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Articulation of Deaf and Hearing Spaces Using

Deaf Space Design Guidelines:

A Community Based Participatory Research with the Albuquerque Sign
Language Academy

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THESIS

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To my Deaf family and friends

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Articulation of Deaf and Hearing Spaces Using Deaf Space Design Guidelines:

A Community Based Participatory Research with the Albuquerque Sign Language Academy

By

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B.U.S, University of New Mexico, 2009

M.C.R.P., University of New Mexico, 2014

Abstract

The purpose of this project is to conduct Community Based Participatory Research to explore how

articulation between deaf, hard of hearing and hearing students at the Albuquerque Sign Language

Academy can be enhanced using Deaf Space Design Guidelines in the school facility. The ASLA is a

Bilingual school with an ASL and spoken English curriculum. Unlike traditional schools for the deaf, the

ASLA enrolls deaf, hard of hearing and hearing children in a multicultural environment, which includes

Deaf Culture among the cultural identities. Five qualitative research methods were used with

participation from mostly hearing ASLA staff, faculty and parents. The ASLA community comprehended

the DSDG and made decisions on areas to incorporate them into the facility.

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Introduction

Spaces are creations formed out of our desires to feel comfort, safety and inspiration.

Simultaneously they must be effective and utilitarian. We create space to reflect who we are and what

we believe is important. Humans perceive what is expected of them as they encounter arrangements of

furniture, colors and objects in a room. They set a tone for how we expect others to act and react to the

space itself and the people in it. Spaces are complicated, they are alive and they foster human

connectivity within their confines. Above all else spaces are ideas, they are a reflection of our mind's

understanding of what and how this space will reflect ourselves and our values.

Considerations about spatial practices and intersections between deaf, hard of hearing and

hearing children and adults within a Deaf Space are the focus of this research. Space will be looked at

through a Deaf Cultural[1] lens: connecting identity, spatial needs and visu-centric design into a cohesive

analysis. To achieve this outcome, the research examines whether successful articulation of Deaf Space

can be enhanced between deaf, hard of hearing and hearing individuals using the Deaf Space Design

Guidelines (DSDG) developed at Gallaudet University[2].

A Community Based Participatory Research study was conducted with stakeholders of the

Albuquerque Sign Language Academy (ASLA), a bicultural bilingual school for deaf, hard of hearing and

hearing students in Albuquerque, New Mexico. The bilingual instruction at the ASLA supports students

learning American Sign Language and spoken English simultaneously. The ASLA building itself is a

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[1] Deaf Culture refers to the ethnic identity of some deaf , hard of hearing and associated hearing people. Deaf and Hard of Hearing is capitalized when referred to in this context, lower case when referring to the auditory experiences.
[2] Gallaudet University is the only liberal arts university in the world focused on educating Deaf and Hard of Hearing students. It is also considered to be a center point for the Deaf Cultural movement in the United States.

renovated office building, redesigned into an educational facility. It is a programmed educational space, but it lacks some important design features that could enhance the functionality of the space for ASL and visual centered interactions. The desire of the school is to create a multi-cultural space, which includes Deaf Culture, with full enrollment of deaf, hard of hearing and hearing students.

Deaf people are constantly creating spaces across hearing environments, but rarely do hearing people create space across Deaf environments. Deaf people adapt to a landscape that places high importance on the expectation that a person can hear sounds and communicate verbally at all times. They manipulate their environment to suit their distinct visually centered needs. Historically deaf or visually centered spaces tended to occur at residential schools for the deaf or in Deaf homes. These spaces were often segregated from an overwhelmingly audiologically centered society in order to maintain control over their visual needs as well as personal connections cultivated with each other.

Maintaining Deaf Spaces with hearing people present, can be a challenge for deaf and hard of hearing individuals. The empowerment of a Deaf Space resides in whether it is centered on Deaf Cultural values and the unique visual needs of deaf and hard of hearing people. Issues of dominance related to audism[3], both institutional and personal are pervasive even on all deaf campuses when hearing people are present. One of the goals of this research therefore, is to explore how a space with deaf, hard of hearing and hearing people in it, could become Deaf Space centered on Deaf Cultural values even with many hearing people in the space. Trusting that the physical environment is reflective of the values of the people in the space, the DSDG could be a tool to enhance connections and articulation between all persons.

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[3] Audism is defined by H. Lane, "as a system of advantage based on hearing ability." And defined by H. Bauman, as "a metaphysical orientation that links human identity with speech." From, The Metaphysics of Audism, H. Bauman 2004.

The challenge for the ASLA is just this, to keep their school Deaf centered while incorporating hearing students into the space. The buildings' physical limitations, may contribute to how the students, teachers and staff connect in their school, which is where the DSDG may help enhance connections across audiological differences. With the three distinct audiologically diverse groups functioning together in this space, it provided the right setting to explore the levels of articulation between deaf, hard of hearing and hearing individuals and explore whether the DSDG could enhance the creation of a more successful Deaf Space at the ASLA.

The ASLA diverges from the traditional Deaf educational setting, where deaf and hard of hearing children were educated separately from their hearing peers. As a result, it more accurately reflects a growing movement within Deaf Culture to diversify the categories of Deaf identity and inclusion of connected hearing people into Deaf Culture. The ASLA also represents evolving educational models for deaf education which is inclusive of hearing children into Deaf spaces instead of the other way around.

The presence of hearing people in Deaf Spaces is most common in Deaf homes. As a daughter of deaf parents, or Child of Deaf Adults (Coda) I understand intimately Deaf Culture and the experience of being hearing in a Deaf and Hard of Hearing World. ASL is my Deaf family's first language with two deaf parents and three hearing children. The lives of Codas are in between Deaf Culture and the hearing-world[4]. Their embodied experience is non-deaf, but their cultural experiences are from Deaf Culture. As a Coda, I observed the intersections of space in our home. We would situate ourselves in a circle to talk, sleep with night lights on in each room so that we could sign and used touch to communicate more often than our hearing counterparts. The cultural aspects of my life did not dissipate at the school doors. Instead we adjusted to our Hearing-World surroundings and became adept at code switching

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[4] Hearing-World refers to the hearing dominated culture that does not associate with Deaf Cultural norms, values and language.

and developing strength in multiple contexts. We were exactly the children that the ASLA as a deaf and hearing articulated space could accommodate.

We were born into Deaf Culture and learned about the Hearing-World outside of our homes. My Deaf parents on the other hand, were born and raised in hearing homes and gained their Deaf Cultural identities at the New Mexico School for the Deaf (NMSD) in Santa Fe, New Mexico. They were residential students, raised from a young age separated from their non-deaf families. At the school, they learned new cultural norms, a new language and a community that they remained connected to their entire lives. Every student at the NMSD was, and continues to be, deaf or hard of hearing, hearing students were not enrolled into the NMSD. The school became the deaf students' sanctuary from a Hearing-World that often treated them as unintelligent, mentally ill or simply ignored them. The time spent at deaf schools sometimes left residents with mixed emotions. Students gratefulness for gaining a greater understanding of themselves and acquiring confidence in their abilities, yet they also experienced grief for the time spent away from families of origin. Their Deaf identities were cemented at NMSD where they belonged to a larger community of people like them.

Formulations of Deaf Space in our home were modeled from the Deaf Spaces at the NMSD. The definition of Deaf Space is *the spatial modifications that Deaf and Hard of Hearing construct to accommodate their surroundings for their special ways of being* (HBBM Architecture, 2008; Milam-Porteous, 2008). The need for visual contact through the space is of primary importance. Arranging furniture, regulating lights and adjusting proximity to each person are essential enhancements to visual language communication. Our spaces were created to merge hearing and Deaf, into a cohesive unit revolving around our visual language. In our homes Deaf Spaces became the refuge, and were entirely Deaf centered with hearing people accommodating our Deaf needs.

Gallaudet University in Washington, D.C. is such a refuge for Deaf and Hard of Hearing people. Recently a group of Deaf, Hard of Hearing and hearing community members from Gallaudet University, codified the modifications that visually centered communicators used into a working document called the Deaf Space Design Guidelines (DSDG). The DSDG are based on five basic concepts that deaf and hard of hearing people often rely on to create effective spaces. They are light and color, sensory reach, proximity and mobility, space and proxemics and acoustics. Each of the concepts is variable and often compliments and overlaps throughout the building. Ultimately, the core of the DSDG is to enhance and generate connections between people who are interacting through a visual language in the space. The highest measurement of success of a DSDG developed space is a high level of connectivity betwen the people in the space.

The following research study will provide background and supporting literature on American Sign Language, Deaf Culture, Deaf Space and the Albuquerque Sign Language Academy. A methodology for the CPBR process, findings and recommendations to the ASLA on how to best implement the DSDG decisions into their school facility will follow.

Background

American Sign Language

The evolution of Deaf Culture is thoroughly linked with the development of American Sign Language (ASL) as the primary language for many Deaf and Hard of Hearing individuals.The Hearing World is aware of ASL its hand signs and strong body language accentuations, but is not familiar with the history of the language and the people connected to it. To teach ASL without an understanding of Deaf Culture is akin to teaching Spanish without referring to the myriad of cultures that use that language. An extensive overview of ASL and its subsequent implications on Deaf Culture is beyond the scope of this research, but a concise history is important to place Deaf Culture into context.

Prior to the 18th century, many deaf and hard of hearing people were labeled with slow intelligences since they often could not speak verbally and communicated through gestures (Padden & Humphries, 1988, 2005). Schools for the *deaf and dumb*[5] focused on teaching children to speak and discouraging hand gestures which were used before a formal signed language was accessible. Trying to discover ways to communicate, deaf children in the institutions began to construct their own series of gestures and hand signs representing words so they could communicate. These instinctually developed gestures are an example of the need for deaf and hard of hearing people to rely on a visual language to connect and communicate (Padden & Humphries, 2005; Stewart & Akamatsu, 1988).

The first school for the deaf was established in 1817 (Padden & Humphries, 2005; Wilcox & Wilcox, 1997). It was the first school to use an all signing mode of communication for its students (H. L. Lane, 1992; Padden & Humphries, 1988; Stewart & Akamatsu, 1988; Wilcox & Wilcox, 1997). The school was founded by Laurent Clerc, a Deaf French man, and Edward Minor Gallaudet, an American hearing

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[5] Common language prior to mid 1960. The word "dumb" was used prior to the word "mute" to mean the same.

man. Edward Gallaudet, after working with deaf children in America, realized that they needed a codified signed language to learn to read and write (1997). He went in search of it in England, but was unsuccessful. He met Laurent Clerc, in France at the Instuit Nationale de Sordes Muets a Paris (National Institute of Deaf and Mute of Paris) the world's first free deaf school[6]. Gallaudet persuaded Clerc to join him in America. Since both men were educated in French Sign Language (FSL), they adapted it into a distinct version which eventually became ASL. They used to teach the deaf and hard of hearing students in their schools. This highlights an often misunderstood characteristic of ASL, which is that it is a signed version of spoken English. This is incorrect. ASL is indigenous to the United States and is its own language (1997). Signed languages across the world tend to reflect the Deaf community's territorial regions rather than the spoken languages used in the countries they are from.

The school Clerc and Gallaudet founded for deaf and hard of hearing students, was the first U.S. Deaf School, located in Connecticut. Gallaudet's son eventually founded Gallaudet University in Washington, D.C., a liberal arts college dedicated to educating Deaf students. Both schools became the focal point for the Deaf community. At the schools, deaf students made deep connections with each other and began to develop a culture based on their shared experiences, values and beliefs (Padden & Humphries, 1988, 2005). Free from much of the discrimination they experienced in the outside Hearing World, deaf people developed a stronger sense of identity as Deaf individuals and began a view of deafness, not as a disability, but a cultural way of being. Deaf Schools became not only the primary means of educating the deaf and hard of hearing, it became a center point of transmitting Deaf cultural values across generations (Padden & Humphries, 1988).

In the late 1800s a movement towards "oralism" gained support with many Deaf educators (Baker & Cokely, 1980; Padden & Humphries, 1988, 2005; Stewart & Akamatsu, 1988). Oralism is an

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[6] The *Institute Nationale de Sordes-Muets a Paris* is currently named *Institute Nationale de Junnes Sordes de Paris*.

educational model for deaf education that advocated for deaf and hard of hearing people learning to speak instead of using signed languages for communication. The theory behind oralism is that Deaf people would learn to speak and could blend into a hearing society if they were adept at speaking and pronouncing words. This type of teaching was concerned with how to make deaf people fit into a Hearing World by training them to mimic speaking rather than accepting their unique ways of being.

Oralism had at its basis a disdain for deafness. One of the main proponents of this movement was Alexander Graham Bell, believing that deafness was a scourge, he thought the best way to discourage deaf people from continuing to use their signed languages was to insist that they learn to speak (Baker & Cokely, 1980; Padden & Humphries, 1988). For many deaf individuals this was a horrifying experience, since speaking is often dependent on hearing the sounds and mimicking voices, they simply could not do it.

Testimony collected by Padden and Humphries recalls times when the students at the all oralism schools would hide in the back and talk to each other in ASL or a form of signing that they constructed themselves (Carol Padden and Tom Humphries, 1980.; Padden & Humphries, 1988). Oralism as an educational practice continues to exist, though mostly it has been hybridized in deaf education to include ASL as well as spoken language.

In the 1960s, ASL was gaining acceptance as a legitimate language with its own syntax, grammar and style, rather than a series of gestures and body language. The first scholar to document American Sign Language as structured language with its own grammar and syntax was William Stokoe. His book, *Sign Language Structure, An Outline of the Visual Communication System for the Deaf*, was the first look at ASL with the perspective of it as a living, breathing language, in codified form. It was a revolutionary act (Stokoe, 1960). From this beginning, ASL became the norm as the language for many deaf and hard

of hearing individuals. Deaf schools began to build their curriculum around it and public hearing schools offered it as a language elective.

ASL is accepted as the primary trait that most educated Deaf share with each other. Deaf Culture is very proud and protective of their language. Today there are ASL classes for the non-deaf, and it is the 4th most used language in the U.S. ASL is the center of most Deaf activities.

