

Running Head: SCHOOL LIBRARIES AND DEAFNESS

Evaluating the Effectiveness of Library Media Programs for Deaf Students.

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Abstract

A school's library media program should provide equal access to materials and instruction for all students and patrons. This action research will examine the effectiveness of Marshall Middle School's library media program with regard to its main academic objectives: curriculum support, reading development and information literacy. The research will determine the degree to which both general education students who have participated in one year of the program, and students from the Deaf and Hard of Hearing population experienced the program similarly. Factors that will be examined include the use of library materials in class assignments, the students' self-assessments in terms of their reading ability, and students' confidence in their ability to access the library without adult assistance. It is expected that this study will provide strategies for improvement, expansion, or refinement, working towards the goal of an equitable programs for all students.

Action Research Proposal Evaluating the Effectiveness of Library Media Programs for Deaf Students

Introduction

Trends in education are moving the school library, as well as the library media specialist, away from a role as a clerk and office worker and into the role as teacher and educational partner. For a school library to function as a partner in student achievement and learning, the program must be intentionally designed to meet the needs of every student who may use it. Students who are differently-abled must be considered and accommodations put in to place that will allow these users a positive, accessible library experience.

Statement of Problem

The current library program at Marshall Middle School uses a bi-monthly collaborative teaching model, involving elements of instruction in information access, using the library independently, language arts development, as well as general reading appreciation and development. Traditionally, little has been done in the way of specifically accommodating students who may have special needs, including the significant population of students who are Deaf and Hard of Hearing (referred to as DHH).

According to the American Association of School Libraries, a fundamental principle in administering an ethical, effective program directs the specialist to provide “physical access to informational and resources for learning (AASL, 1998, 186). One specific goal for the library media specialist is to be flexible in providing accommodations to student based on their needs. This goes beyond simple measures; passive attempts at removing barriers after complaints have been registered are not adequate. Pro-active intentional efforts should be regularly included to allow access to all users prior to a problem arising.

As the Library Media Teacher (LMT) and primary facilitator of the library program at Marshall Middle School, I believe that I have developed a program that addresses all students’ specific needs, inclusive of hearing impaired students. Anecdotal evidence and my own observations lead me to believe that all students have received a similar level of benefit, however, no direct data is available to indicate whether these efforts are effective or not. The specific focus of this action research will be to evaluate if, in this context, equal access to the library resources and instruction has indeed been provided to both hearing and DHH students.

The study will include thirty-five seventh grade and eighth grade students, both normally hearing and DHH, who have participated in the established library media program for one academic year. The study will look for differences between these two subgroups in terms of how the students see connections between library instruction and their content area classes, in terms of how they view their own reading ability on a variety of formats, and in terms of how able they are to use library resources independently.

This action research will aim to provide answers to these questions:

1. Among students who regularly participated in an established library program during the 2006-07 school year, what significant differences exist between normally hearing students and students who are hearing-impaired relative to: library connection to classroom activities, student perception of reading ability, and student perception of Library accessibility?
2. What factors account for the identified differences?
3. What interventions on the part of the LMT can be made to provide a more equitable learning experience for these groups?

Significance of the Problem

The school library is an essential piece of all students' educational experience, not just those who have no physical limitations. This study looks at a specific carefully designed library media program, after its enactment over an entire school year, in terms of how effective it was for both students who are normally hearing and those who are hearing impaired. This information will reveal if the library program is meeting the needs of these two groups equally and effectively. Areas where this is found to be ineffective or unequal can be identified for reform and improvement.

Definition of Terms

“Students who participated in an established program”

- Students who were brought to the library for instruction with their classes every two weeks for one class period throughout the 06-07 school year.

“Connection to classroom activities”, “perception of reading ability,” and “Library accessibility”

- These variables are measured by asking students to complete an ordinally scored questionnaire in the indicated categories. The questionnaire will state an opinion, such as “I think I am a good reader,” and ask them to indicate their level of agreement (1-5, 5 = “strongly agree”) *Instrument included in Appendix*
 - “Connection to classroom activities” asks questions relating how students used materials, activities or concepts to complete classroom assignments in History, English, or Science.
 - “Perception of reading ability” asks how students to self-rate their reading ability in relation to both “for-fun” reading and reading done for school classes.
 - Library Accessibility” asks students about their confidence in using the library without the assistance or direction of their teacher.

“Normally hearing student”

- Student who has no Individualized Education Plan (IEP) relating to hearing impairment.

