Using Songs to Strengthen Reading Fluency

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Abstract

This study evaluated the use of songs with lyrics to increase the reading fluency rates of three middle school students. In the first condition, students heard fluent reading modeled, read regular passages repeatedly and then received feedback on accuracy, phrasing and expression. After that, students received the same intervention, except that songs with lyrics were used instead of regular passages for the repeated readings. CWPM (correct words read per minute) gains showed rate increases following re-readings of each passage and set of lyrics; however, greater increases in CWPM were made following the song lyrics passages suggesting that using song lyrics may be a superior way to strengthen fluency. Overall transfer fluency rate gains, measured using new and unfamiliar passages, also showed rate increases, though these were less consistent.

Keywords
fluency, repeated readings, lyrics, songs, oral reading, CWPM.

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Reading fluency has received a recent resurgence of attention, as it is one of the defining characteristics of good readers (Hudson, Lane & Pullen , 2005; Pikulski &; Therrien, 2005). Not only do differences in fluency help to distinguish good readers from poor readers, but fluency is correlated to reading comprehension (Carnine, Silbert, Kame'enui & Tarver, 2004; Fuchs, Fuchs & Hosp, 2001; Kuhn, 2005; Pikulski & Chard, 2005; Pinnell, Pikulski, Wixson, Campbell, Gough, & Beatty, 1995; Therrien, 2004). Whether fluency results from, or contributes to, reading comprehension may not yet have been determined; however it appears that both foster each other (Stecker, Roser, & Martinez, 1998). Given this importance, fluency has become an integral recommended part of many reading programs (Kuhn & Stahl, 2003; National Institute of Child Health and Human Development, 2000; National Reading Panel, 2000).

This study explores whether using lyrics from popular songs would enhance overall fluency.

Reading fluency is defined as efficient, effective decoding skills along with accurate, rapid, expressive, prosodic oral reading that allow students to comprehend texts (Pikulski, 2006). However, since many poor readers have difficulty with these components of oral reading, their fluency suffers (NICHD, 2000; Therrien, 2004).

Research shows that repeated readings of passages increase fluency, but that a passage should be repeatedly read for a maximum of three to four times as the gains made following more than four repeated readings cease to be significant (O'Shea, Sindelar & O'Shea, 1985; Therrien, 2004). Kuhn and Stahl (2003) also concluded that adult guided approaches, particularly with corrective feedback, are superior to independent reading in improving fluency. Finally, and central to this study, they recommend moving beyond just fostering automatic decoding to include rhythm, expression, and prosody to help 'unglue' students from print.

In another meta-analysis in which, again practices such as repeated reading were found effective, Therrien (2004) proposed that students who read in this choppy, 'glued to print' way may be constrained by poor prosody (Therrien, 2004). Given the importance of prosody, and the fact that this element is often overlooked (Kuhn, 2005), we searched for ways to develop prosody that would be appealing to our adolescent students. Singing, we hypothesized, would enhance fluency as well as be enjoyable for the students.

Several fluency researchers have recommended using songs to enhance fluency (Rasinski, 2006; Sample, 2005). Sample (2005) proposes that adolescents are motivated by music and would enjoy using class time to learn the words to popular songs with high-frequency words and patterns. Songs naturally lend themselves to re-readings, a research-validated practice for building fluency (Therrien, 2004). Douville (2001) also argues that the rhythm and repetitive characteristics of songs have the potential to strengthen not only students' oral language development and motivation but their reading fluency skills. Yet we could not find any studies in which this had been investigated, or even any research on using music to facilitate fluency, and so we sought to explore this.

Furthermore, as a goal of any intervention is that the gains transfer to other situations, we also wanted to measure whether gains made during the repetitive readings of the songs would transfer to other

texts. Though repeated readings do have the potential to improve student's overall fluency, the gains may be moderate in transfer to other texts (Therrien, 2004). Research has shown that achieving the kind of large steady fluency gains that might enable students to 'close the gap' with their regularly achieving peers may not be easily achievable (Rashotte, MacPhee & Torgesen, 2001; Torgesen, 2005).