Evolution of Deaf Culture in the United States

There are two distinct ways of characterizing Deaf people in American society, the *pathological and/ or clinical* view and the *cultural* view (Baker and Cokely, 1980, Wilcox, 1996, Stuart and Akamatsu, 1988). The *pathological* view is one that sees deafness as something that is outside the "norm" and defines deafness as a deficit of function. *Cultural Deafness* defines the Deaf community as a group that has a distinguishing set of cultural traits unique to that group such as language, shared experience and common identity (1980). As such lack of hearing is not considered a deficit to most in Deaf Culture (Wilcox, S., 1996). The *cultural* view of deafness, according to Wilcox, does not view Deaf people as "impaired hearing people as much as one would not view Hispanics or Blacks as 'impaired' Anglos, instead they are people with a different but equally valid view of the world" (Wilcox, S. 1996: 109). This research adopts the *cultural* view of deafness, understanding it to be a living culture subject to change and categories of inclusiveness or non-inclusiveness.

Deaf Culture further subdivides its' deaf members into three subgroups: 1) Pre- lingual deaf : those born deaf or became deaf before spoken language was developed, 2) Post- lingual deaf and 3) Hard-of-hearing (Stewart and Akamatsu, 1988). In addition, over 90% of deaf couples have children who are hearing (1988). These children are integrated into Deaf Culture even though they are non-Deaf. Deaf Culture also includes siblings, parents, friends and hearing spouses as part of the larger Deaf Community (1988).

The most important definition of Deaf Culture comes from Padden and Humphries in their book *Deaf In America: Voices from a Culture* (Padden & Humphries, 1988). They claim that deafness does not merely create camaraderie with others who are also deaf but is "historically created and actively transmitted across generations" of Deaf people. Most often the transmission of culture is done between deaf children and deaf adults, through experiences at deaf schools and by peer interaction (1988). The exception may be children of Deaf parents, who are often immersed in Deaf Culture from a young age and frequently act as brokers of Deaf Culture to the larger Hearing World and other hearing members of deaf culture that are not as integrated into the culture's methods.

Historically a deaf person's first encounter of peer interaction often came from their experience at residential schools for the deaf, where much of Deaf Culture has its origins. In residential schools deaf children live separated from their parents and siblings and are immersed in situations where teachers and other school workers become their caregivers. They essentially learn and adopt the culture of the school. The years spent at the school are crucial in the lives of many deaf people, and that experience is usually at the center of their worldviews (Padden and Humphries, 1988). At the schools the deaf students developed what might be considered alternate families, comprised of their peers, teachers and other school administrators.

Many deaf and hard of hearing individuals that lived in the residential Deaf Schools have mixed feelings about their time. They value the experiences with deaf peers, yet the times of separation from parents and siblings was often traumatic and left them feeling isolated from their families (Nikolaraizi, 2006; Padden & Humphries, 1988, 2005). Other deaf residential school alum recall that administration and teachers were mostly hearing and they ultimately felt they were subjugated to hearing decision makers (2005). Deaf schools did employ deaf and hard of hearing teachers and staff, however administration and superintendents in positions of power were primarily to be hearing. This dynamic is

crucial to understanding the struggle of modern Deaf people demanding decision making control over their educational, professional and social institutions.

Indeed much of modern Deaf Cultural identity can be traced to student movements from Gallaudet University in the late 1980s, which were directly linked to the historic lack of Deaf decision makers in fully deaf institutions. For the two centuries of Gallaudet's existence the student populations were almost entirely deaf or hard of hearing, but the administration and decision makers of the university tended to be hearing (Christiansen & Barnartt, 1995a). In March of 1988, the opportunity arose for the Board of Trustees of the university to appoint the first Deaf president. The board chose instead a hearing candidate and the Gallaudet students, staff and faculty protested and demanded a Deaf president be appointed (1995). The movement was called "Deaf President Now!" (DPN) which was the chant from the student protestors. Eventually the board capitulated and I. King Jordan was appointed the first Deaf President of Gallaudet University in 1988(Christiansen & Barnartt, 1995).

The movement was a culmination of frustration from more than a century of hearing individual control over deaf people and deaf institutions. The Gallaudet protests were more than a demand to gain a Deaf president, it was a demand from the most prestigious Deaf institution in the United States for self determination and power over their own lives and institutions (Christiansen & Barnartt, 1995). The days of deaf and hard of hearing individuals being left out of the decision making positions in deaf institutions was slowing changing and has continued shift throughout the U.S. ever since.

Concurrent to the Gallaudet DPN protests, Deaf education in the United States shifted dramatically. Several acts passed by U.S. Congress ensured that people with disabilities would have access to public education (http://nichcy.org/laws). They include the Individuals with Disabilities Education Act (IDEA), Americans with Disabilities Act (ADA), Section 504 of the Rehabilitation Act and the Assistive Technology Act (http://nichcy.org/laws). Each of the acts requires that school districts

provide access to a quality education in various forms to people with disabilities. Deaf schools were no longer the only choice for education of deaf and hard of hearing children.

The instruction models for deaf education in public schools in the 1980s included *mainstreaming* and *inclusion* models (Wauters & Knoors, 2007). Many of these educational models remain in public schools to the present. Mainstreamed students attend core curriculum classes and elective classes with hearing classmates. These deaf and hard of hearing students are often taught Signed English, a mode of signing that more closely follows the grammatical flow of spoken Engish (Wilcox & Wilcox, 1997). A signed English interpreter attends classes with the students and provides the necessary signed interpretation between student, teacher and peers. During pullout instruction, the deaf and hard of hearing students have separate classes specialized for them, with ASL or Signed English instruction and tutoring (2007). One of the criticisms for this type of instruction is that often deaf students feel isolated from their hearing peers, despite the fact that they have their core cohort of deaf and hard of hearing students that they can identify with (Garden, 2010).

The other education model is the *full inclusion* model. Deaf and hard of hearing children are fully educated in the hearing classroom with individual instruction as pullout instruction (Wauters & Knoors, 2007). This model places the deaf or hard of hearing child in the center of the classroom and organizes the classroom around their needs (Wauters & Knoors, 2007). The theory behind this model is that it will teach the deaf or hard of hearing child how to interact with the hearing world in a supportive environment (2007).

New educational models include Bilingual/Bicultural (BiBi) models of education. In the BiBi models deaf and hard of hearing children learn in a bilingual environment with ASL and spoken English as the means of communication. The key is that these models also keep a Deaf Cultural perspective at the center of the curriculum. This keeps the deaf or hard of hearing child's physical, cognitive and

emotional, spiritual needs at the forefront of the educational experience (Mayer, C. & Akamatsu, C., 1999; Desjardin, 2006; Guardino & Antia, 2012; Nikolaraizi, 2006a). Usually BiBi classrooms exclude hearing children. The Albuquerque Sign Language Academy (ASLA) uses this model, but chooses to combine the classroom with deaf, hard of hearing and hearing children.

These alterations in deaf education give families of deaf children alternatives to residential deaf schools, however critics point out that these deaf children miss out on crucial identity and self esteem raising experiences that occur at deaf schools with full deaf enrollment (Bauman, 2004; Garden, 2010; Nikolaraizi, 2006; Wauters & Knoors, 2007; Wilkens & Hehir, 2008). Many deaf people have described feeling a full sense of belonging at the deaf school because everyone was like them. A Deaf identity could be formed without the pressure to conform to a hearing ideal. The structural changes in deaf education have made connecting with other deaf people more random. Identity formations previously cultivated in deaf schools has changed from the past and Deaf persons may need to create more relationships outside of school that inform their sense of being (Garden, 2010; Nikolaraizi, 2006a; Padden & Humphries, 2005). .

Many Deaf people maintain strong ties through social networking Deaf Clubs, Deaf sport associations and Deaf school alumni associations as well as casual friendships (Padden and Humphries, 1988). These clubs and associations are where Deaf people can come together to share experiences and pride in their deafness. For many of these clubs deafness is the basis of membership. Hearing people that are part of Deaf Culture, such as Codas and other family members are sometimes the exception. However, this can cause dilemmas within the clubs and sport associations since they are some of the only places where Deaf people can gather safely and control their environment without the burdens that living in a hearing world present. For some Deaf individuals admission of anyone that is non-deaf can be an affront to the important value of an all Deaf association (1988).

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An example of audism taking over a Deaf Space is when hearing people who are so accustomed to a culture that assumes sound and voice is the norm, may begin talking to each other without signing while deaf people are present (H.-D. L. Bauman, 2004). This isolates deaf and hard of hearing people out of conversations, reduces a sense of belonging and in certain circumstances potentially undermines deaf agency to make decisions based on the fullest amount of information. This is not necessarily deliberate ignoring on the part of hearing people; nonetheless it is troublesome for many deaf or hard of hearing individuals. When there is a space that is fully Deaf, and everyone must rely on ASL to communicate, these instances of separation or isolation are reduced. It is the reason fully Deaf Clubs and associations became such an important part of Deaf Cultural transmission. Through their shared experiences of language, shared history, values and expressions of identity Deaf people have created a distinct culture that can be argued is in itself an ethnic category (Wilcox, 1994).

As with any culture, identity formation for modern Deaf and Hard of Hearing individuals has taken on a new mode of construction. While they identify with their embodied experience of deafness they are also more integrated into the hearing world than their older counterparts. Through inclusive educational experiences, advancement in assistive hearing devices and technology such as text messaging which lessens barriers of communication to those that do not use ASL, modern Deaf people are sometimes identifying as Biculturally Deaf, indicating their affiliation with both the Deaf and Hearing Worlds (Garden, 2010; Nikolaraizi, 2006). Regardless of their chosen identities, studies show that a Deaf or Biculturally Deaf identity is an important aspect of a deaf or hard of hearing person's positive self esteem (Bat-Chava, 1993; Garden, 2010; H. Lane, 2005; Nikolaraizi, 2006).

Children of Deaf Adults have more recently begun to identify themselves as Biculturally Deaf (Bishop & Hicks, S.L., 2008). Codas are the hearing children of Deaf parents immersed in the Deaf way of being from birth. Although they are hearing they often communicate that they have a "Deaf

Worldview" in which they see the world through a visual lens, understanding the values and norms of Deaf Culture and using ASL or other signed languages for communication and (Bishop & Hicks, S.L., 2008; Paul Preston, 1994). Codas are in a unique position in the Deaf World, since they are born into Deaf Culture from birth, and yet their Deaf parents are typically born into hearing culture and learn Deaf Culture (2008).

Codas often act as brokers between their Deaf families and the hearing world (Paul Preston, 1994; Pizer, Walters, & Meier, 2013) They often communicate in the style of their parents, whether it is ASL or spoken language with an accompanying sign language. They learn ways of being in the world from their primary examples, their deaf parents or other deaf adults with whom they may have close contact (Kanto, Huttunen, & Laakso, 2013; Pizer et al., 2013). They may act as interpreters for their deaf parents to the hearing world. They tend to be bimodal, quickly switching from ASL or a signed language to a spoken language (Kanto et al., 2013; Pizer et al., 2013).

Many studies of Codas look at them from a pathological lens instead of a cultural (Bishop & Hicks, S.L., 2008; Paul Preston, 1994; Pizer et al., 2013). But recently Coda groups such as Coda International have advocated their place in Deaf Culture. Because of their close ties to Deaf Culture and the hearing worlds, they are advocating for their unique place in Deaf Culture and recognize themselves as the bridge between the Deaf and Hearing Worlds. While they are culturally Deaf they embody the privileged position of being able to speak and hear, in a world that is built for that embodied experience (Bishop & Hicks, S.L., 2008; Pizer et al., 2013).

These existential spaces where Biculturally Deaf and Coda sit is essentially a "Thirdspace" as coined by Edward Soja, (Soja, 1996, pg. 10). This space is not opposed to the binary of Deaf versus hearing, rather it is informed by both traditions, but is taking both worlds and creating an entirely new paradigm. Some of the most interesting examples of this are the identity formations of people with

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cochlear implants, especially those that received the implantations as children. While they can hear, many feel they do not "fit" within hearing or Deaf cultures (Rich, Levinger, Werner, & Adelman, 2013). They are developing an intertwined identity, which encompasses their embodied experiences as Deaf person who can hear. Cochlear implantation is very controversial in the Deaf community, which sometimes sees it as an affront to their deafness, classifying it as a trait that is undesirable. Many culturally Deaf people do not want to hear, they are content with their deafness.

Another example of moving into a Thirdspace is the openness of Deaf Culture occurring at the Gallaudet Campus. This is exemplified in the 2013 Gallaudet University Campus Master Plan (CMP), which proposes to open the campus to the surrounding neighborhoods in an effort to link the Gallaudet community to the larger Washington D.C. area (Gallaudet openness.,2010, ULIReport_GallaudetUniversity_Sept2011, 2011). This is a profound change from the isolationist mentality that predominated at deaf schools in the last century. The CMP contained extensive community involvement, for the Gallaudet community to take their ideas for Deaf Spaces out into the wider Hearing World, and create Deaf Spaces beyond their campus in the working class Washington D.C. neighborhoods surrounding the campus. This effort is reflective of the Deaf community becoming more secure in their identity and willing to assert their desire for Deaf Spaces beyond the traditional confines of the deaf school campus.

These new modes of openness and flexibility in identity reflect the Deaf community's successful efforts to breakdown the effects of audism. Audism is defined as the system of advantage based on hearing ability (H.-D. L. Bauman, 2004). The destruction wrought on deaf, hard of hearing and hearing people associated with Deaf Culture has been to subjugate them into a less than human state (2004). Because of the Hearing World's predisposition to equating humanness with a spoken language the

Hearing World looked upon them as sub-human for centuries (Bauman, 2004; Foucault & Sheridan, 1994; H. L. Lane, 1992).