“Hearing Impaired Student”

- Student who has an Individualized Education Plan related to some hearing impairment.

Review of Literature

The review of relevant literature focused around these core issues: the benefit of a strong school library program, reading development in deaf students, specific issues with deaf library patrons, and possible solutions/ best practices for optimizing the library experience for deaf students.

Why is a school library program important?

Much research has been done recently, mainly in attempts to increase compliance with Federal No Child Left Behind Act, which connects a strong school library program to higher student achievement. The Missouri Department of Education (2003) determined that a full-time library media program can account for 10.6% of the variance among schools' achievement scores on statewide-standardized tests. This study pointedly concluded that "no longer is the connection between library media programs and student achievement opinion or a belief"(MDE, p. 6). Likewise, in examining Pennsylvania public schools, Keith Lance, Marcia Rodney and Christine Hamilton-Pennell found in Pennsylvania public schools that when library factors are optimized, reading scores from state administered testing programs consistently tended to be 10-15 points higher than schools who do not have similar library resources (Lance et al, 2000). In his ongoing bibliographical resource, "Keeping Up With the Research Linking School Library Media Center Programs to Achievement" (2006), David Loertscher cited thirteen additional states, including New Mexico, New York, Iowa, Oregon, Ohio, and Colorado, that have published studies similarly linking school library programs to student achievement.

Experts on best practices for school libraries also clearly connect library media programs with increased student achievement. In *Student Success and Library Media Programs* (2003), Lesley Farmer compiled hundreds of studies involving libraries and education, and identified several factors that are consistently shown to correlate positively with student learning. Among these factors is one of specific interest to this action research: increased access. Farmer cites research by Stephen Krashen and David Loertscher, among eight other studies, which pinpoint the connection between the student's ability to make use of the library and available staff (a particular problem with DHH students) and increase in achievement.

How do hearing-impaired students interact with books and reading?

Obviously, reading development is a primary function of any school library. For hearing-impaired students, developing print literacy can be more difficult than students who hear normally. Donald Moores (2006) stated that while deaf students have no inherent cognitive disadvantage as readers, many factors that affect the readiness and ease with which most children to approach literacy may be severely limited in deaf children. Most hearing children enter kindergarten with a working knowledge of vocabulary, syntax, grammar and basic morphological structures; these skills had been acquired through years of interaction with family and peers. However, deaf children do

not typically begin school with these same skills. Their hearing loss may not have been diagnosed immediately, their parents may provide less exposure to reading and language, and deaf children may have less opportunity for social interaction with peers. These factors are what limit the deaf student's potential for acquiring literacy as they enter the school system. "A child who misses five or six years of normal interaction faces a daunting challenge" (Moore, p. 45).

The difficulty encountered by deaf students as they become literate is well-documented problem. In *Educating Deaf Students: From Research to Practice* (2002), authors Marc Marschark, Harry Lang and Jon Ablertini pointed out that despite years of efforts to improve methods and instruction, deaf students still progress in areas of reading and literacy at very slow rates when compared to their hearing counterparts. This becomes a persistent problem; only 3% of deaf 18 year-olds read at a comparable level to hearing 18 year olds (Marschark et al, p. 157). Peter Paul also emphasizes this, citing the well-documented phenomenon that most hearing-impaired students "do not read as well as their hearing counterparts upon graduation" (Paul, 1998, p. 23). His research revealed two specific findings: the average high school graduate generally reads as well as a nine or ten year-old with normal hearing, and that growth in reading levels becomes static around a fourth grade level, with little progressive growth seen after that.

One overlying reason for the difficulty most deaf students encounter while learning to read is that written language reflects the constructs of spoken language. Two main areas that provide great levels of difficulty to deaf students are phonetic decoding and grammar, both of which relate to how English is communicated orally (Marschark, 2002). Most children acquire these structures present in spoken English (subsequently reflected in written English) without much trouble, as they are reinforced and practiced on a daily basis through interactions with teachers, friends, and classmates. Roberta Truax, Sue Fan Foo and Kathleen Whitesell pointed out in their 2004 article "Meeting the Needs of Children Who Are Deaf or Hard of Hearing With Additional Special Needs" that developing literacy in children often models spoken conversation, and that if a child's ability to converse is affected (as is the case with most DHH students) then this process becomes more challenging. Literacy development follows a similar path as spoken language development; the "models and partners" needed to become immersed in language, thereby fully acquiring it, are fundamental components to the process. DHH students often do not get sufficient immersion, either in spoken language or print, to support literacy adequately.