In sum, this study explores whether using lyrics from popular songs would enhance the overall Correct Words Per Minute (CWPM) fluency rates of our students and if the fluency gains would transfer to other passages. As fluency gains can be so difficult to achieve (Torgessen, 2005), we also explored how motivating singing might be for our students. Since students must practice fluency and returns for their efforts may be modest, we wanted to not only find the most effective way to build fluency but also to do so in the most enjoyable way.

We also wanted to measure whether gains made during the repetitive readings of the songs would transfer to other texts.

Our Students

Our students included one sixth grader, Adam, and two seventh graders, Marisol and Gretchen, all of whom attended resource room three times a week for 55 minutes for literacy support.

Gretchen was formally diagnosed as having a language-based reading disability, with a specific weakness in phonics. Her word attack, spelling and fluency skills were well below the typically developing range when compared to national standards and even lower when compared to her academic peers. Since our school had an application based entrance policy, the average student surpassed national standards. Gretchen's reading tended to be slow and choppy with a large number of hesitations and substitutions with multi-syllabic words. When Gretchen would get stuck on a word, she would begin to mumble and hesitate using the sound 'mmm'. If she was not able to decode the word after a few attempts, she would make up a word that she thought would fit based on the first few letters of the word. If the word had an irregular orthographic pattern, Gretchen would usually struggle with the word, unless she had seen it several times before and was able to read it automatically. Her weaknesses in decoding and word attack, made her reading rate slow, and monotone, which lacked both accurate phrasing and prosody.

Marisol showed classic signs of a language-based reading disability such as transposing letters when spelling, below average reading speed and word attack skills, poor knowledge of orthographic patterns when reading and spelling, poor organization in writing and lack of understanding the writing process. Although, Marisol's word attack skills and reading speed was higher than both Gretchen and Adam, her scores were still lower than her academic peers. Her reading speed, accuracy and attention to punctuation varied. At times, she would appropriately pause at punctuation and either automatically read a word or decode multi-syllabic words efficiently. At other times, she would rush through reading, without paying attention to punctuation, accurate reading or phrasing. From observations, Marisol seemed to inaccurately define fluency as fast reading, without attention to accurately reading words, phrasing text to show comprehension and reading in a melodic manner.

Adam showed classic signs of a language-based reading disability such as

transposing letters when spelling, below average reading speed and word attack skills, poor knowledge of orthographic patterns when reading and spelling, poor organization in writing and lack of understanding the writing process. Since he was new to this country, we were sensitive to cultural views of psycho-educational evaluations, and refrained from suggesting Adam to undergo a full battery assessment at this time. Adam read in a slow rate and a monotone tone, where he would not pay attention to punctuation or phrasing; thus defining his reading as word–by-word reading. Since his word attack skills were weak, he struggled with sounding out words that were not automatic, so his reading sounded choppy. Unlike Gretchen, he struggled with both single and multi-syllabic words, and would either substitute or omit the word if he did not know it automatically.

All students individually charted their reading rate and accuracy every day.

Beginning with Assessments:

Whenever we use a new technique to use with our students, our first step is always to design a plan for monitoring its effectiveness. This enables us to determine whether it achieves our goals. In this case, we began by administering a standardized measure of reading fluency to our students, then also measuring their initial CWPM rates before beginning our fluency program.

Standardized Fluency Measures**:** Students were formally assessed in fluency, before and after the repeated readings of regular passages and after the repeated readings of song lyrics with the Woodcock Johnson Reading Fluency Subtests, Forms A and B.

CWPM Measures**:** The teacher documented student's reading rate in seconds and accuracy every day. This was done for both every repeated reading passage in the first phase and again for every repeated reading of song lyrics in the lyrics condition. Each passage and set of song lyrics ranged from 160-200 words.