Changes in Deaf Cultural identities are not a reflection of less audism aimed at them from the Hearing World. Rather it is a reflection of the resilience and strength of Deaf Culture to withstand the discrimination and systematic dehumanizing of their culture. From the days when Deaf and hard of Hard of Hearing children refused to stop using signed language, to the "Deaf President Now" uprising at Gallaudet University, Deaf Culture has proven itself flexible and strong (Baker & Cokely, 1980; Christiansen & Barnartt, 1995a; Padden & Humphries, 1988; Stewart & Akamatsu, 1988).

Deaf Space

The definition of Deaf Space is *a space where Deaf and Hard of Hearing individuals modify an environment to meet their specific needs* (H. Bauman, 2008; Milam-Porteous, 2008; Robert Sirvage & Rebecca Sheir, 2012). Deaf people have always modified their environment to meet their needs informally. Deaf and hard of hearing people change seating in a room in a circular pattern so they can see each other better as they communicate with American Sign Language. They adjust lighting and move objects or furniture so that their line of vision is unobstructed. Deaf Space is not however, simply created by the modifications to the physical environment. These changes merely support and enhance the connections to each person in the space (Bauman, 2005). Deaf Spaces are dynamic, with hands moving, signing and waving (Sirvage, 2012) and the reverberation of different voices or none at all, uniting with others in a symphony. Deaf Spaces are not just for the deaf or hard of hearing. They are for any person that is part of a visually centered environment which supports deaf needs. They are primarily designed for linkages, between people and the spaces they occupy. For deaf and hard of hearing and hearing people associated with Deaf Culture, a Deaf Space becomes respite, a space where they can feel safe and at ease.

Gallaudet University DSDG Deaf Spaces

Gallaudet is the most deliberately constructed Deaf Space in the world. Hansel Bauman, an architect and brother of a Deaf Professor at Gallaudet, along with other Gallaudet University Planners solicited input from the larger Gallaudet community during the design process for the Sorrenson Language and Communication Center (SLCC). The initial intent for the building was to incorporate modern architectural design and develop a technologically sophisticated building. They also wanted to incorporate spatial modifications used by Deaf and Hard of Hearing individuals into the design of the building. Prior to the design process, the Gallaudet student movements pushed the student body and university administrators to create a campus that would reflect Deaf Culture and center the campus on the needs and desires of the Deaf population. The SLCC is a representation of their efforts to create Deaf Spaces that are designed by and for deaf, hard of hearing and visually centered individuals. They decided to codify the modifications to use as a template for Deaf Spaces in the future. Thus the development of the DSDG began (Milam-Porteous, 2008).

Two buildings on the Gallaudet campus exemplify the DSDG, they are the above mentioned Sorenson Language and Communication Center (SLCC) and the I. King Jordan Student Academic Center (JSAC).

The SLCC building opened in August 2008. It is the cornerstone of Gallaudet University campus. It incorporates modern architectural designs based on the DSDG.

The JSAC is the primary student gathering space on campus. It is a 1980s era building, and while it was not constructed using DSDG, it is a good example of Deaf Space pre-DSDG. The building's construction and subsequent interior modifications fit many of the criteria of the DSDG.

Figure 2: Interior of the I. King Jordan Student Activity Center

The SLCC building example gave participants from the ASLA the opportunity to view a modern structure built intentionally with DSDG and the JSAC was an example of an older building with DSDG modifications for a useful Deaf Space. The two buildings are very different from the Albuquerque Sign Language Academy (ASLA) building. The challenge in this research was to find commonality between the ASLA and the Gallaudet spaces and recognize the links between university and primary school Deaf Spaces.

Deaf Space Design Guidelines (DSDG)

Each of the DSDG concepts aims to enhance spaces designed purposefully for a visually centered population. The visually centered designs are termed visu-*centric* (H. Bauman, 2008).   At its core, the goal of Deaf Space is to enhance connectivity and support the collectively focused culture of the Deaf . Deaf Worldview is reliant on creating connections, especially face to face (HBBM Architecture, 2008; What is Deaf Space, 2003). Effective Deaf Space design is vital to support connections and avoid hindrances to visual communication in Deaf centered spaces (H.-D. L. Bauman, 2004).

The following paragraphs describe the guidelines, along with illustrations of each concept. Deaf Space design centers on five basic concepts; Sensory Reach, Mobility and Proxemics, Light and Color, Space and Proximity, and Acoustics (H. Bauman, 2008; Byrd; 2008).
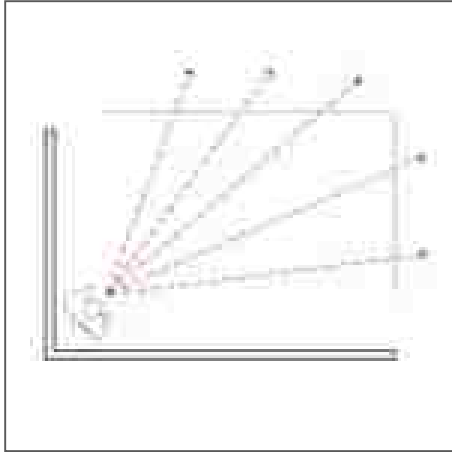
Sensory Reach: An effective Deaf Space requires that a person relying on their vision can adequately view their surroundings. The ability to see movement such as slight variations in bodily and facial expression of others is important. To feel the vibration or see shadows is essential to make this element useful. The goal of Sensory Reach is to create the surrounding "360 degrees" of spatial awareness (2008). This does not mean that the space is required to have fully open concept, but the rooms should have open access, so that the space is easily accessible though line of sight.
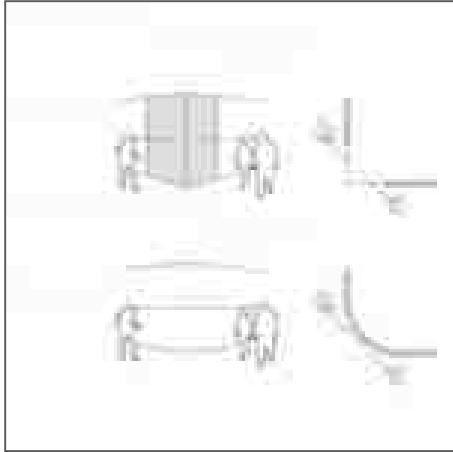
Mobility and Proximity: Walking and talking at the same time for deaf, hard of hearing or any two or more people using ASL to communicate, can be challenging in a non visu-centric environment. If two or more people are signing and walking they must both focus on the person they are talking to while simultaneously pay attention to their environment to avoid obstacles that may come up on them (HBBM Architecture, 2008.; Robert Sirvage & Rebecca Sheir, 2012) . It is common for signers, while they are walking and signing to stop during their conversation and rely on their peripheral vision, tell their partner if there is an obstruction coming, adjust their progression and resume their conversation while continuing to walk (2012). Ideally mobility in Deaf Spaces would consider how to make the visual environment easier to navigate. Visu-centric mobility designs may use automatic doorways or visual signifiers that can alert walkers to changes in their walking paths. Rounded corners help prevent two walking signers from running into a sharp corner as they focus on their conversation.

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Light and Color: Deaf people are reliant on the light and color of spaces for effective communication and to create spaces that feel safe and comfortable. Color on walls and carpeting can enhance or hinder visual communication when it is too bright or dark. Bright colors tend to cause eye fatigue and dark colors cause eye strain. For the hearing public, uncomfortable colors and lighting may feel like an annoyance, but for Deaf and visually centered people uncomfortable coloring can cause eye fatigue and feelings of discontent. It impacts communication by hindering the eye's ability to move and focus on the communicator thereby reducing effective communication. There are several architectural designs that can help with lighting, such as proper shading elements added to windows to divert daylight without darkening a room, paint that reduces bright reflection off walls, and lighting which diminishes glare (H. Bauman, 2008). Appropriate lighting is also an important safety element for Deaf Space. Use of lighting can be part of an alert system or a visual alarm. Fixtures should be easily accessible so a person can turn on the light as soon as one enters an unlit space so they can make sense of their surroundings immediately. Lighting can also help with wayfinding as contrasting lit spaces are easy on peripheral vision.
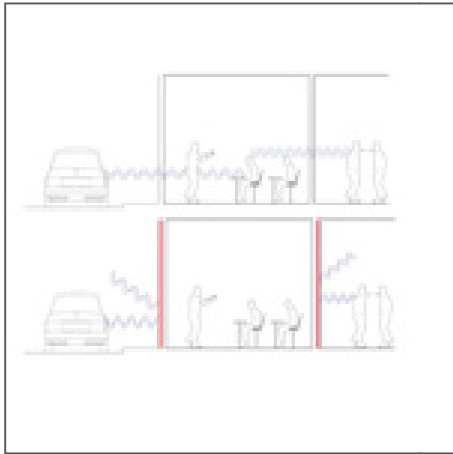
Acoustics: Many deaf and hard of hearing persons have some auditory ability, and when they do not

they are still reliant on feeling emanating from sound vibration. It can be challenging for a hard of

hearing person who relies on some auditory ability to function, to pick up sound when a room does not

have adequate sound protection and is reverberating. Assistive devices such as hearing aids, can pick up

reverberation and can cause physical pain (2008). Conversely, a moderate amount of vibration is an

important indicator for deaf and hard of hearing individuals. The challenge with acoustics is that it

needs to be very strategic to accommodate all needs. Loud vibration is not desirable; it must be

strategic and useful. For example, vibratory indicators in doorway floor mats give off a vibration when

someone walks over it, alerting the person in the office of someone approaching. For many years

vibrating alarm clocks and telephone ringers have been common in Deaf Spaces. Utilizing sound barrier

material on walls while incorporating vibration indicators, is the ideal blend in this design concept.
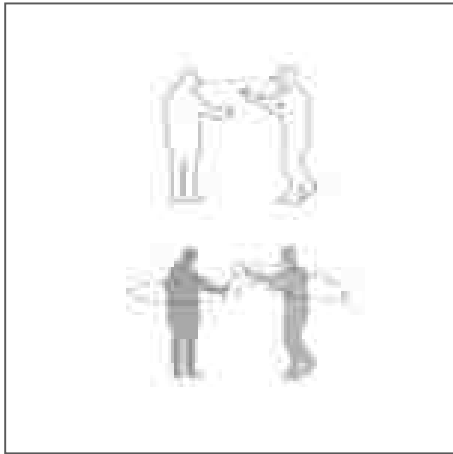
Space and Proxemics: This concept illustrates the importance of the physical area that people using ASL keep in relation to one another. The study of proxemics is the personal space that a culture maintains to adhere to certain cultural rules about touch and closeness. When two or more are communicating with ASL and relying on their vision to read signs, they must have adequate space to move their arms and hands and enough distance to view the other person's signs comfortably without obstruction (H. Bauman, 2008). It is important that visual communicators have space to touch each other as part of their communication style. Deaf and hard of hearing people are kinetic; they touch each other often as means of notification, greeting or as a manner of expressing emphasis in ASL. Broad hallways and circular seating arrangements can provide relaxing environments for signers.

These five design guidelines are the initial concepts to come out of the DSDG community process. The DSDG are in an ongoing process of modification and growth (H. Bauman, 2008, 2003). They are not available in a written form yet, though there are resources online. There is also correspondence with Christopher Keene, the architect from Dagermond, Keene Architects who worked

with Bauman and the students at Gallaudet on the Campus Master Plan and an ASL Teaching Space.

Images © Dangermond Keane Architecture.

Albuquerque Sign Language Academy (ASLA)

The basis for choosing the Albuquerque Sign Language Academy (ASLA) as the site for this research rested with the diversity of its students. The mix of deaf, hard of hearing and hearing students makes this a unique school to observe the interactions and construction of Deaf Space. The following information is available as public record through the 2010-15 ASLA Facility Master Plan and Educational Specification (Architectural Research Consultants, 2010) document and transcripts from the Charter School Advisory meeting (Albuquerque Sign Language Academy Charter transcript, 2009).

The Albuquerque Sign Language Academy is a free, non-profit charter school located in downtown Albuquerque, NM. The founders of the ASLA are parents and educators of deaf, hard of hearing and hearing children. Some of the deaf and hard of hearing children also have other cognitive needs which the school is dedicated to educating. According to the New Mexico Public Education Commission a school does not receive a charter unless it can prove that it "fulfills a unique need and is not duplicating services already provided in public schools" (Albuquerque Sign Language Academy Charter transcript, 2009.). The ASLA adequately demonstrated that it could meet the needs for Deaf and Hard of Hearing children who were not receiving adequate education through APS or the New Mexico School for the Deaf (NMSD). The NMPEC granted their charter in 2010.

The ASLA proved they could fill a need for deaf, hard of hearing, hearing and visual learners in several ways. Administrating education for deaf and hard of hearing children in New Mexico has historically occurred in two ways, through mainstreaming and/or inclusive classrooms in Albuquerque Public Schools (APS) through APS ACCESS, or at the residential NMSD in Santa Fe. The ASLA stated that part of their uniqueness is that it will provide opportunities for children to remain with their families,

while obtaining a standard based, ASL centered curriculum in an inclusive deaf, hard of hearing and

hearing environment (Architectural Research Consultants, 2010). According to the ASLA founders'

testimony to the Charter School Advisory Group, children educated in APS were likely to experience

isolation since they were in an environment that did not support their unique ways of being

(Albuquerque Sign Language Academy Charter transcript, 2009.). Alternatively, NMSD is a fully Deaf

centered environment, but is located approximately 65 miles from Albuquerque and is a residential

school for deaf students only. The founders of the ASLA advocated that their school would offer options

to families beyond having their children educated away from their families or experiencing isolation and

loss of self esteem in APS because of their deafness.

The ASLA's commitment is to provide an environment that combines deaf, hard of hearing and

hearing children in a fully integrated environment with a bilingual education model of spoken English

and American Sign Language (http://www.aslacademy.com/home). Their mission is as follows:

The mission of the Albuquerque Sign Language Academy is to improve educational outcomes for

Deaf, Hard of Hearing, and hearing students in the greater Albuquerque area by providing a

rigorous standards-based bilingual educational program which utilizes American Sign Language

and English to achieve academic excellence, support family involvement, and promote

multicultural community partnerships.