Ideally, literacy instruction for DHH students should be inclusive, focused on instruction that meets student's specific needs, and free of restrictions or limitations due to their disability. A deaf child should receive an educational experience that is equitable, both academically and socially, to any normally hearing child. In a truly inclusive and non-restrictive setting, curriculum and instruction would be designed to allow all students to participate without the need for individual modification. In "Universal Design for Instruction," Scott, McGuire and Shaw suggest that in today's changing society, non-traditional learners, (including students with disabilities or high-risk of failure) are and will continue to be an increasing presence in the educational system. Their "Universal Design" approach to instructional planning focuses on intentionally designing experiences that meet the needs of all learners without the need for case-by

case modifications. Through their research, the authors developed nine principles that identify how Universal Design can be applied in the school setting.

However, it is likely that students will have a less inclusive experience. Most deaf students in the public school setting receive core instruction in an all-day class comprised exclusively of DHH students, and may be mainstreamed into the general population for electives, P.E or social activities such as lunch or breaks (Marschark, Lang, & Albertini, 2002). Students who do receive mainstreamed academic instruction generally rely on an interpreter, impairing the student's ability to communicate with the same effectiveness as hearing students. Hearing teachers are not prepared to meet the needs of non-traditional learners. In their eco-behavioral study of DHH students in middle school, Woosley, Harrison and Gardner (2004) determined that in mainstreamed classrooms, teachers spent more time on lecture activities (not an optimal learning strategy for non-hearing students) and less time giving one-on-one attention or small-group instruction to than in settings specially designed for DHH learners. General education teachers may have little or no training in special education, may be resistant to modification of their established routines and curriculum, or may simply fail to fully understand the implications of profound hearing loss, thereby failing to provide adequate support (Marschark, 2002).

The library's deaf patron

While literacy is one barrier to library use, physical access remains a significant barrier preventing a library from effectively meeting the needs of hearing impaired patrons. Many advances have been established regarding access for persons with disabilities, including the Americans With Disabilities Act and Australia's similarly intended Disability Discrimination Act. However, even with these reforms in place, hearing-impaired patrons still are found to experience greater difficulty in using a library.

In a 2000 report issued to International Federation of Library Associations and Institutions, John Day made the first point of his findings "For a number of reasons, most libraries have not considered focusing particular attention on the provision of services to persons who are deaf" (p. 1). This extends to all libraries, school libraries included. His findings, which utilized resources from the American Library Association, reported that while huge advances have been made in assistive technologies, many libraries still were not using these technologies to provide the highest levels of access possible.

In Australia, a significant amount of research has been conducted to formally evaluate the implications of full inclusion on library programs, both in school and public libraries. This research too has determined a need for improvement in access and services to disabled patrons. In Janet Murray's four year longitudinal study, completed in 1999, she concluded that among 218 public and private schools serving students with special needs, only 15 schools (3.8%) had funding allocated specifically for assistive services, that 12.5% of school libraries had no materials in alternative formats available, and that while 61% of respondents believed their school libraries were accessible to disabled students, only 36 libraries actually did anything to improve access during the course of the study (Murray, 2002, pg. 311).

Solutions

However problematic library use for DHH patrons has been historically, it should be recognized that this is not a permanent situation. Much research indicates that the school library is, in fact, a prime resource for supporting these students, both in terms of literacy as well as in independent academic success. While instruction for DHH students often occurs in using traditional but less-effective teaching methods, the flexible library setting can provide opportunities to incorporate some of these “best practices” for deaf learners.

Tom Peters and Lori Bell recognize the difficulty in communicating with patrons, and their research demonstrated that this barrier may be a key factor in determining why hearing impaired patrons do not use the library facilities (Bell & Peters, 2006). They suggested that the use of free, widely available technologies, such as instant messaging or chat capabilities, can significantly increase the levels of access for hearing-impaired patrons. This technology allows opportunities for DHH users to communicate directly with library staff in ways that are not only easy to use and well known, but are also typically free of negative perceptions.