During the repeated reading of passages only, the teacher calculated each student's CWPM by counting all words read correctly and dividing by time spent reading to determine words read correctly per minute.

During the repeated reading of song lyrics, all students individually charted (Appendix A) their reading rate and accuracy every day. As the students engaged in daily repeated reading, the teacher documented the students' errors and total time it took to complete the passage. Upon completion of reading, the teacher met with each student individually to discuss reading errors and amount of time it took the student to read the passage in seconds. After the discussion, the student used bar graphs to chart out the number of errors and time (in seconds) it took to complete the reading of the passage.

Assessing Motivation: As a group, the teacher and the students discussed their feelings and perceptions about the intervention after each phase. The teacher, informally, asked, "Do you like the fluency activity we just did?", "What did you like/dislike about the fluency activity?" The teacher also observed the students' behaviors in terms of:1) spontaneous comments, 2)facial gestures, and 3) level of energy and excitement.

Prosody: The teacher informally observed for prosody while each student individually read aloud each passage or set of song lyrics. During the repeated reading of

regular passages stage, the teacher listened to make sure that each student was not reading in a monotone, choppy or robotic method. She also listened to make sure that the student was not rushing to finish, failing to take into account punctuation and natural pauses and intonation in sentences. She would explicitly and overtly model intonation, phrasing, rate and tone any time that she was required to reading during the stages of intervention and would remind the students to emulate these. If any of the students read in an overtly choppy or monotone way and/or without any regard to punctuation or phrasing of words, the teacher would discuss this after they finished reading the passage/song lyrics. She would model their inappropriate reading and compare it to a more appropriate model.

Fluency and Reading Strengthening Strategies Used in Both Phases

The following basic research-based principles recommended in Rasinski (2003) informed the specific approach we used to develop fluency:

1) Model. Teacher models fluent reading to the student. Teacher particularly makes phrasing and intonation of text readily apparent so it can be mimicked and applied.

2) Support or Assistance. Teacher or peers give the student support on accurate reading and feedback.

3) Extensive opportunity to practice. Students have an opportunity to practice fluent reading and fluency skills on a frequent basis.

These principles were used in both the repeated readings of regular passages phase and in the readings of song lyrics phase. Additionally, while practicing fluency in both phases, students also received daily structured lessons in research-validated practices that addressed decoding skills such as segmenting words, pseudo and real word reading practice, scooping or blending individual syllables, and word sorts as described in Laud & Patel (2007). This helped strengthen their decoding accuracy as they read.

The introduction of songs and lyrics during class brought about a certain element of excitement.

Stage 1: Repeated Reading of Regular Passages Stage:

During the first eight-week stage of this intervention, students read passages each from content area classes such as excerpts from books they read in English class. Marisol and Gretchen were learning about Arabian tales in their English class, and reading the book *One Thousand and One Arabian Nights* by Geraldine McCaughrean while Adam was learning about India and was reading the book *Homeless Bird* by Gloria Whelan. Therefore the students read excerpts from their book ranging in 160-200 words. Each student repeatedly read a total of four passages during this stage. In *One Thousand and One Arabian Nights,* students read an excerpt from page 42 that begin with, “One morning…” and ended on page 43 with, “ white hail.”.

Students followed the following consecutive steps during the repeated reading of regular passage stage for each set of three days used to repeatedly read each passage.

1. On the first day, students first heard the passage modeled by the teacher, with appropriate phrasing, expression, rate and reading. After the modeling, each student read the passage aloud, individually. The teacher documented errors in reading and the amount of time it took each student to finish the passage. Omissions, additions, substi-

tutions and misread of words were considered errors. Next, the teacher showed each student individually his/her errors and time. Therrien (2004), in his meta- analysis of effective fluency building practices recommended using such a corrective feedback component because students in studies using this made greater gains. By this, the teacher gave immediate or delayed corrective feedback as they read. Then general feedback on speed, accuracy and prosody were given after the student completed the passage. The students documented the errors and time on a chart. Finally, each student created a goal to reduce his/her number of errors and seconds to read the passage for the next consecutive repeated reading.