To this end the school has a fully bilingual mulitcultural curriculum of study, employs ASL

proficient faculty and has developed community partnerships across the New Mexico Deaf community

(aslacademy.com). The objective is for students to simultaneously learn ASL and spoken English in an

ASL centered environment (aslacademy.com). They are the first and only State-Certified Bilingual ASL

English Program in the United States. The purpose of bilingual education is twofold; that students will

gain greater language acquisition outcomes as they learn both ASL and spoken English, and that deaf

and hard of hearing students will interact and experience a sense of belonging with their hearing counterparts. The curriculum is rigorous and interactive, imbued with various learning techniques such as games, art and technology (aslacademy.com).

The acquisition of ASL proficiency has shown to improve educational outcomes for deaf and hard of hearing children. The bilingual educational model is an established model of deaf education, but the ASLA is relatively unique in that they are conducting this model with deaf, hard of hearing and hearing children simultaneously. Because of their inclusivity, hearing students who are Coda (Children of Deaf Adults) or Soda (Siblings of Deaf) can attend the school with other Deaf children in a Deaf Space environment. Not all of the hearing students are from Deaf families, but their parents chose the school so their children can learn ASL and have a bilingual education (aslacademy.com). This is a new and innovative approach to deaf education and is an inclusion model that could serve as an example for other schools.

The ASLA also states a commitment to creating community partnerships in the greater NM Deaf community. They work with the Deaf Community Center (DCC) and the NM Commission for the Deaf and Hard of Hearing (aslacademy.com). The often open their facilities for community meetings and hold ASL classes there twice a month (aslacademy.com). In an effort to expand their community outreach, they recently established a Community Engagement Center (CEC).

ASLA Site and Building

According to the Albuquerque Sign Language Academy 2010 Facility Master Plan and Educational Specifications, the ASLA building is a refurbished office building, located in downtown Albuquerque. The General Square Footage is approximately 9,800 sf. There are seven classrooms in use currently, the full extent of the building. The front classrooms hold the K-5th grade students and the back rooms the 6th – 7th grades. From 2010 the ASLA projected their enrollment to be approximately 80,

they have met that projection and continue to accept students (Architectural Research Consultants,

2010).

The ASLA is leasing the building from Bernalillo County and at the opening only had access to part of the building. Recently they moved into a newly renovated section, and now have capacity for middle school classrooms and community outreach space. The following aerial is the ASLA site. The Phase2 section is currently in use as 6th-8th grade classrooms. The school parking lot faces high traffic Lomas Boulevard. The parking area in the front of the school is a high traffic student/parent drop off and parking area for visitors and staff. Currently the ASLA does not have outdoor arrangements for their students. Lew Wallace Elementary School, located one block to the south from the school, has agreed to lend the ASLA use of their playgrounds for recess.

Figure 8: ASLA Site

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Charter school facility standards are different from public schools in the state of NM. Charter schools are exempt from many of the facility requirements which public schools must adhere to such as classroom size, adequate support spaces and outdoor spaces. Charter schools enter into lease agreements with their own legal counsel and can lease or purchase a facility that they believe fits their school's needs. This both frees charter schools to find spaces that work for their school, yet places the burden of facility monetary investment on the school itself. They often must lease spaces that are not typical educational facilities. Many charter schools lease office buildings because it is the most available. They then attempt to modify the spaces in to educational spaces.

The following graphics are relationship diagrams of the elementary school rooms from the ASLA Facilities Master Plan and Educational Specification document (Architectural Research Consultants, 2010). These diagrams are intended to depict how spatial relationships will be constructed in a building. They are not scaled models or floor plans. The classroom's environment and locations of activity centers, possible furniture arrangements and incorporation of technology into the classroom are indicated.

The first diagram is of the full ASLA facility. Diagrams of classrooms, the multi-purpose room area and administration area are in subsequent diagrams. There are several areas of potential low visual access.

Exhibit 3-3
Overall Space
Relationship Diagram
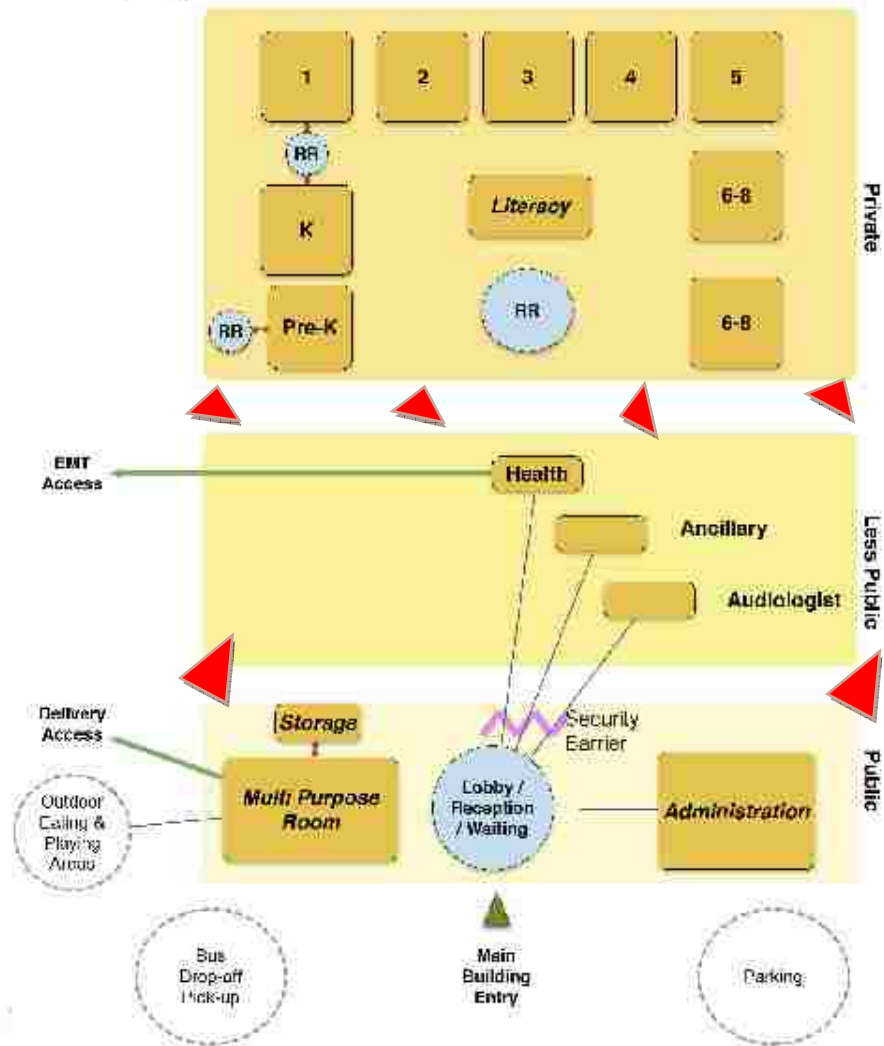
The Albuquerque Sign Language Academy
Facilities Master Plan and Educational Specifications
ARC [illegible]

3-↲
April 2010

Figure 9: Overall Space Diagram

The following diagram is of the elementary school classrooms. Some of the rooms have natural lighting from windows. There are several opportunities for activity areas in the classrooms.

Exhibit 3-7
2nd through 5th Grade Classroom Relationship Diagram

childhood classrooms, but do not require adjacency to restrooms. See Exhibit 3-7 for this relationship diagram.

- Trapezoid Tables
- U-shape table.

Smart Board
White Board
Lots of wall space for reference material

Wet Area
Activity Center
Activity Center

Black-out ability

Activity Center
Activity Center

Student Cubbies
Corridor
Literacy Room

Storage

Instructor area with wardrobe

Figure 10: Elementary School Classrooms

The following diagram is for the 6th – 8th grade classrooms which were recently acquired by the

ASLA. They are similar to the elementary classrooms, but they have greater desk space for students.

Exhibit 3-8
6th through 8th
Grade Classroom
Relationship Diagram

Smart Board
White Board
- Lots of wall space for reference material
- Space below to be used for books and supply storage

- Trapezoid Tables
- U-shape table.

Wet Area
Desk Space

Literacy Room

Black-out ability

Activity Center
Activity Center

Student Cubbies

Corridor

Instructor area with wardrobe

Storage
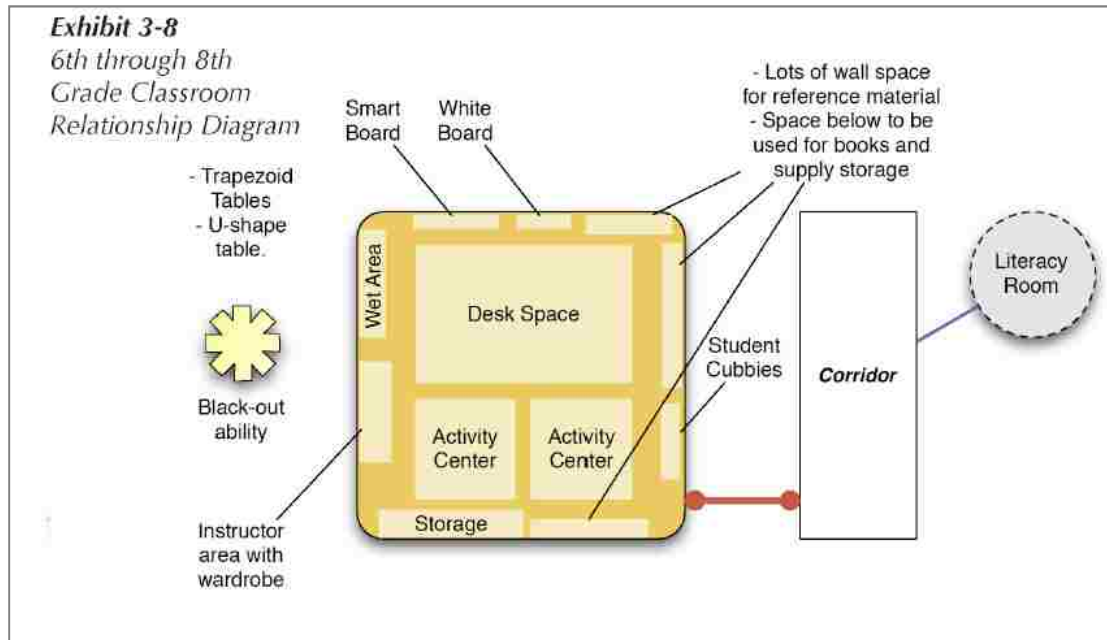
During the Community Analysis, the participants refered to this large Multi-Purpose room several times.

This diagram from the FMP is is useful to understand the relationship of the Multi-Purpose room to

other rooms in the building. This room is used for several functions, including a library, physical

education, cafeteria, communal area and until the recently the classrooms for 6th-8th grade.

Exhibit 3-11
Multipurpose Room Relationship Diagram
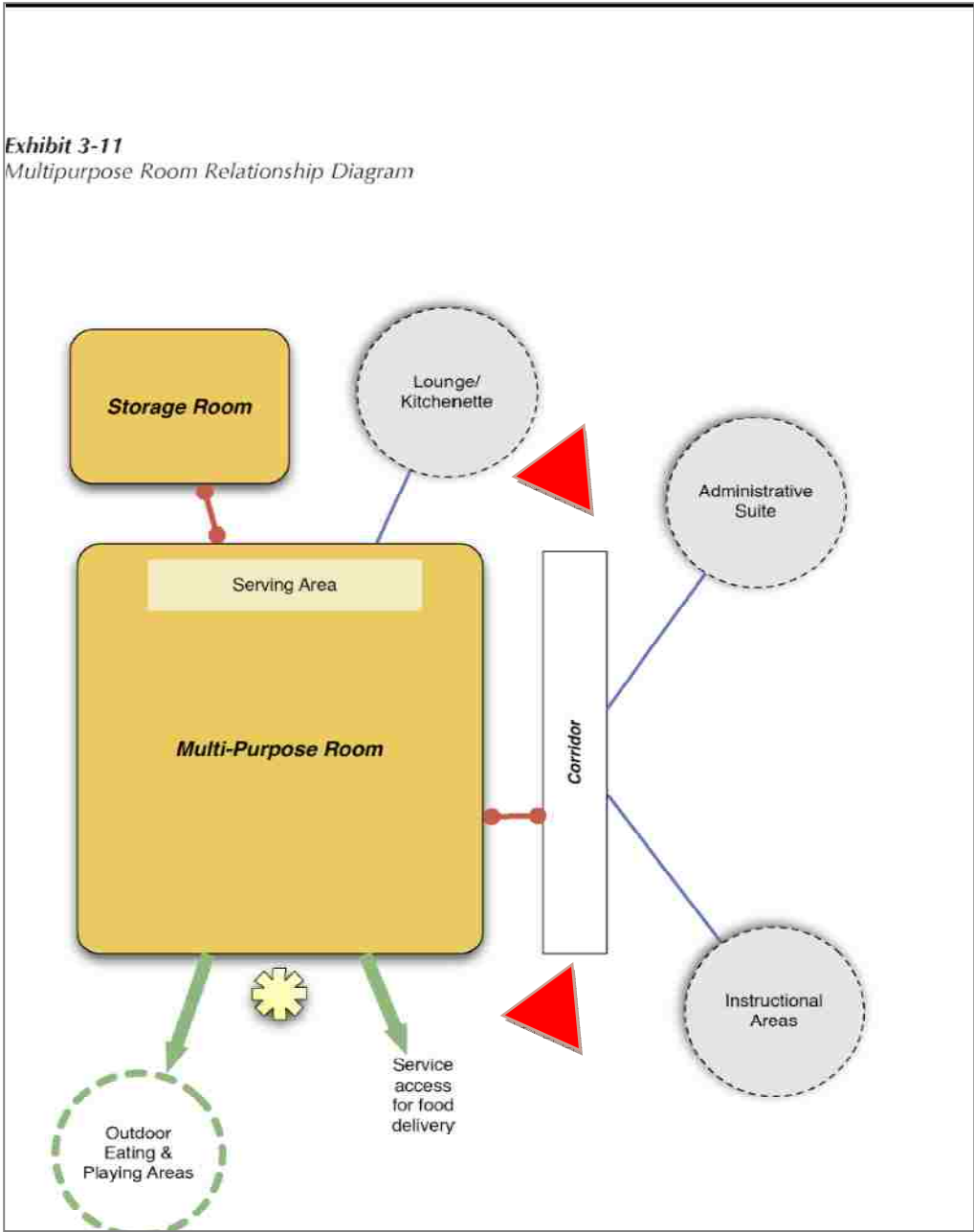
Figure 12: Multi-Purpose Room