Janet Murray’s studies of both primary and secondary public schools in Melbourne and Sydney Australia found that the school library tended to be a place where disabled students not only found support and assistance in academics, but also where self-esteem and self-confidence were developed and peer connections established (Murray, 2000). Case studies from this report, titled “How Librarians can Contribute to the Personal Growth of Students with Disabilities,” showed use of library facilities (typically through adaptive technology) lead to improvements in academic performance, increased motivation, and increased perception that they are more capable. In her conclusions from an additional study, “Training School Libraries to Cater for Diversity” (2000), Murray discussed a need for increased training (she found professional development was in fact decreasing) in all areas of library service, addressing the 57% of library staff who responded that they “were totally unaware that legislation existed which affected the services offered to students with disabilities” (p. 317). She concluded that library service is not an isolated job; it requires interpersonal communication, and that all librarians should be “sensitized” to the needs of this patron group.

Research Hypothesis

Based on the literature review, I would hypothesize that among students who regularly participated in the library program during the 2006-2007 school year, hearing impaired students will have lower mean rankings than normally hearing students in these outcomes: connection to classroom activities, perception of reading ability, and perceived library accessibility.

Methodology

Twelve hearing impaired students were selected from one self-contained Deaf and Hard of Hearing (DHH) class. Their participating teacher was Charlie Malone. These students inherently meet the criteria set in the *Definition of Terms* for “hearing impaired.” Three students who have Individualized Education Plans indicating hearing impairments but are mainstreamed with the general school population were included in the hearing-impaired subgroup as well.

One Language Arts class consisting of 21 normally hearing seventh grade students was selected. The participating teacher for this class was Jennifer Hellerud. The criterion for selecting this class was based upon the reading levels of the students and the number of students who were enrolled. All students in the class were reading slightly below to significantly below grade level (as was the case with the DHH class).

All subjects had been assigned classrooms during the 2006-2007 school year that regularly visited the library and utilized the “established program” as set in the *Definition of Terms*. They completed the questionnaire at the beginning of the 2007-2008 school year. The participating classroom teachers and the librarian administered the survey collaboratively.

Instruments

Four instruments were developed to address the research questions. To collect baseline data, I developed a questionnaire for students based on the three main goals of the Library program: supporting content area instruction, developing reading proficiency, and teaching information literacy skills. Other instruments, including questions for focus groups and interviews as well as observation tools, were developed based on these initial findings as well as my review of the literature.

Procedure

Participants were asked to complete a questionnaire comprised of 15 statements, to which students responded using an ordinal scale. Values were assigned as follows:

- 1= Strongly Disagree
- 2= Disagree
- 3= Agree
- 4= Strongly Agree

The questionnaire was administered to each group separately. The DHH students came to the library when completing the questionnaire. However, due to scheduling constraints, the normally hearing group of students was surveyed in their classroom. While I gave the purpose, directions, and talked the students through the

survey in both cases, Charlie Malone, participating classroom teacher, served as interpreter for the DHH students for all parts of this research process.

For each individual student, responses to each of the questions were averaged, and the responses for each area were also averaged, determining an overall rating for each student in that area. Also, averages were calculated for each question separately, allowing for a summary of all student responses for that specific question. These numbers were used for statistical comparisons.

Data Analysis

The research questions are as follows:

1. Among students who regularly participated in an established library program during the 2006-07 school year, what significant differences exist between normally hearing students and students who are hearing-impaired relative to: library connection to classroom activities, student perception of reading ability, and student perception of Library accessibility ?
2. What factors account for the identified differences?
3. What interventions on the part of the LMT can be made to provide a more equitable learning experience for these groups?

Corresponding Null Hypotheses for questions 1-2 are as follows:

1. There are no significant differences among normally hearing students, and DHH students in these outcomes: connection to classroom activities, perception of reading ability, and perceived library accessibility.
STATISTICAL ANALYSIS: Mann Whitney U test, individually for each of the three outcomes.
2. Questions Two and Three employed a Qualitative research method; triangulation will be achieved by incorporating three independent sources of information: focus groups, individual interviews, and evaluative observations.
 - After the administration and analysis of the questionnaire, each class (Hearing and Hearing Impaired) will be asked to come to the library to participate in a focus group. Questions for this activity will be developed based on responses and data collected during the baseline survey. In order to encourage casual, open participation and avoid any affective interference, the information was documented in a typical classroom manner, using an overhead projector and transparency. Responses will be uniformly contributed to the collective group.
 - To gain an in-depth perspective and follow up on any remaining issues, the participating classroom teachers were interviewed separately after the focus group. As experts in education and professionals with experience in

- using the specific library program that is being evaluated, they will be asked to share their conclusions and insights based the research findings.
- To determine specific interventions that are effective, teachers visiting the library over a one-week period will be asked to observe and evaluate specific elements using a rubric derived from my review of the literature.