2. On the second day, each student read the passage aloud in isolation for a second time, keeping his/her goal in mind, without the teacher model this time. After reading, the teacher individually met with each student to share errors and total read time, and to create another goal for the following day.

3. On the third day, each student read the same passage aloud in isolation for the final time, again keeping his/her goal in mind. After the teacher shared his/her error and total read time, each student concluded if goal had been met.

Songs with Lyrics as Passages Stage:

During the next eight-week stage of this intervention, students listened to songs and repeatedly read the lyrics on consecutive days. We searched for songs that did not have long interludes, musical solos or inappropriate lyrics or connotations. We also looked for songs that had rich vocabulary, an appropriate balance of chorus and other lyrical stanzas, and songs that had a slow to medium rate with clear phrasing and singing of lyrics so that the words could be clearly understood. The three songs chosen were: *What Makes You Different Makes You Beautiful* by Backstreet Boys, *Lemon Tree* and *Leaving on a Jet Plane* by Peter, Paul, and Mary. The students read the each stanza and each chorus, as many times as it repeated, during the repeated readings. Full lyrics for each of the songs used during this stage can be found on lyrics.com.

We looked for songs that had rich vocabulary.

Students followed these steps during the repeated reading with lyrics as passages stage.

1. On the first day, students listened to the song as they followed along reading with the lyrics. While listening to the song, students had an opportunity to hear appropriate phrasing and intonation along with rate and accurate reading of text. The teacher, then, orally read the lyrics (as-is, without removing any chorus) to the students, to ensure that the students understood that they would not be singing the lyrics but rather reading what they heard as a song using the tune and melody to help phrase their reading to make their repeated reading more prosodic. Such adult modeling tended to increase fluency effect sizes by more than three times than when fluency was modeled by peers (Therrien, 2004); thus making teacher modeling an integral part of increasing fluency.

Table 1: CWPM Gains for Phase 1: Repeated Readings of Regular Passages

	Marisol	Gretchen	Adam*
Passage 1a: 189 words			1b.:181 words
Read 1	133	109	63
Read 2	154	128	97
Read 3	174	133	114
Passage 2a: 187 words			2b:195 words
Read 1	130	74	75
Read 2	146	100	89
Read 3	177	141	158
Passage 3a:197 words			3b.:193 words
Read 1	133	99	65
Read 2	168	133	76
Read 3	183	150	114
Passage 4a: 196 words			4b: 185 words
Read 1	136	122	76
Read 2	189	149	105
Read 3	189	151	108

Note: There is a variance in word count in the passages that Adam read, since he was not in the same class as Marisol and Gretchen.

2. Next, the students and teacher choral read the passage. Choral reading is when the group both the person who is guiding the fluency and the others –those whose goal it is to increase their fluency—read the passage together. Those whose goal it is to increase the fluency simultaneously read the passage and are able to use the one guiding the fluency reading as a model as they read.

Two of the three students came far closer to the mean, and one surpassed it.

3. Once the modeling and guided reading portion was completed, each student read the lyrics in isolation, as the teacher documented errors and total read time in seconds. Omissions, additions, substitutions and misread of words were considered errors and were documented. The teacher, then, showed each student his/her errors and time, and provided them an opportunity to graph their individual data on a chart. Corrective feedback was also given.
4. On the next two consecutive days (day 2 and day 3 of this stage), students first only listened to the song as they followed along an individual copy of the lyrics. Next, they choral read the lyrics while they listened to the song. The students were prepped not to sing with the song, but rather read the song as they listened to it. Then each student individually read aloud the song modeling appropriate phrasing and intonation heard by listening to the song. The teacher documented errors and total read time in seconds and conferred with each student about his/her errors and time. Each student used his/her information and graphed it on their chart
5. On the fourth and final day of repeated reading of one song, the students individually read the song lyrics in isolation. This time, the students did not listen to the song before reading. After, the teacher documented errors and total read time in seconds and conferred with each student about his/her errors and time. Each student used his/her information and graphed it on their chart.