This diagram is illustrative of the layout of the ASLA. Note the corridor and adjacent administrative

spaces. The classrooms are configured in a similar fashion down a separate corridor
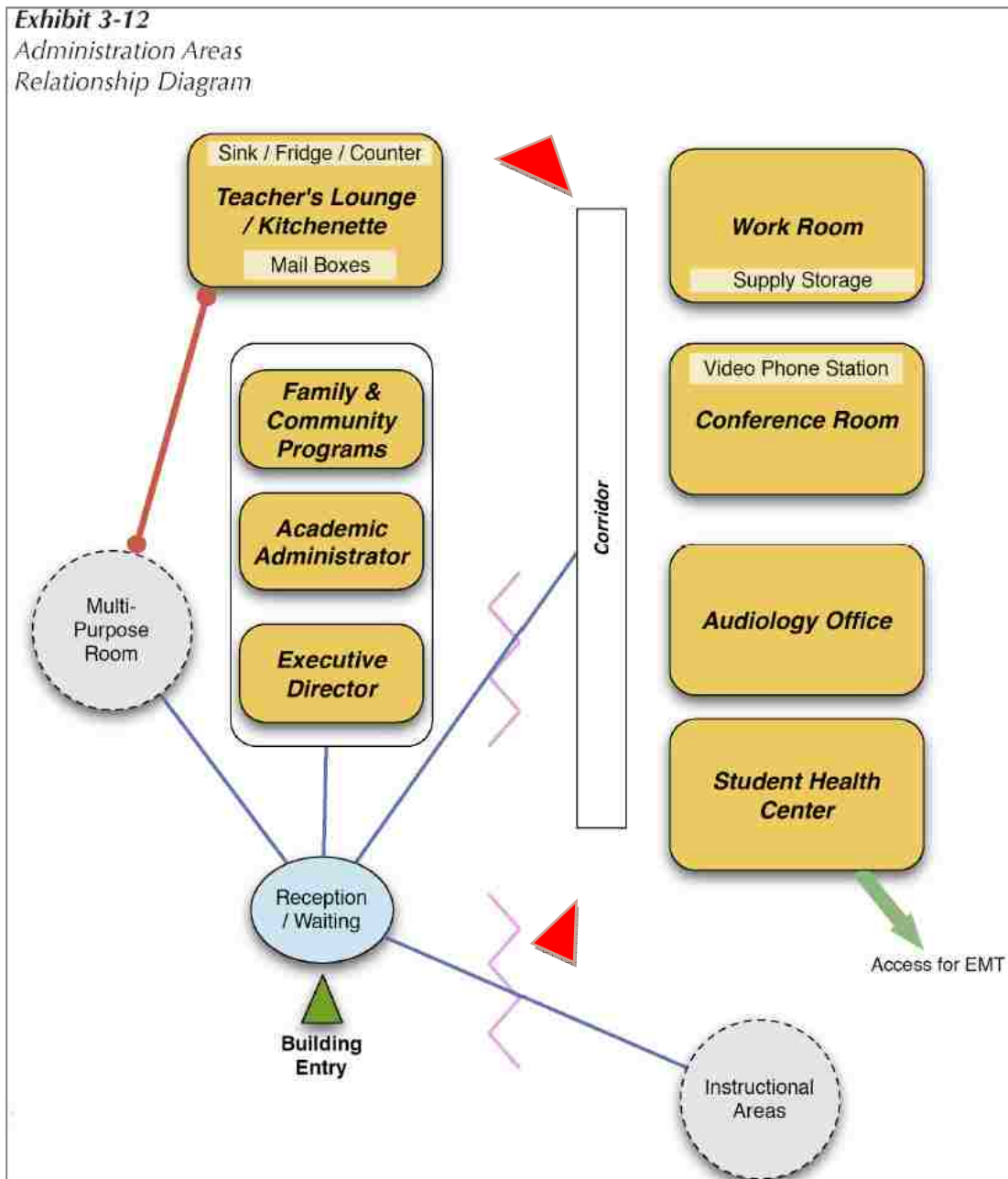
Exhibit 3-12
Administration Areas
Relationship Diagram

All diagrams from the 2010 FMP Educational Specification, Architectural Research Consultants.

The ASLA building was approved for use as a school facility in 2010 (Architectural Research Consultants, 2010). The ASLA intends to grow into a new facility eventually. They are currently using the facility to its fullest capacity.

Methodology

This research used Community Based Participatory Research (CPBR) methodology, focused on engaging participants to make final decisions about ways the DSDG could enhance the ASLA space to encourage interactions, communication and learning between students. The full protocol consisted of five qualitative methods;   An analysis and gathering of source material from Gallaudet University's Deaf Spaces through photographs, a Non-Participant observation of the ASLA facility, Visual Analysis drawing exercise, Visual Focus Group to review and analyze Gallaudet Deaf Spaces, and ultimately a Collective Analysis to make final decisions about how the DSDG would apply to the ASLA space. This protocol design set up a mechanism of evaluative decision making by grounding each section to previously gathered information in the protocol.

Community Based Participatory Research (CBPR) protocols are designed for the community to play an important role in the design and conduct of the research. The role of the Primary Investigator (PI) is to facilitate and let the participants make decisions based on evidence they recognize. The community has ownership of the research in which they are participating. The first step of a CPBR is to decide with the community what is an issue or need they would like to investigate. After initial discussions with the ASLA administration they expressed intentions of moving into a larger space, but until then they wanted to make their space more functional for their students and staff. At the time, approximately one and half years before the CPBR took place, they were using only a portion of a converted office building and they were anticipating expansion into the entire building in spring 2013. The ASLA did acquire the entire building prior to the community process and they were organizing classrooms for middle school students to move in the next few weeks.

The ASLA leadership was supportive of participating in this type of research because they are continually searching for ways to improve their school. And coordinating with a representative of UNM

CRP, they were fulfilling one of their stated goals of creating community partnerships. At the

suggestion of the Executive Director of the ASLA, a core group of the ASLA community was asked to

participate. Most were from the ASLA Student Advisory Council (SAC). The SAC Board consists of

parents, faculty and community members invested in advancing the goals of the ASLA. The board

participates in such activities as fund raising, organizing student field trips and coordinating events for

parent and community connections outside of the ASLA.

At the first meeting with the SAC, they set all dates for the four protocol meetings, agreed to

recruit participants for the meetings and administer the Visual Analysis section of the protocol. SAC

methods for gathering participants included sending out email announcements, meeting and contacting

people one on one and via text and phone calls.

Observation and Photographs of Deaf Space at Gallaudet University

The two Gallaudet buildings chosen to exemplify Deaf Space for the ASLA community, the

Sorrenson Language and Communication Center (SLCC), and the I. King Jordan Student Activities center

(JSAC) were photographed by the PI for use in the Visual Focus Group and Community Analysis. A

challenge of this research was to connect university spaces to the ASLA primary school space. The

choice was made to photograph design elements of the Gallaudet spaces that reflected the DSDG and

let the ASLA participants make the decisions of which applied to their space. Photographs were

presented to the participants in a power point and on individual handouts.

Non- Participant Observation

A non-participant observation of the ASL Academy space was conducted after a brief interview

with Rafael Martinez Executive Director of the ASL Academy. The observation of the space took place

during regular school hours. The purpose of the observation was for the PI to gain knowledge of how

the space functions currently with deaf hard of hearing and hearing students, as well as faculty and staff present. There was limited engagement with the student population. Their interactions within the ASL Academy space were observed and notes were taken. The observation took place while classes were in session.

Visual Analysis

This protocol component was chosen to develop an overall understanding of individuals' perception of the ASLA space. Each participant was given 3 large pieces of paper in which to draw on and colored pencils with which to draw. They were able to take the paper home or draw in the school. The drawings were returned to the PI, 5 days after the papers were distributed. There were 4 participants consisting of mostly teachers, parents and other staff with adequate involvement in the ASLA. The first page directed the participants to draw something they like about the ASLA building. The second page directed them to draw something they do not like about the ASLA building. And on the third page participants were directed to draw their feelings about the ASLA building.

The purpose for drawing was twofold. First, drawing gave the participants a different avenue to express their perceptions and observations beyond spoken or written words. Second, many members of the Deaf Community are visually centered in their learning, so a visual exercise was effective. The PI collected and reviewed the drawings as a template for a focus group protocol based on the analysis of these drawings. Participants wrote names and their relationship or subject position to the ASLA on the front page.

Visual Focus Group

This Visual Focus Group analyzed pictures from Gallaudet University's Deaf Spaces, including the Sorenson Language and Communication Center (SLCC), the J. King Ivory Student Union Center (JSAC) and

several outdoor spaces on the campus. The focus group centered the discussion on how design

examples from Gallaudet could apply to the ASLA space. Below are examples of pictures used in the

focus group.

Figure 14: This picture is of the SLCC. It shows the circular bench in the far left corner, an open design, use of light and glass create visual access. Colors contrast.

Figure 15: Hallway in the SLCC. Contrasting colors and windows allow natural light.

Figure 16: SLCC classroom interior. Shades allow natural light to come into the space without glare. Rolling chairs and round tables are other important features of this space.

Figure 17: SLCC Exterior. Pillars offer peripheral vision cues with upward facing light fixtures on each pillar along wide walkways.

Figure 18: Interior of I. King Jordan SAC. Open circular area allows for line of sight access. The rounded corners and contrasting colors along the walls, floor and brickwork supports peripheral vision.

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Figure 19: Lunchroom in JSAC. Diffused lighting and mirrors on walls are important features of this room.

Figure 20: Lunchroom in JSAC. Frosted glass wall creates privacy while allowing for visual access to the other room.

Participants sat in a figure 8 configuration in the room to view the presentation and communicate. The room was open and large and accommodating to ASL communicators. As a group the participants looked at the photographs provided, reflected on the DSDG in each and analyzed them for usefulness in the ASLA building. A definition of Deaf Space was provided. A Deaf Space is one that takes in account visually centered learning, communication and function. It is space *that Deaf and Hard of Hearing people modify to reflect their unique way of being*.

Participants were asked the following questions in the course of the focus group:

1) What elements do you see in this space/room?

      a.   What do you think is good about this space or room?

      b.   What do you think is bad about this space or room?

      c.   Do you see anything in the pictures that might be important to Deaf spaces?

      d.   Does the ASLA use any of these designs?

      e.   Do you think the ASLA should use them?

      f.   How do you see people interacting in this space or room?

      g.   Do you like it or not?

      h.   How do people interact in the ASLA space?

2) Did I leave anything out that you would like to add about Deaf Space?

The PI documented the main points of each question on a large flip chart. The PI is fluent in ASL but used an ASL interpreter provided by the ASLA to assist in translation. Most of the meeting was conducted in spoken English since only one Deaf woman attended for the first part of the meeting.

Of the eight participants were a combination of Deaf and hearing teachers, parents and other staff with adequate involvement in the ASLA. Every person signed a consent form that did not guarantee anonymity, prior to participating in the project.

Collective Analysis

The final stage of the process was to use the Visual Analysis and Visual Focus Group exercises to come to some agreements about how the ASLA space functions for the students, faculty and staff and if the DSDG can enhance its operations. This exercise deliberately encouraged free flow of dialogue. The group as a whole reviewed the past exercises, discussed individual recommendations for the ASLA space and came to a consensus on particular DSDG that pertain to the ASLA building.

Participants were asked to sit in a comfortable area around a table so each person could see one another easily. The facilitator reviewed the past exercises and asked if there were questions or something anyone would like to add. Participants brainstormed ideas about which DSDG they would like to incorporate into the ASLA individually. They then broke into groups to discuss the brainstorming ideas they developed. Each group had approximately 10 3x5 blank note cards.   They collectively decided on the most important ideas, agreed one each and wrote one idea per card.

When the process was completed the P.I. collected the cards and randomly placed the cards on the table. The DSDG ideas were then organized into which cards fit together and what are the titles of the clusters and/or outliers. This was the first step towards implementation of their ideas for the ASL Academy. Together the group chose one person to write on a floor plan drawing of the ASLA building the specific DSDG elements they liked and wanted to apply to specific areas in the building. This process was deliberately interactive. The participants were encouraged to discuss their ideas. The map was collected by the PI for analysis.
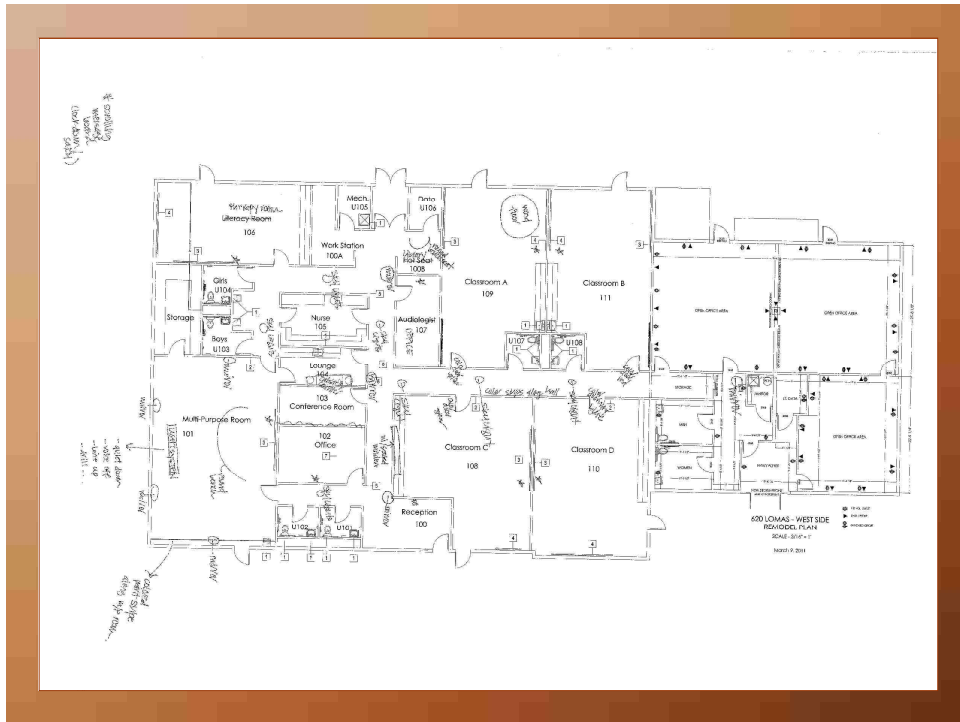
In the final part of the Collective Analysis the PI addressed two questions to the participants: "How do you believe your students display empowerment in this space? And, "Do you believe this is a 'Deaf Space'?" She also asked how the process went, and if there were any questions about the process.