Qualitative Analysis:

** DHH students will be referred to as group A; normally hearing students will be referred to as group B.*

Area one: Connection to the content areas

$N_A = 14; N_B = 21$
Overall student averages for area one:
 $M_A = 2.76$
 $M_B = 2.59$

Questions included in area one	M_A	M_B
Visiting the Library can help me get better grades in my History, Science and English classes.	3.42	3.18
In 6th grade, I checked out books and used them for class assignments.	2.23	2.8
I come to After School Study Hall and have Ms. Ghareeb help with homework.	2.33	1.74
I see connections between the things Ms. Ghareeb teaches us and what my teachers work on in Science, history and English Class.	2.78	2.92
If I get stuck, I think about what we learned in the Library when taking tests or doing assignments.	2.56	2.59

Statistical analysis revealed there is no significant difference between the means of the DHH group and the normally hearing group ($p=. 564$; fail to reject the null hypothesis). Both groups reported that they see a connection between the Library and their classes, with mean scores approaching 3, or the “agree” level. At first glance, it seems that the DHH students reported that they see more of a connection,

When individual questions are considered, both groups of students reported the highest levels of agreement when asked if using the Library can help them get better grades in their content area classes ($M_A=3.42; M_B=3.18$). The DHH students reported lowest levels of agreement when asked about books used for class assignments, with their mean response approaching “disagree” ($M=2.23$). The normally hearing students indicated their lowest response when asked if

they use After School Study Hall for homework assistance, with their average response being 1.74 or “disagree.”

Area Two: Perception of reading ability

$N_A = 14$; $N_B = 21$

Overall student averages for area two:

$M_A = 3.3$

$M_B = 2.5$

Questions included in area two	M_A	M_B
I am a good reader	3.46	2.93
I can read fiction books (like chapter books) and understand what is happening.	3.07	3.05
I can read non-fiction books (like science or history books) and understand what is happening.	3.33	2.78
I am a better reader now that I was in 6th grade (or previous school year).	3.27	3.29
I enjoy checking out library books for fun and reading them.	3.57	2.9

Statistical analysis in this area revealed that there is no difference in means from the DHH group and the normally hearing group ($p=.06$; fail to reject the null hypothesis). Both groups reported that they believe themselves to have proficient reading skills in general, as the overall means for both groups approached or exceeded the “agree” level. However, this area contains the greatest discrepancy in the actual means, with the DHH students reporting their reading ability almost a point higher in agreement than the normally hearing students.

In terms of specific areas of reading ability, the DHH group reported that they were better readers of non-fiction ($M= 3.33$) than of fiction ($M= 3.07$). Conversely, the normally hearing group indicated they were better readers of fiction ($M= 3.05$) than non-fiction ($M= 2.78$). Both groups also indicated that they feel they were better readers now than they were in sixth grade ($M_A= 3.27$; $M_B= 3.29$).

Area Three: Independent library use

$N_A= 14$; $N_B= 21$

Overall averages for area three:

$M_A= 2.89$

$M_B= 2.8$

Questions included in area one	M_A	M_B
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I know how our Library is organized.	3.67	2.75
I could find a book without asking Ms. Ghareeb for help.	2.83	2.2
I know all of the times when the Library is open for students to use.	2.28	3.08
I know all the different kinds of books and materials that are there in case I need them.	2.56	2.93
I feel comfortable coming to the library on my own, without my class.	2.9	2.26

Statistical analysis in this area revealed that there is no difference in means form the DHH group and the normally hearing group ($p=.760$; fail to reject the null hypothesis). There was more variance within each group than between the two. Both the DHH group and the normally hearing group reported that they were able to use the library independently, with a mean score approaching 3, or the “agree” level.

The DHH students indicated that they knew very well how the library was organized, ($M= 3.67$, or approaching the “strongly agree” level) and they agreed they could find a book without help ($M= 2.83$). They were less sure about what all the available resources were ($M= 2.56$). The issue of access DHH students were least sure about was a surprising one: the average level of agreement was only 2.28 (approaching the “disagree” level) when asked about times the library was open for student to use. This may be explained by the fact that DHH students are provided transportation though separate bussing, and therefore flexible access before and after school may not be an option.

Responses from the normally hearing students showed a slightly different picture. They were less sure about how the library was organized than their DHH counterparts ($M_B= 2.75$), and they reported the lowest level of agreement when asked if they could find a book without help ($M_B= 2.2$). However, this group indicated their highest level of agreement when asked if they were comfortable using the library on their own ($M= 3.26$).