Fluency Gains

Analysis of the gains following each repeated reading trial show an increase of CWPM following both interventions. The average gains during repeated readings of regular passages were 51.4 CWPM. In contrast, the average gains for the repeated readings of song lyrics were 83.2 CWPM. Overall, there was a greater gain of 31.8 CWPM for the lyrics phase.

According to Hasbruck and Tindal (2006), average fluency rates for these ages are 140 CWPM for sixth graders, with a range of 82-195. For 7th grade, the average is 136 with a range of 88-192. Our sixth grader began at 63, which is far below the norm of 140. Our seventh grade students began at 109 and 133, also both below the norm of 136. By the time they read the final passages, the sixth grader read at 94 and the seventh graders read 150 and 119. Two of the three students came far closer to the mean, and one surpassed it.

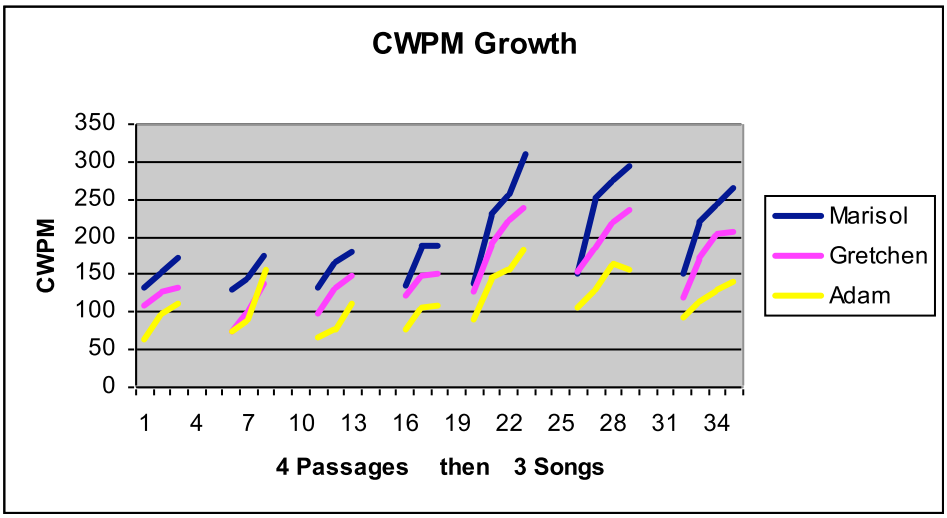
Table 2: CWPM Gains for Phase 2: Repeated Readings of Song Lyrics

	Marisol	Gretchen	Adam
Song 1 (271 words)			
Read 1	139	126	90
Read 2	231	190	145
Read 3	258	222	157
Read 4	313	241	186
Song 2 (223 words)			
Read 1	150	155	105
Read 2	251	185	129
Read 3	275	221	164
Read 4	297	239	156
Song 3 (294 words)			
Read 1	150	119	94
Read 2	219	173	113
Read 3	244	205	131
Read 4	267	207	142

Table 3: Gains in CWPM Between First Three Repeated Reading Trials.

	Marisol	Gretchen	Adam	Group Average Gains
Repeated Readings of Regular Passages Condition				
Average Gains	46	47.3	61	51.4
Repeated Readings of Song Lyrics Condition				
Average Gains	112.7	82.7	54.3	83.2

Figure 1:Individual CWPM Growth between each repeated reading trial of both stages



According to the fluency subtest of the Woodcock Johnson, the overall scores from the pretests conducted before both interventions to the post tests conducted after both interventions show a final fluency rate increase of an average 6 months. Specifically, following the repeated readings of regular passages, Gretchen and Marisol's scores rose. On the other hand, following repeated readings of song lyrics, and using the post-tests following the repeated readings of regular passages as a pretest for the repeated readings of lyrics phase, only Adam's scores rose.