That concluded the process of group participation. The PI answered questions from the participants about the rest of the process such as data analysis and how this information will be passed on to them after the thesis is written and complete.

Data Analysis

The Visual Analysis, and transcripts from the Visual Focus Group and Collective Analysis were codified into themes based on the DSDG concepts using Atlas Ti qualitative research software. Each response was linked to a DSDG concept and then analyzed for overlap and consistency. This coding design allowed a clear delineation of each DSDG concept and the link participants made between the concept and the successful student interaction.

Findings

The findings of this CBPR project reveals participants' reactions and analysis of the DSDG concepts, how they related them to the physical environment of the ASLA and whether they believed the concepts would enhance or detract from successful interactions in the ASLA space. The findings also reveal how the participants decided to implement the DSDG into the ASLA building with the Community Analysis map. Each section includes a description of the findings, some analysis and direct quotes from the participants pertaining to each DSDG concept and outlying issues not directly aligned to the concepts. All quotes are directly from transcripts of the meeting. To maintain obvious separation between participants' dialogue, each new statement is indicated with a bullet point.

The findings indicate that Lighting and Sensory Reach were the most mentioned Deaf Space Design Guideline concepts which participants identified to enhance interactions in the ASLA building. These two concepts often overlapped during the discussions. The remaining concepts were referred to the most often; in descending order were Mobility and Proximity, Space and Proxemics, Acoustics and Vibration. Some of the other issues that came up around the ASLA space did not fall easily into the DSDG concepts. They were issues pertaining to the outdoor spaces and issues of safety. The following bar chart is a representation of frequency each concept was discussed in each of the five protocol points.
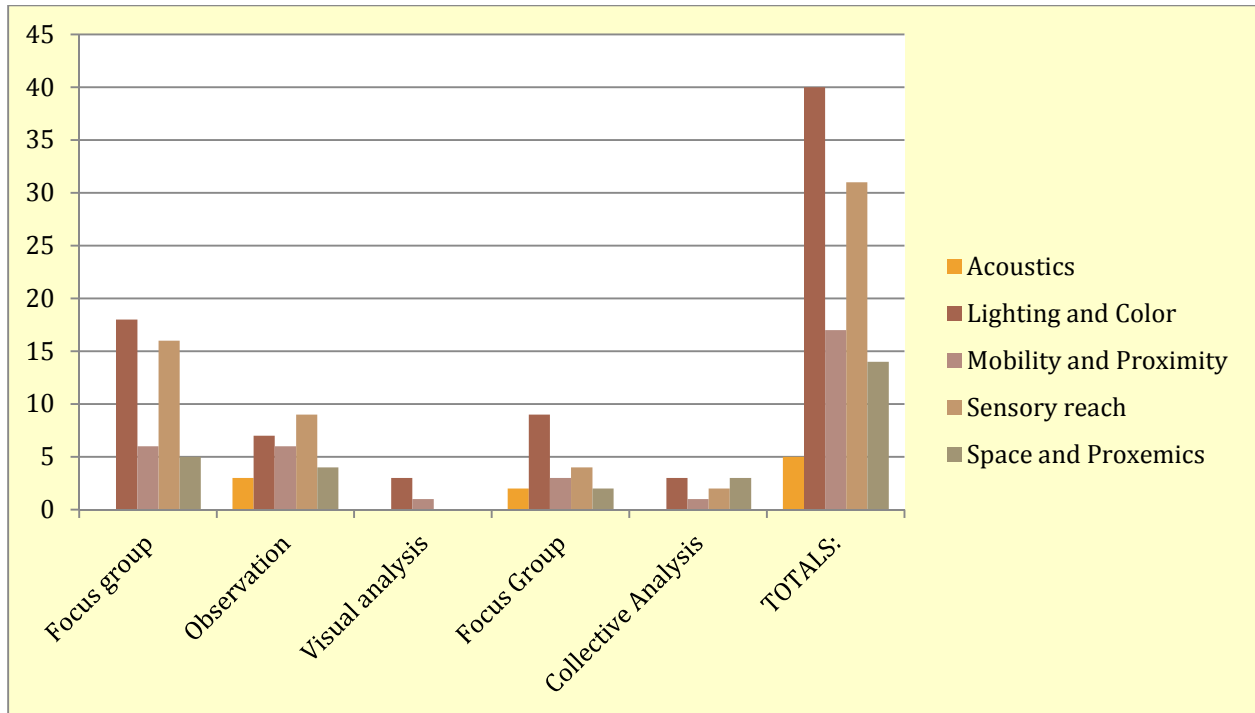
Figure 22

Light and color

Participants often referred to Light and Color as separate concepts in the group meetings. For the purposes of clarity, Light and Color will be discussed separately here as well.

Light

Light was coded every time a participant spoke of lamps, lights, and windows or lack thereof. Many of the lighting issues participants referred to were the ASLA building's dearth of windows and lack of sunlight in the classrooms and corridors. A particular struggle in the ASLA building is that the building has many long corridors and rooms without windows, so they do rely heavily on artificial lighting as a substitute. Lack of adequate lighting was an issue brought up in each of the exercises and meetings.

In the initial observation of the space, lighting issues were particularly evident in some of the classrooms. One of the classrooms faces north and has several windows that lead to the parking lot and boulevard. The other classrooms, including the big multi-purpose room have no windows or very little natural lighting. All the classrooms rely on fluorescent lighting. Recently the school expanded into another section of the building and made that section into 6th-7th grade classrooms. The lighting in that area was particularly dark. One of the participants simply said the lighting in the new section was "terrible".
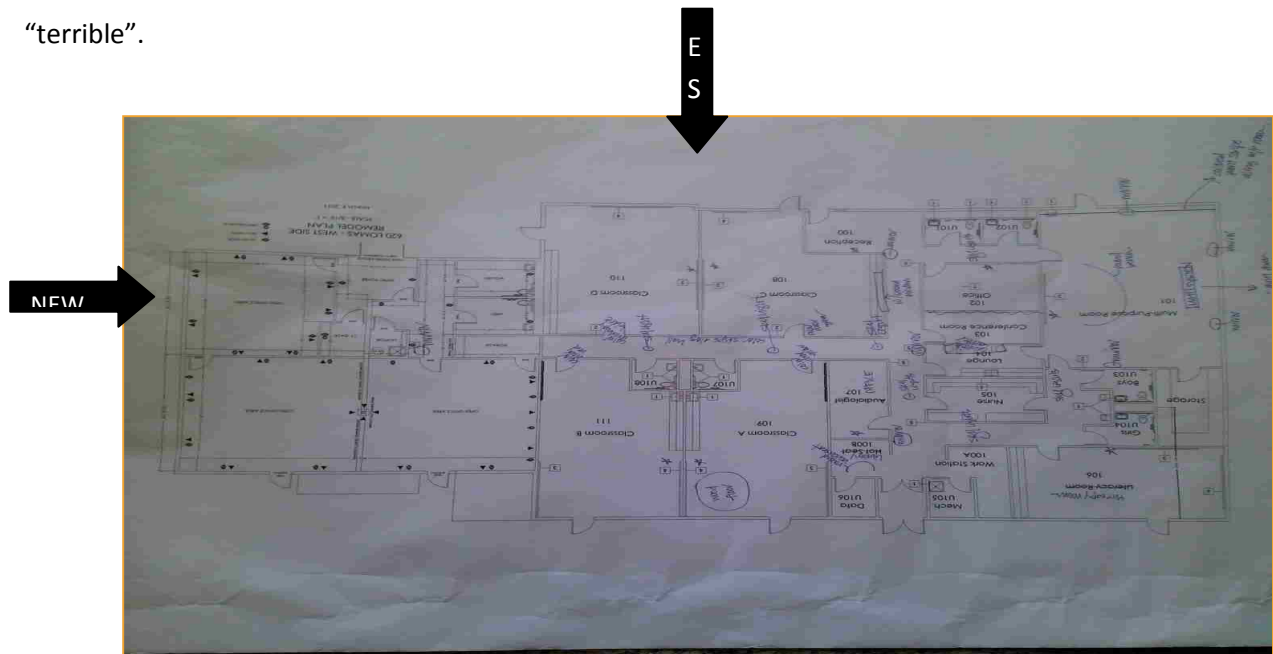
Figure 23: Elementary and new wing

In several of the classrooms lights glared on promethean boards, large computer wall units that act as computer monitors making it difficult to see projected content. Promethean boards are very effective at visual presentation tools and are often a crucial part of modern educational classrooms. In at least one ASLA classroom the lights glared onto the Promethean board directly and it was hard to read. Turning down lights could alleviate the problem, but then the students and teacher would struggle to see each other and communication would deteriorate.

This either/or scenario came up often in analysis of designing effective communal spaces for the ASLA. In the previous example, the remedy would be to lower the lights, but in this space it becomes a detriment because it lowers the ability to have effective visual communication and relations between students and teachers. Finding a balance between the DSDG and the needs of each student was a constant challenge for the participants.

When participants looked at the slides of the SLCC and JSAC at Gallaudet, many of them liked the glass walls of the SLCC, which they observed as enabling communication and good visualization. But, the natural lighting was something most seemed to appreciate about the space. The ASLA does not have the option to replace a wall with glass and cut out new windows. Yet it was something they expressed a desire to put into their space. Several of the participants did like the frosted glass in the photos of the JSAC lunchroom and the sense of openness and natural lighting it gave to the spaces while maintaining a sense of separation or privacy. The Deaf woman was particularly enthusiastic about the very bright areas of the SLCC. She said she likes it "very bright".

The desire to create more window space instigated several conversations by participants. Some of the ideas centered on cutting windows into interior walls from classrooms to hallways which would open both the hallways and classrooms to additional light flow. The following discussion centered on ways to make the interior wall window accommodating:

- Woman: I'm thinking about windows but windows that would let in more natural light but like stained glass.

- Woman: What about, like adding skylights or windows. Like interior windows, I mean. I like the idea, I think you said, (points to Jen) your idea of having high windows. But I think they could be frosted or something. Yea, so we are getting some natural light. But it wouldn't be so distracting, and then you could put in the color or whatever. It would be nice to cut some windows.
  Woman: Oh yea, it would be nice. To cut a window to the outside from in every classroom.

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- Even having skylights in the hallways, but like you were saying with the technology it is even hard to see down the hallways.

Some of participants questioned levels of safety and privacy when classrooms have an open window or whether it would cause potential distractions to young elementary students. The frosted or diffused glass suggestions alleviated some of those concerns.

During the Collective Analysis map making, they placed five skylights along the corridors for natural lighting. Each strategically placed skylight was in a corridor area that is predominantly darker than others, without access to natural lighting through outside facing window. In one of the largest classrooms they indicated a spot for a window facing the office with partially frosted glass.

Figure 24: Floor plan with skylights indicated.

Many of the concerns about windows overlap with the Sensory Reach DSDG concept, since windows also provide an important way to view through a wall. And if you are communicating in ASL you can do so through a window since hearing is not necessary. In this way communication and connections could be enhanced by interior windows. If windows are fully frosted they can still transmit shadow or movement between rooms.

Windows would allow better light flow and possibly enhance communication, but because the ASLA is reliant on artificial lighting for most of their lighting needs, discussions about the type of lights to incorporate into the space was also a deliberation point. The following excerpt is from these discussions.

- Woman: Under "lights" (topic in Community Analysis), we have dimmers, frosted windows, create light diffused light. Frosted windows do diffuse light. And then more natural light.

Woman: I hate these (pointing to ceiling, and fluorescent lamps). If we had some other way.

Man: Like skylights?

Woman: No, well that too. But I mean…

Woman: More soft lighting

Woman: Like they have at the dentist, or gynecologist.

Woman: There are things you can do. Like a lamp?

Man: Like the dentist thing.

Woman: It's almost like plastic stained glass.

Man: So they think they are fooling you, like you are not going to know what is happening.

Woman: Or round lights. These that we have are horrible.

Woman: So those lights are meant to make you feel calmer, so you will find them in places like dentist's offices and doctor's office. In that case you don't feel the flicker of the florescent lights, but they are there.

Woman: I can feel these.

Many of the participants expressed a dislike for the fluorescent lighting. The school administrator admitted that she keeps a lamp on her desk to avoid the fluorescent lights in her office. Lights that emit a diffused ray were popular with the group. These lights are common in the JSAC cafeteria building and in some of the hallways of the SCLC. One of the participants refers to those light fixtures in the above passage, when he says "or round lights".

The newly acquired classrooms are equipped with motion sensor lights, which sometimes turn off when the room is still occupied. This may be an annoyance to hearing people, but some of the participants were concerned that when the motion sensor lights go off the entire discussion in the classroom is gone, because they lose their sight. Most participants agreed these lights were not desirable and instead suggested lights with dimmers and lights on remote control so teachers could

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have more control of the lighting in classroom.