Conclusions

Contrary to my predictions, there seems to be no significant difference in the way DHH students are experiencing the library when compared to normally hearing students; in fact, responses in both areas indicates a strong, accessible, and well-supported Library program. According to the literature, most DHH students have difficulty reading, but these students seem to indicate they feel they are good readers. The current literature also indicates that most library settings are not adequately meeting the needs of this particular group. However when tested, the results show that Marshall’s Library poses few obstacles to access for DHH students. These two groups

of students, while having very different educational experience, are experiencing Marshall's Library program in an equitable and positive way.

Based on this baseline data, a qualitative mixed-methods approach was implemented to determine what factors account for these findings, incorporating further statistical analysis, focus groups, interviews, and observations.

Correlation Analysis

Further statistical analysis of the baseline data revealed interesting correlations. Analysis began with variables considered to be fundamental to education: reading ability.

Among the normally hearing group, significant correlations were seen between all three areas of inquiry. The strongest correlation was found between the student confidence in reading and their ability to access the library: 62% of their belief that the library connects to their learning is related to their belief that they are a capable reader. Similar correlations were found between the other areas of inters; reported reading ability and class connections ($r=.567$; $p=.007$) as well as between access and connections ($r=.581$; $p=.006$) The normally hearing students definitely see the library as an extension of their literacy education, whether their experience is positive or negative.

Correlations

		ConnectAV	ReadAV	AccessAV
ConnectAV	Pearson Correlation	1	.567**	.790**
	Sig. (2-tailed)		.007	.000
	N	21	21	21
ReadAV	Pearson Correlation	.567**	1	.581**
	Sig. (2-tailed)	.007		.006
	N	21	21	21
AccessAV	Pearson Correlation	.790**	.581**	1
	Sig. (2-tailed)	.000	.006	
	N	21	21	21

When these same factors are analyzed for the DHH group, none of these correlations are present at all. There seems to be no relationship between how the library connects to their class work, how the students rate themselves as readers, or how able they are to use the library independently. These findings suggest that for this group, the library represents an independent educational environment, one that is not associated with any negative notions of their academic ability or struggles in content area studies. For these students, coming to the Library is a separate experience from other academic settings that typically provide sources of failure and frustration.

Focus groups

The use of focus groups was designed to allow students an additional opportunity to share their perceptions and experiences about the library, but this time in

a guided, directed way. By analyzing the baseline data, I was able to determine the main topics that warranted further investigation. These resulting questions were developed:

- *Tell me about what how you use the library to help you get better grades in your classes?*
- *What makes someone a good reader?*
- *What's the difference between checking out books for school and checking out books for fun?*
- *What's the difference between reading non-fiction books and fiction books?*
- *How do you find a book on your own? What can be confusing about finding books?*

While there were no significant differences in the two groups' ratings, the normally hearing group could articulate fewer ideas about how the library affects their class grades. They told me the library had books for studying, that I could help them learn, and named several content areas. The DHH students gave more detailed information, indicating that through listening to stories, practicing reading, practicing lip reading together with signing, attending the after school tutoring program and practicing recognizing print/ letters they would improve in their classes. These answers seem to be more specifically applicable to improving academic performance than the responses of the normally hearing group.

When asked about what makes a good reader, both groups of students shared similar responses. Whereas one might expect DHH students to view reading ability differently, both groups reported that good readers utilize many strategies, such as making predictions, questioning, re-reading, visualizing, and using decoding strategies. Neither groups mentioned grades or test scores, or placement in a particular class as indicators of good reading ability.

The next area I investigated combined questions about checking out fiction and non-fiction, and checking out books for fun versus books for school. Reflective of their previous scores, the DHH group indicated that non-fiction books were both easier to read and more fun to check out. They cited the length of the books, abundance of pictures, and lack of pressure to finish the entire book. While the normally hearing students gave general responses as to what makes a book difficult or less fun to read (boring, stupid, not interesting), the DHH students shared that books with longer sentences, fewer pictures, or topics that required a lot of context could be difficult. Topic areas that students checked out for fun were similar among both groups, including sports, magazines, animals, cookbooks, comics, and "true" scary stories. Even though the normally hearing group indicated they were better readers of fiction when surveyed, they did not mention any fiction genres when asked what they checked out for fun.