Discussion

This study explored the effectiveness of using songs and lyrics to increase both measures of reading fluency that assess immediate gains on the same passages read repeatedly and on transfer gains to new passages. Overall, the number of CWPM during each repeated reading trial (non-transfer fluency measures) increased following each of the interventions for all three students. This reaffirms the effectiveness of repeated readings at increasing oral reading rates (Therrien, 2004).

According to the Woodcock-Johnson fluency subtest that assessed transfer gains, collectively, all three students showed an increase in fluency rates from their initial pretest fluency scores following the final comprehensive post-test after both interventions were conducted. These gains were less dramatic gains than those made by the CWPM rate increases, and the repeated readings of regular passages showed a slightly higher gain.

However, perhaps the gains measured by the Woodcock Johnson might have been influenced by the order in which the interventions were delivered. As greater gains are often made during the initial stages of an intervention (Torgessen, 2005), it may well be particularly impressive that greater CWPM gains were found during the second phase which was reading song lyrics. Had we done the lyrics intervention first, we suspect the Woodcock Johnson scores would have shown greater gains for this phase and the CWPM gains would have been yet even higher. Fur-

thermore, regarding the lower transfer gains, we did not place much emphasis directly on the kinds of strategies that would facilitate transfer such as explaining the rationale to students for why they are working on fluency, helping them see how this will help them, designing self-talk statements to cue them to use it in other situations and helping them attribute other successes to their increased reading fluency (Wong, 1994). We believe that if we had, we would have seen even further transfer. In either case, based on these results teachers may be best advised to use both interventions with song lyrics supplementing repeated readings of regular passages, as using both resulted in noteworthy gains according to both CWPM and transfer to new passages gains.

Table 4: Woodcock Johnson Fluency Subtest Scores

	Adam	Gretchen	Marisol
Initial Pre-Test (Form A)			
Raw Score	33	49	49
Age Equivalent	9-0	11-4	11-4
Grade Equivalent	3.6	6.0	6.0
Post-test Regular Passages (Form B)			
Raw Score	30	55	58
Age Equivalent	8-8	12-8	13-4
Grade Equivalent	3.3	7.3	8
Post-test Song Lyrics (Form A)			
Raw Score	36	50	56
Age Equivalent	9-3	11-7	12-11
Grade Equivalent	3.8	6.2	7.6

Regarding the gains that were shown with the CWPM measures, the effects of the repeated readings of the lyrics show larger increases than those made in the repeated readings of regular passages. The repetitive nature of lyrics in songs may have contributed to the students' large jump in the CWPM rates. Additionally, as the students listened to

the song daily, it may have prompted them to pick up their rate and increase their accuracy since they were hearing the words in a lyrical matter. This may have helped them to group words together in appropriate phrases, allowing them to parse texts together and to look at the words as units rather than individual words. We suspect this engagement aided in prosodic reading; although not formally assessed, the teacher observed the students' phrasing, pausing and intonation changed in similar ways as heard from the song. Also, the lyrics were organized in stanza form, where each line only had a few words on it, thus looking similar to a poem. This form, may have possibly tuned the students into parsing the text more readily, since each line was already separated with a few words. In fact, both Marisol and Adam commented that the lyrics were organized like poems; Marisol went on to further suggest that they should be read with more expression if similar to a poem. If this is the case, the lyric stage could have provided a visual cue for parsing and may have helped the students read with greater prosody. A future study is necessary to see if the organization of the text did in fact play a role in increasing CWPM rates and prosodic reading. Additional research should also control the format of both song lyrics and excerpts in text, to allow for stronger conclusions about the benefits of using song lyrics for fluency instruction.