Color

The DSDG concept of Color was coded when participants referenced color in several contexts such as painting on walls, colors of signage and colors as indicators of elementary school surroundings. Most of the walls in the ASLA building are painted a pale yellow. The distinguishing classroom signs on the doorways are small and are not quickly visible. The classrooms are an off white and the back classrooms for older students are a white/gray color. Most of the lower grade level classrooms have colorful posters with bold writing and bright colorful pictures typical of an elementary school.

When the participants observed the SCLC and JSAC photos in the focus group, many of the participants said they seemed "cold" and "sterile". They did not like the lack of color on the walls and thought the ASLA building needed brighter colors because that better suits an elementary school. The DSDG concept that the most ASLA participants disagreed upon was Color. Because the color of the walls, through art and posters, is part of the school's identity, they did not feel that reducing it was useful for the space. They understood the purpose of the lack of colorful posters and distracting colors on the walls, but they did not agree that was best for *their* school.

The ASLA participants did agree with the DSDG regarding the use of color to distinguish components of the building that may limit way finding in the school building, as well as creating useful visual contrast. For example, some of the participants suggested contrasting paint on the walls to distinguish each classroom's doorway. The following passage is an example of this conversation.

- Man: What do the contrasting colors do?

P.I.: The idea is that when you are signing, and walking along.   If you have contrasting colors it helps your peripheral vision sensory.

Woman: In the hallway, like here (she points to the doorway frame) if we have a color by each door. It's like if we have a contrasting color with a big A, next to the door. It would….

P.I.: Right, right… the idea is to minimize the effect of having to stare at something.

Man: Oh ok, I got it.

Woman: Yea, the easier the contrast the more you don't have to focus on those things and you can focus on the communication.

- Woman: I just mean, painting a stripe down the wall or even a big room number, something to add with a friendly color. Just some color.

The above dialogue shows some overlap with the Mobility and Proximity concept of the DSDG, which indicates that adding contrasting color on walls can increase mobility by indicating changes in the landscape obvious to peripheral vision while walking and signing. As signers feel comfort during movement they will feel more at ease moving through the building and making connections with others.

Participants were very specific about contrasting colors on the community analysis map. They colored each classroom doorway a different primary color. And wrote "color skips along wall" on the main classroom corridor, indicating their desire to add contrast along the walls that are painted a monotone pale yellow. They also added paint stripes along the wall for the Multi Purpose room. It's not clear from the map what color in the Multipurpose room is intended to accomplish.

Sensory Reach

This concept, which relies on the capability of visually centered people to observe their surroundings with ease and clarity, is a big challenge with the long corridors in the ASLA academy and will be difficult to fully achieve in the current ASLA building. Coding for this concept included mentions of mirrors, corners, and line of sight issues. Visual and line of sight issues were of added importance because of the student and teacher interactions that are dependent on each seeing one another in the classroom. Sensory reach is also important to the students by preventing physical collisions in the building when children running down hallways.

The participants acknowledged that the corners at the end of corridors were a problem. One of the remedies from the DSDG is to create rounded corners. The alternative suggestion taken from the DSDG is to incorporate mirrors into the ASLA space. Mirrors placed on the corners of corridors and possibly across from a door could alleviate some of the visibility issues in the building. A participant noted that they might have to train the children to look at the mirror when they are coming to the corner, but thought it was possible and would be effective.

Several participants expressed the challenge of creating classroom space that is open and accessible and yet offers some privacy for the students. For example, several of the classrooms have some computer areas, with walls that separate them from the larger classroom. Teachers participating in the meetings expressed the value of these areas for students. But not seeing each other also causes predicaments. The following passages represent some of the feelings about this.

- Woman: And I mean it is also hard because you want space, like a reading corner where kids can go where it is private. But then you also want that line of sight. So it is a tricky thing, especially if you are a new teacher and you are trying to figure out, I have to see what they are doing but I want them to have that opportunity for privacy or something like that. So that is always tricky, not just here but with any kids.

This passage is referring to areas within the classroom setting. It is similar to the concerns expressed earlier. The balance between privacy, giving the students space and maintaining good visual access is a negotiation in each of these scenarios.

Adding a window to existing walls would also increase the visibility into and out of classrooms. Concerns arose about too much visual access to the classrooms when a participant expressed that someone with mal intent could see the children easily and this could endanger the students by exposing them. Again there is a balance, between access for the students and access to the students. The question of what is best for the students is still under debate for the ASLA staff.

Space and proximity

Round tables, circular communal areas and corridors were the ideas put forth for the Space and Proximity DSDG concept. Connection between ASL signers is enhanced by the amount of space they have to see each other's signs. At the ASLA most of the classrooms' seating arrangements are in either circular or figure 8 patterns. Teachers were easily visible for signing. The younger children seemed at ease with the space they inhabited in the classroom. The children move around easily and there is an organic feel in the space when the children are there. Most of the children are interacting, signing and talking. They touch each other and teachers by tapping and other light touches. This is very typical of Deaf Spaces. Touch was very evident in the ASLA building, especially within groups of younger students and between younger students and adults.

While the space and proximity issues for the younger students are important in the ASLA, the issues are most apparent for the older students. Because the younger students have a different style of communication that is much less reliant on words, and because they are learning sign, their needs for signing space is less crucial. One of the participants highlighted the difference between the middle school students and elementary school. This passage refers to a playground that the school borrows from a nearby public elementary school for recess.

- P.I.: And then we have the open and casual seating area. Who wrote that? Did you have an idea like she was having or was it different?

  Man: Yea, similar. Mostly I was thinking about the middle school kids. You know they are at that age where they just want to sit together and chat. And that bench was kind of like that.

  P.I.: You all do have a big age range for your classes and so you have to kind of think about how that works for everyone.

  Man: Like for recess, when I take them over. About half of them just sit on the ground in a circle, talking, because that is what they want to do.

On the day of the observation, several of the ASLA middle school students were sitting in the multi-purpose room in a circle talking. There are approximately ten middle school students total and when they were talking they were, close to each other and at ease. One student stomped his foot on the ground to get the teacher's attention. They could see each other well because of the circle they set up. The flow of a circle is good seating arrangement for ASL communicators because it allows everyone to see each other without straining at a corner. Moreover, it is a collective shape, it invites connection. At the ASLA circular areas were being set up in the middle school classrooms, but they were under renovation at the time of the observation, so a comprehensive look at the space was not possible.

In the Community Analysis map, the group placed a circular bench area in a small section of the building, which they labeled "Library". This suggests that they are thinking about the circular seating as it applies to learning and reading for all ages. They also added a round bench in the Multi-purpose room, which is the room most conducive to connectivity between students.

The circular bench from the SLCC was a well liked idea among the group's responses. The bench allows seating that is distinct from other types of seating in that the circular shape is egalitarian. With everyone sitting on the same surface with similar hierarchy it, like the circle, encourages conversation and connection. However, this is dependent on the agreement that people using the spaces are of the same age, and have similar abilities to communicate in ASL. A compelling question would be if young children will be likely to connect with teen middle school students at the round bench. Or is connection more dependent on communication abilities, age range and a simple need or desire to connect mostly through language. The circular benches will not create instant connection, but it does provide a good space for it to occur.

As with the issues about Sensory Reach the participants' discussions of Space and Proximity

concept bring up how the ASLA must negotiate different needs for space between the age groups and

their ability to communicate in ASL.

Mobility and Proximity

This concept focuses on the ability of a space to give ASL users the ability to move around freely

and with ease. The ASLA site poses challenges in this area. The parking area is directly in front of the

school entrance. Vehicular traffic is high especially before and after school when parents are dropping

off and picking up their children. Outdoor spaces are not easily accessible for any of the children, but

are especially inaccessible for deaf or hard of hearing children. The ASLA does not have outdoor

playground space on the site.

The interior spaces, especially classrooms, are more accessible to mobility at the ASLA which are

very conducive for the children to move around. The children do move around the entire building

quickly and effortlessly. However, because of the long corridors and corners, there is a lot of bumping

into other students and the staff as well. The students and adults seemed accustomed to it, however

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this does become a safety issue especially for deaf and hard of hearing students who rely on visual access to avoid collisions.

The staff and faculty circulate while students are running around and the students tap the staff to get their attention and to talk with them. The staff responds in ASL, and answer questions easily. The staff is very open and responsive to all the students and they may walk with them while talking and signing along the corridors. As they walk, they do what is typical of two people signing and walking, they stop when there is a potential obstacle, and then touch the person that does not see or hear the obstacle and communicate to them to step aside as they then continue the conversation while walking. This is the essence of the mobility and proximity concept. Essentially it is the ease which Deaf people can continuously connect and communicate while they are moving.

The students and adults do this in the ASLA. They make it work despite the spatial limitations, which in itself is very important. It could, however, be easier. Many of the participants' ideas about mirrors and variant colors on walls and in doorways are simple and effective ways to enhance mobility. The space without the enhancements is more accessible for hearing students than deaf, because they can hear beyond the corridor and can chose to avoid or run towards the sound. The deaf children are very mobile in the building, but their safety and ability to move freely is compromised by the lack of visual access throughout the building.

Acoustics and vibration

In the space and proximity section, the situation of a young man stomping his foot on the ground to get the teachers attention came up. He stomped on the ground to get her attention through vibration. This was an example of how deaf, hard of hearing and hearing people use vibration to communicate with each other. Often Deaf or Hard of Hearing may rely on feeling a vibration as an alert. Some of the instruments used as alerts in deaf daily life are vibratory tool such as alarm clocks, timers

and phones. For Hard of Hearing people, acoustics can improve the feedback from hearing aids, or

acoustics can increase one's ability to hear certain sounds by diminishing background sound. As one

participant in the group pointed out, the school needs to accommodate Deaf , hearing and Hard of

Hearing students. The intersection between the Deaf and Hard of Hearing is very apparent in the

acoustics and vibration concept and how the ASLA decided to address these issues.

Carpeting covers most of the floors in the ASLA, except the multi-purpose room, toilet rooms

and a small kitchen.   All the participants felt that the classrooms had good acoustics, but that they could

accommodate some vibration in the classroom. On the map they included an area of wooden flooring

that the teacher could use to incorporate vibration into the classroom.

One of the participants took the concept of vibration and presented her idea for a room

dedicated to encouraging and nurturing students' other senses by incorporating a sensory room. The

following passage is her description of the sensory space.

P.I.: Then we have the sensory room.

Woman: I like that one.

P.I.: Are you the one that did the sensory room?

Woman: Yes. I think that it would be a good idea to encourage the kids to use their other
senses. There is something that we believe that is within their reach and that they can be
helped through the vibration. We can better communicate through the vibration like on a wood
floor. Whether it is following the dance and feeling a rhythm. There could be a parameter of
something with more vibration. I would love for you all to have a room that had vibration
specifically on the floor, where they could feel the vibration.

Man: Like a spring floor?

Woman: Or something that you could also get their attention (Knocks on the wood table).

Woman: That has more vibration than concrete.

Woman: It can help if they are having an activity or help to transmit information. In a form that
we being are able to sense the vibration and just convey information if they are having an

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activity they could use this to help convey it.

This idea takes the DSDG concept of vibration to another level by making incorporating it into a space that can teach the students how to use vibration in their lives. Her idea is rooted in the desire to give the students a special place where they can engage their senses differently and have fun. Music and dancing transfers through vibration, as does various types of play that involves bodies in movement. One of the participants did bring up the concern that too many feet pounding on the ground may be too loud and make things hard to hear. This concern can be mitigated by putting in some sound absorbing material on the walls and with furniture.

Overall, the other participants responded very positively to this idea, and as a group they incorporated an entire room into the floor plan that they called the "therapy room".   Allocating a special space for vibratory and acoustical engagement was an unexpected development and is evidence of how the ASLA participants engaged the DSDG with their own distinct perspective and the needs of the students. It also highlighted the ways the DSDG could engage with students and younger people, in teaching them how to use their surroundings.

Miscellaneous

Several issues came up in the ASLA meetings that were not in the DSDG but were important conversations about how to incorporate certain designs into their school that would benefit their students. Some of the ideas were to have more flexible seating that could move around and accommodate different situations. They were also interested in flexibility of space for a library, such as mobile shelves, which they could store when not in use. The most extensive conversation was about a notification system for the entire school. One of the participants conveyed their concern about the difficulty attracting students' attention when they are in the multi-purpose room or when they are engaged in other activities around the school. The idea is to have lighted signage, either in the form of a

light board with scrolling words or a lighting system similar to fire drill lights, with various colors that would grab the attention of students and simultaneously directing them.

For example, a green light would mean go back to class or a red light would mean "alert, look at teacher". This would give the students and the teachers another mechanism of communication and notification. Integrating the signs into every classroom, the multi-purpose room and the corridors would connect the entire school.

Student Empowerment and Deaf Space

Finally, the participants engaged in a discussion that involved two questions, 'How do the students at the ASLA show empowerment in this space?'; and 'Do you think of this as a Deaf Space?" The purpose for these questions was to gain a deeper understanding of how they view their students' interactions and relationship to the ASLA space. The definition of empowerment was conveyed to the participants: focusing on ways the students display their confidence and show ownership of the space. The following responses convey the participants' answers.

> Woman: I think the kids, well I'm not here all the time. She is here way more than I am, (pointing to the other woman) but I think the kids. I mean my kid runs around like he owns the place.

> Woman: Yea, I mean all the kids feel like they treat it like their home. Which is almost to a detriment in a way, because if they feel like they want to go hang out in the office then they go hang out in the office. But it is like, hey you are not supposed to be in here. Yea, you know.

> Laughing…

> Woman: Yea, I'm trying to have a serious meeting here kids.

> P.I.: So the staff is very accessible.

> Woman: Yes, oh yea.

> P.I.: That is one thing that I've noticed is that the kids go up to everybody that is here.

> Woman: Yea well they also have a big bowl of candy in the office, and so yea.

Woman: Yes we used to before I ate it all.

