence, jazz music, and pop (in that order); Group B will have silence, pop, and country (in that order); Group C will have silence, jazz, and country (in that order); and Group D will perform all the word searches in silence
5. Administer the tests, each test will be different for the different music styles, to Group A, allowing 3 minutes for completion
PROCEDURE (CONT.)

6. REPEAT STEP 5 WITH GROUPS B, C, AND D MAKING SURE TO CHANGE THE MUSIC TYPES AND WORD SEARCHES AS YOU CONTINUE TO ADMINISTER THE WORD SEARCHES

7. ADMINISTER ALL THE TESTS TO GROUP D, WHICH WILL BE DOING ALL OF THEM IN SILENCE, ONLY ALLOW 3 MINUTES FOR COMPLETION

8. AFTER GIVING EACH GROUP THEIR TESTS, REMEMBER TO “SCORE” THE TESTS AND SEE HOW MANY WORDS THEY FOUND. FIND THE AVERAGE AMOUNT OF WORDS FOUND ON THE TESTS FOR EACH GROUP, AND THEN FIND THE AVERAGE AMOUNT OF WORDS FOUND PER GROUP

9. RECORD YOUR DATA IN A JOURNAL
DATA
### SILENT DATA

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<th>Musical Instruments</th>
<th>U.S. Presidents</th>
<th>U.S. Capitals</th>
<th>U.S. States</th>
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<tr>
<td>Silence</td>
<td>Jazz</td>
<td>Pop</td>
<td>Country</td>
</tr>
<tr>
<td>1d</td>
<td>3</td>
<td>7</td>
<td>3</td>
</tr>
<tr>
<td>2d</td>
<td>4</td>
<td>7</td>
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</tr>
<tr>
<td>3d</td>
<td>7</td>
<td>5</td>
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<td>4d</td>
<td>3</td>
<td>5</td>
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</tr>
<tr>
<td>5d</td>
<td>12</td>
<td>7</td>
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<table>
<thead>
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<th>Musical Instruments</th>
<th>U.S. Presidents</th>
<th>U.S. Capitals</th>
<th>U.S. States</th>
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<td>6.2</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>8.2</td>
</tr>
</tbody>
</table>
The Average Amount of Words Found Based on Music and the Topic of the Word Search

- Silence (N=15): 5.8 Words
- Jazz (N=10): 5.9 Words
- Pop (N=10): 6.2 Words
- Country (N=10): 9.4 Words
The Average Amount of Words Found in Silence Based on the Topic of the Word Search

- **Musical Instruments (N=5)**: 5.8 Words
- **U.S. Presidents (N=5)**: 6.2 Words
- **U.S. Capitals (N=5)**: 5.0 Words
- **U.S. States (N=5)**: 8.2 Words
The Difference Between the Music and Silent Tests

- Silence: 0.0 Word Difference
- Jazz: -0.3 Word Difference
- Pop: 1.2 Word Difference
- Country: 1.2 Word Difference

Legend:
- Blue: Music
- Orange: Silence
- Gray: Difference Between Music and Silence
CONCLUSION

• MUSIC HAS A SLIGHT EFFECT ON THE AMOUNT OF WORDS FOUND

• COUNTRY AND POP MUSIC HAD THE GREATEST AFFECT ON THE AMOUNT OF WORDS FOUND; THEY DID 1.2 WORDS BETTER THEN THE PEOPLE WHO PERFORMED THE WORD SEARCH IN SILENCE
FURTHER RESEARCH

• IN THE FUTURE I COULD FURTHER THIS, USING MORE PEOPLE TO GET MORE ACCURATE INFORMATION

• I COULD ALSO USE DIFFERENT WORD SEARCHES THAT MIGHT BE HARDER THAN TOPICS THAT WOULD BE COMMON TO THE AVERAGE STUDENT
POSSIBLE SOURCES OF ERROR

- SOMEONE COULD HAVE DONE THE WORD SEARCH BEFORE AND HAD AN ADVANTAGE
- INCONSISTENT TIMING
WHAT I’D DO DIFFERENTLY

• I WOULD CHANGE THE AMOUNT OF PEOPLE WHO PERFORMED THE WORD SEARCHES
• I WOULD CHANGE THE WORD SEARCHES DIFFICULTY OR THE EASINESS OF THE WORD SEARCHES
• I WOULD TRY AND ENCOURAGE MORE PEOPLE TO BE INTERESTED IN PERFORMING MY EXPERIMENT
THANK YOU!

• THANK YOU TO MR. GUNThER FOR ALLOWING ME TO DO THE PENNSYLVANIA JUNIOR ACADEMY OF SCIENCE

• THANK YOU TO ALL THE PARTICIPANTS

• THANK YOU TO EVERYONE WHO HELPED ME ALONG THE WAY
SOURCES