The final area covered in our focus groups looked at how students find things in the library, as both groups felt confident that they knew how the library was organized, and they could find things on their own. Both groups utilized similar strategies for accessing the library, immediately identifying the on-line library catalog as a good way

to find things. Both groups also told me that points of access, such as the presence of signs, special displays, and sections by genre helped them find what they were looking for. The DHH students mentioned several times using the “number on the book” to find materials, and after some deeper questioning, they were able to explain to me that the call number was connected to the topic, and that they could use that number to locate what they were looking for, either by finding similar call numbers, or by finding the number in the catalog and following signs to that section.

Teacher interviews

In addition to using focus groups with the students, I interviewed each participating teacher separately after they had heard their class’s responses. My intention was to incorporate their conclusions or insights about the students’ responses.

Ms. Hellerud, who teaches the normally hearing students, pointed out to me that while many of her students reported that they were good readers, she believed that few truly felt they were. “My kids know they’re poor readers,” she said, pointing out that all the other kids on campus know it too.

She explained that there was a social stigma attached to being in this particular level class, and that among the general school population her students had to feel isolated and embarrassed. This was clearly illustrated through an anecdote she relayed: a boy in her class was ignoring his other schoolwork to read a novel he had checked out. When she mentioned to him that that must be a good book, he firmly denied enjoying it, even though he had been obviously engaged for a long period of time. Her students do not tend to associate school or reading with positive feelings or success.

However, her students love coming to the library, evident in the fact that they constantly asked when the next visit would be. In Ms. Hellerud’s opinion, this library does not mirror the rest of students’ academic experience; our library is fun, it caters to their interests, is low-risk, and incorporates elements of social time and a flexible atmosphere. The extra-curricular activities that are held in the Library, like clubs, book give-aways and reading activities, make the library attractive and add an important “cool factor” for these emerging readers.

Mr. Malone, the teacher for the DHH class, also believed his students enjoyed their library visits. He told me that the level of inclusion his students have experienced under the current library program is not typical; in his experience DHH students generally are not included in literacy activities, such as being reading to or regularly checking out their own library books.

As to their perceptions of school and their reading abilities, he does not believe many of his students feel isolated or embarrassed about their low skill level. Resulting in the lack of correlations previously seen. For DHH kids, “reading in English is a second language,” he said, “there’s no expectation that they should automatically be able to do it.” He also pointed out that they might be less self-conscious about their ability because they cannot hear comments other kids make. In the self-contained DHH classes, the small size allows Mr. Malone to focus on maintaining a positive environment for all his students.

Many of the same elements Ms. Hellerud identified as effective for her students also were effective for Mr. Malone's class. He felt the interaction with others and the flexible, inclusive treatment of his students was factors in why they too enjoyed visiting the library. He did acknowledge that reading can be difficult for DHH students, especially longer fiction pieces, but pointed out that our library had a range of more accessible materials for his students to use.

Observations: Universal Design

A final component of my research focused on defining the specific elements that contributed to the Library program's success. As was previously established, two very separate groups of learners have reported statistically similar, positive experiences with Marshall's Library Program, involving little or no individual modifications. Both groups of learners have identified similar strategies or factors that contribute to their success interacting with the Library's resources. This highly accessible model seems to demonstrate elements of Universal Design, as discussed in the Literature Review.

To further test this idea, observations were conducted to identify what specific elements of Universal Design were present. Using a modified version of the "Principles of Universal Design" established by Scott, McGuire and Shaw as a rubric, I asked all visiting teachers for one week to evaluate the Library program as their students were using it. The principles to be observed are as follows:

- Equitable use
- Flexibility in use
- Simple and intuitive
- Perceptible information
- Tolerance or error
- Low physical effort
- Size and space for approach and use
- Community of learners
- Instructional climate.

Seven teachers participated in the observation portion. These teachers indicated most, if not all, of the principles are identifiable in our library program. They gave examples of how these principles were applied; the range of reading materials, the attitude of the LMT, and the library climate were all cited repeatedly as elements contributing to student success. They indicated elements of the library design, such as themed sections, and signage, allowed students to find things quickly and easily. The searching methods I demonstrated using the online catalog also supported effective access. Teachers observed that while I was working with students I was clear about directions, I made the lesson interesting and accessible using humor and simple vocabulary, but that I remained flexible in dealing with individual students.

Recommendations

While no two school environments are exactly alike. Specific elements of Marshall's Library Program have been identified as contributing to its success with two very different groups of learners; these factors can be generalized to a variety of library settings.