All three students showed an increase in fluency rates from their initial pretest fluency scores

Based on the informal observations and discussions between teacher and student, student motivation and interest in fluency appeared to increase during the repeated readings of song lyrics. The teacher observed that during the song lyrics stage, the students came into class asking when they would get to complete the fluency portion of class, whereas during the regular reading stage the students made no anticipatory mention. Specific responses the questions that the teacher asked after each stage, elicited more favorable responses during the song lyric stage. During the regular reading stage, all three students seemed passive with their responses, and seemed to think the fluency assignment was just something they had to do in class, although they enjoyed the goal-setting aspect. During the song lyric stage, the students commented that they liked listening to the songs and thought the teacher was nice to let them do something that they do outside of school in school. Also, the students expressed that listening to the songs kept the class interesting, and kept them focused because after they listened to the song they were not allowed to sing the song but rather read the song as they heard it sung, which was not the same task. The distinction the students made seems to elude to the fact that during the song lyric stage, the students were beginning to understand the definition of fluency as not only accurate reading with an appropriate rate but also an engagement in prosodic reading with emphasis on expression, intonation, parsing and tone.

This study further reaffirms the idea of using songs to foster a higher level of engagement and motivation for the reading task (Douville & Wood, 2001). The introduction of songs and lyrics during the class brought about a certain element of excitement, as if the students were allowed to do something that they did at home or during their free time. This increased interest helped to shape their understanding of the true definition of fluency and motivated them to reach their

goals more readily. This may be one of the most important parts of the study, as these students can be challenging to motivate. If transfer gains made by various fluency approaches are equally modest, then it makes sense to use the route that is most enjoyable and motivating which song lyrics seems to be.

Another motivating factor in this study was that during the repeated readings of song lyrics, students charted their progress daily. A separate bar graph was used to indicate errors in reading and seconds it took to complete the reading. The daily charting proved to be extremely motivational as students visually saw their daily progress (Bear & Boone, 1998; Therrien, 2004 & Rasinski, 2006). The combination of using songs and lyrics as the reading material and the daily charting to monitor success yielded positive motivation and helped students persevere with the task of increasing fluency despite the challenges in doing so.

Future research could explore integrating songs and lyrics into methods used a recent model of fluency development that did achieve significant gains, specifically Read Naturally (Denton, Fletcher, Anthony, & Francis, 2006). Furthermore, as the gains during the CWPM were larger than during the lyrics condition than during baseline, perhaps a longer study using the lyrics method might yield greater gains in transfer.

There are several limitations in this study. First, since the study was done in the teacher's resource room class, she used a convenience sample, which was quite small. Future research should evaluate the effectiveness of using song lyrics for fluency instruction with a more randomized sample that has more subjects. Second, the readability levels of the excerpts and song lyrics were not controlled for in both stages. If the reading level of one stage is easier, this factor could easily inflate the CWPM for that repeated reading cycle/stage. Third, the students read every chorus during the song lyric stage. Songs by nature, have a repetitive chorus after one or two differing stanzas. Therefore, they may have begun to memorize the chorus. If this was the case, then CWPM scores may possibly be inflated as well. One can argue, that the students were repeatedly reading during both stages; therefore, they could have easily memorized any portion of either the excerpted text or song lyrics. Future research should control for the number of times the students repeatedly read the chorus in songs, to see if there is an effect on CWPM.

We began this study questioning the effectiveness of using song and lyrics as repeated readings to increase fluency and whether this could be another viable method for building oral reading fluency. Our results show that according to CWPM gains and transfer measures, the three students did increase their fluency overall following both interventions, thus encouraging the usage of songs and lyrics as part of an overall program for building fluency. In addition, the increase in motivation when singing was remarkable in that the three students seemed to enjoy the task when songs were used, and to have a larger appreciation for fluency, not only isolated to accurate and fast reading, but for prosody as well. Given the importance of addressing fluency, this technique seems to be not only an effective way to address it but also motivating which is critical when working with adolescents.

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Appendix A: Individual Reading Rate and Accuracy Chart