The first area of recommendations has to do with the assumptions and perceptions of the Library Media Teacher. LMTs cannot effectively pre-determine which populations will or will not benefit from using the Library. As clearly demonstrated through this research, students who typically have limited success with literacy still find great value interacting with their school library. Contrary to expectations, these students indicated that they feel the library positively affects their academic studies, and that they are able to use the resources well. In fact, one of these groups did not demonstrate any connections between prior academic success and library expectations. The Library provides an important social and personal aspect for these students, allowing that to experience success, inclusion and enjoyment through reading.

Another important factor to providing an equitable experience to all patrons is the implications of Universal Design. All school libraries serve some sort of mixed student population, and one goal of an effective LMT is to address the resulting range of needs. Whether it be in collaborations with classroom teachers, developing a varied collection, or creating space and access points for users to navigate the library effectively, utilizing the principles of Universal Design is an effective method of developing or improving a Library program that will remain flexible in meeting student's needs and will provide greatest access to any type of learner that may walk through its doors.

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Appendices:

Instrument (Student Questionnaire)

Instrument (Universal Design Observation)

Instrument (Student Questionnaire)

Read each statement about Marshall's Library program. Please circle the response that show how much you agree with the statement, or disagree with the statement

Application to Content Area

1. Visiting the Library can help me get better grades in my History, Science and English classes.

Strongly Disagree Agree Don't know Agree Strongly Agree

2. In 6th grade, I checked out books and used them for class assignments.

Strongly Disagree Agree Don't know Agree Strongly Agree

3. I come to After School Study Hall and have Ms. Ghareeb help with homework.

Strongly Disagree Agree Don't know Agree Strongly Agree

4. I see connections between the things Ms. Ghareeb teaches us and what my teachers work on in Science, history and English Class.

Strongly Disagree Agree Don't know Agree Strongly Agree

5. If I get stuck, I think about what we learned in the Library when taking tests or doing assignments.

Strongly Disagree Agree Don't know Agree Strongly Agree

Reading Ability

1. I am a good reader.

Strongly Disagree Agree Don't know Agree Strongly Agree

2. I can read fiction books (like chapter books) and understand what is happening.

Strongly Disagree Agree Don't know Agree Strongly Agree

3. I can read non-fiction books (like science or history books) and understand what is happening.

Strongly Disagree Agree Don't know Agree Strongly Agree

4. I am a better reader now that I was in 6th grade.

Strongly Disagree Agree Don't know Agree Strongly Agree

5. I enjoy checking out library books for fun and reading them.

Strongly Disagree Agree Don't know Agree Strongly Agree

Ability to Use the Library

1. I know how our Library is organized.

Strongly Disagree Agree Don't know Agree Strongly Agree

2. I could find a book without asking Ms. Ghareeb for help.

Strongly Disagree Agree Don't know Agree Strongly Agree

3. I know all of the times when the Library is open for students to use.

Strongly Disagree Agree Don't know Agree Strongly Agree

4. I know all the different kinds of books and materials that are there in case I need them.

Strongly Disagree Agree Don't know Agree Strongly Agree

5. I feel comfortable coming to the library on my own, without my class.

Strongly Disagree Agree Don't know Agree Strongly Agree

Please write in any comments:

What are your thoughts about using Marshall's Library?

Instrument (Universal Design Observation)

Principle	Description	Describes our Library Program?	Examples seen during your visit?
Equitable use	Environment/ activities are designed to be accessible and useful to students with a wide range of needs.	Yes Don't know No	
Flexibility in use	Environment/ activities are designed to accommodate a wide range of abilities, Choices	Yes Don't know No	
Simple and intuitive	Environment/ activities are designed to be simple, easy to understand and predictable, regardless of language skills. Avoids unnecessary complexity	Yes Don't know No	
Perceptible information	Information (books, web pages, other materials) is available in a variety of formats, and are accessible by students with a range of needs and abilities.	Yes Don't know No	
Tolerance for error	Environment/ activities accommodate variation in pacing and level of prior experience.	Yes Don't know No	
Low physical effort	Environment/ activities are designed to minimize extra physical effort, allowing maximum attention to task.	Yes Don't know No	
Size and space for approach and use	Environment/ activities are designed with attention to appropriate space and size to be useful (examples: reach,	Yes Don't know No	

	openness, visual aides, access)		
Community of learners	Environment / activities promote interaction and communication among students and teachers.	Yes Don't know No	
Instructional climate	Environment/ activities are designed to be welcoming and inviting. High expectations are held for all participants.	Yes Don't know No	