Woman: I think that, I don't know I mean I think that the way it is set up works pretty well for us. I mean we have a lot of kid stuff posted and we, I mean it's pretty kid friendly. And it allowed us to kind of keep the smaller kids in one area, because they do a lot of small groups and they can just walk across the other side you know they don't have to go four buildings over or whatever. And I mean, I think, little things like writing on the boards, maybe we could put the white boards lower so the kids could write on them easier. Making an area, for group work and things like that.

P.I.: How about with the mixture of Deaf and hearing kids, working together. How do you feel like the kids working together. How does the space flow for all of them? Easily? Or is there…

Woman: I mean there are language pieces, but in terms of space I think it flows just fine. I mean there are issues around people not signing and stuff but that has nothing to do with the spaces.

P.I.: Do you feel like the kids that maybe don't sign as well, do you think the space inhibits those that don't sign as well from signing more?

Woman: I don't think so, at least I have not noticed that.

The last questions asked to participants related to whether they believed that the DSDG would encourage more empowerment in the ASLA. They generally agreed that several of the ideas generated would encourage empowerment. They especially agreed on the circular spaces for student engagement, and having several spaces more accessible for the students.

Participants also agreed that the ASLA was a Deaf Space. They expressed that they did want the space to reflect a Deaf Space even more, with the students using ASL more regularly and design elements more supportive of a visual environment. One of the participants said that an outsider may not see it as a Deaf Space, but that it is a Deaf Space because of how they use it.

Analysis

Community Based Participatory Process

The findings show the ASLA community as cohesive and engaged. The stakeholders participating in the meetings were ASLA staff, parents, community members and faculty. Communication with the Executive Director and the Administrative Director were open and frank, and they were motivated about the prospect of participating in this research. The Student Advisory Council (SAC) was at the heart of the participatory process. Several of the participants in SAC are the founders of the ASLA and have children attending the school presently. They are the men and women who conceptualized the school, organized and promoted it into existence. In the participatory process the founders demonstrated themselves to be the leaders of the school. They asked knowledgeable questions and provided valuable insight to the student population and the ASLA building. The group is respectful of one another and has a friendly rapport together. Other participants that were not from the founders were welcomed into the group, but the friendships and ease was less palpable between them.

At first, the SAC members expressed some hesitation about an outsider coming into their school and advising them about what to do in their building. When they determined that this research process would be advantageous to the ASLA and its future, they decided to participate and immediately focused their organization to scheduling the community meetings. In each meeting, they engaged the material and expressed a full in depth understanding of their students and the school building. The meetings were fruitful and while there was a very limited time that participants were available to meet, dissemination of information, gathering of ideas and decision making was efficient.

Though participation at the meetings achieved the desired results of community interaction and input, there was an inadequacy of Deaf or Hard of Hearing attendees at the meetings. The

administration, faculty and staff that attended most frequently were all hearing as was every SAC

member who attended meetings. One Deaf woman participated in the Visual Focus Group, but did not

attend the Community Analysis. The lack of Deaf voices at the table means that many of the decisions

made at the meeting were *for* deaf and hard of hearing, not *by* the Deaf and Hard of Hearing. It was not

a deliberate exclusion, this was a volunteer process and it is impossible to predict who responds to

invitations. However, the smaller group reflects the demographic of the larger population. Most

especially the decision making body of the school. This outcome is unfortunate and skews the findings

towards a hearing perspective of the needs of Deaf Space.

During observations and subsequent contact with administration, teachers, staff, and parents,

all persons were hearing. Everyone was fluent in ASL and was quick to switch from speaking to signing,

when there was a person, be it a student or adult in the room that relied on it. They used ASL when

they were in hallways, communicating with each other or students. The adults did use ASL alongside

spoken English often, but many of the hearing students did not.

The community meetings were conducted in spoken English, not ASL. One of the participants

interpreted into ASL for the Deaf woman that attended, while others were talking.   Since most of the

participants in the meetings were hearing, everyone relied on speaking instead of ASL. Audism patterns,

such as not having Deaf or Hard of Hearing person at the table and the reliance on spoken language

instead of signing, were evident despite efforts made to achieve an inclusive and Deaf centered

environment.

The distinction that the ASLA is a bilingual academy, not a "Deaf School" is essential to

understanding the dynamics at the school. They do expect each student to use ASL most of the time,

but this is difficult when the predominant language used by students and adults in the school is spoken

English rather than signed ASL. And when the hearing students are not aware of audism and how their

speaking privilege overtakes students reliant on ASL, then ASL becomes the "second language" instead

of the first.

Many of the hearing children at the ASLA are not from Deaf families. There is a tenuous balance

the ASLA is trying to maintain between having a majority of students who are part of the Deaf

community and adhering to state requirements that they enroll new students through a lottery system.

The ASLA does not have choice in the students who attend. While this opens up enrollment to many

students, it appears contrary to the school's mission to educate deaf and hearing within a Deaf

bicultural bilingual context.

ASLA is trying to make connections to the larger New Mexico Deaf Community by allowing space

for meetings and gatherings at the ASLA building, and ASL classes through the Deaf Community Center

on a weekly basis. One of the ASLA's priorities for the addition of the new wing is that it will give the

ASLA more space for community outreach. They recently added a community outreach coordinator,

who is hearing to organize these efforts. The hiring of an outreach coordinator is admirable, but it may

be a missed opportunity to hire a Deaf, Hard of Hearing or Bicultural Deaf hearing person from the Deaf

community for that position.

Making sure that the Deaf Cultural model of education is incorporated into the school's

curriculum is essential to keeping the school a Deaf centered environment. All children regardless of

their auditory abilities can benefit from understanding the importance of Deaf Culture and the

significant benefits it gives to all people. The ASLA understands this, and they are making efforts to

make their community a part of the larger Deaf community. They have connections to Deaf community

organizations but there is only one Deaf person on their governing board. This defies the efforts made

by the Deaf community to gain decision making rights as it pertains to issues that affect the Deaf

community. It is not enough to create community partnerships. While important, the partnerships

must result in deaf, hard of hearing and bicultural hearing people to have more a powerful role within the ASLA. This will substantially increase the possibilities of the Deaf community to become involved in the ASLA and support their efforts.

DSDG

The findings reflect that the participants did embrace many aspects of the DSDG for their combined Deaf and hearing space. During the coding many of the DSDG aspects discussed in the meetings showed considerable overlap. This is an affirmation that the guidelines are holistic, and they intertwine constantly. For example, the Sensory Reach and Lighting showed overlap when there were discussions about interior windows since it would improve both needs. Another interesting development was how the DSDG informed new solutions not directly proposed in the DSDG, such as the idea of the Sensory Room, which concentrated on the vibrations and sensations, and the Safety lighting system which is reliant on lighting and line of sight issues. This showed the ASLA participants' ability to think outside the box and take the concepts of the DSDG and apply them to their own specific needs.

During the analysis of DSDG, questions arose about whether all the DSDG elements were appropriate for a primary school. The ASLA participants did not agree with a DSDG injunction that they reduce the wall art. It also arose when adding windows to the interior walls may be too distracting for elementary school children. They felt this added to the elementary school feel of their building contrary to DSDG which recommends that the walls be relatively free from distracting elements.

Throughout the participatory process evaluations of the DSDG focused on how modifying the building would strengthen connections and communication between the occupiers. Modifications to the building concentrated on the physical, but they are only successful when reinforcement of the already strong connections at the ASLA is evident. The consistent response from the Visual Analysis question of, "What do you like about the ASLA building?" was the connectedness between the people.

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The perspective of increasing connections was for all the students regardless of their abilities. Most of the motives for incorporating DSDG into all the spaces are to open up sight so that connecting through ASL communication would become easier.

ASLA Empowerment and Deaf Space

At the end of the Community Analysis, participants were asked whether they believed that the ASLA space was a Deaf Space. Their answer was that the space is a Deaf Space because they have made it a student centered space and their students are deaf. Participants pointed to the students running up and down the hallways, approaching parents and teachers and other adults in the building signing and talking to them. The ASLA is a student centered space, and when the participants answered questions about empowerment they were candid in their answers, saying that for them empowerment was shown through the students' expressions of belonging in the school. The students move about the building and engage with all adults. They sit in circles signing to each other. They know this is their school and they are comfortable in it.

Student empowerment is evident, and it could be enhanced if the level of physical safety students have in the space was higher. In this space, the students have restricted mobility because of the lack of visibility along the corridors and corners. They collide and this can be hurtful. The outside area can also pose safety concerns with the traffic and young children of all physical abilities moving about. This reduces empowerment of all children in the space. And while the students and staff have grown accustomed to this spatial situation, it is important to adjust the space for the safety of all children. The ASLA building poses such challenges in this area, that it is unlikely any DSDG modifications would alleviate issues completely. However, modifications can alleviate some issues until a new larger space is available.

This space is a Deaf Space despite the issues with the building itself. The students have made it so. The DSDG implementations will likely improve connectivity in the space. According to the criteria of a Deaf Space this is one. The staff, faculty, administration and support community are committed to advancing the lives of students in this school. The goals of the DSDG of encouraging communal and connectedness are apparent in the ASLA. And the articulation of hearing and Deaf is evident when students are sitting in a circle signing, and there is no perceivable difference of deafness or hearing.

Recommendations

The following are recommendations derived from the analysis of the findings. The recommendations are separated into four sections, Current ASLA building, future facilities, Deaf community perspectives and community governance board.

Current ASLA building

1. Safety:

   The current building is in need of modifications as stated above. The first recommendation is to implement all aspects of the DSDG that will enhance student safety first. Non-breakable mirrors and the painting along the walls are an inexpensive and important addition to the safety and student empowerment in the space. Adding extra protection in the parking area and bus drop off area are of high importance.

2. Student Spaces:

   Creating spaces for the middle school students to gather is the second recommendation. The collective analysis map points out two areas where this is possible. It is recommended that the ASLA implement this as soon as possible to send a message to the middle school students that their social space is important to the ASLA administration. This can provide students with a sense of ownership in the ASLA facility and a space to cultivate relationships and self awareness.

Future Facilities:

1. The ASLA will need to relocate to a larger building in the future as their enrollment continues to grow. Recommendations for a new school are to have a space that puts the safety and spatial needs of their students at the forefront. The ASLA charter has very

specific goals, and the current space is not in alignment with their goals. Currently, their

space may be a detriment to their stated goals of providing the optimal learning

environment for their students because of tight physical space and safety issues. Any

future space will need to provide the basic functions of a Deaf Space for all students to

most effectively use visual language and learning in a visually centered environment.

The ASLA can use the Public Schools Facility Authority's (PSFA) guidelines for Special

Education Classrooms and update their FMP Educational Specification to appeal to the

state for financial assistance in finding an adequate facility for their unique demographic.

While charter schools fall under different regulations, if the ASLA can prove their

demographic of students is in need of extra and redesigned space to excel to their fullest

potential they may be able to acquire additional funds from the Public Schools Capital

Outlay Council (PSCOC). The ASLA may be able to obtain lease assistance from PSCOC if

they enter into a lease agreement with an APS district facility. The possibility of obtaining

more funding is supported by the successes of the ASLA in its charter history.

2. A future facility can be retrofitted to incorporate the DSDG agreed upon by the ASLA. A

further recommendation would be to engage in a similar community based process, with

members of the ASLA community and larger Deaf community, as used in this research to

create optimal visually centered space in a new facility. Ideally the process should be

conducted prior to students occupying the building, so they can immediately experience a

space designed for them.

Deaf Community Perspectives

1. Because of the lack of Deaf perspectives, before any of the DSDG implementations are

implemented , it is recommended that the SAC and ASLA Administration show the

design decisions to Deaf members of the Board of Directors for input. This would

ensure that the decisions made by the hearing participants have a Deaf perspective

before they are finalized. The school could also include their deaf and hard of hearing

students in the final decision making process. Limitations on this research prevented

student input, however the ASLA staff can include their students into the discussion.

This will create a sense of agency among the students in their space and will provide the

full committee with a Deaf perspective.

2. The ASLA could reach deaf people by volunteering with organized Deaf groups. For

example, Deaf church or senior citizen groups are actively engaged social congregations.

They often organize help for their members with rides to and from church or assistance

with everyday needs such as making phone calls or filling out paperwork, which are

important supports that many Deaf or Hard of Hearing people need. Talking to or

volunteering with a Deaf group gives ASLA representatives the opportunity to meet Deaf

people and interact.   It will give the ASLA outreach coordinators opportunities to ask

opinions of what the Deaf community needs to be more involved with the ASLA.

The best strategy is for the ASLA to become part of the very tight knit Deaf community

by reaching out to deaf individuals face to face. Informal casual communications are

common and very important in the Deaf community. Previous to telecommunication

modernization technology, such as text messaging and email, communication over

telephones for deaf and hard of hearing was rather cumbersome and face to face

communication was usually preferred. This continues even with the changes in

telecommunications. Nonetheless, taking advantage of the internet and social

networking resources that link Deaf communities could be very beneficial in creating

community networks. Having time to make contact with Deaf community members will

develop more relationships and may help to grow a sense of association within all groups.

Community Governance Board

1. For the ASLA to succeed at creating an engaged and successful articulated deaf, hard of hearing and hearing space it is crucial that the decision making entities include deaf and hard of hearing perspectives throughout all levels. It is recommended that the board increase the requirement of only one deaf board member. The following guidelines are recommended to achieve this outcome:

    a. The ASLA Board of Directors will consist of 60% or more participants from deaf, hard of hearing or Coda demographics. Of the 60%, at least 50% or more will be deaf or hard of hearing. Should the Board of Directors not meet this goal, they can invite temporary participants from the above said groups to advise on all decisions.

    b. The Student Advisory Council will consist of no less than 60% participation from deaf, hard of hearing or Coda. Of the 60%, at least 50% or more will be deaf or hard of hearing. Should the SAC not meet this goal, they can invite temporary participants from the above said groups to advise on all decisions.

    c. Efforts will be made to hire a deaf or hard of hearing individual into administrative positions within the ASLA. In particular, the ASLA will hire a Deaf community representative to the Community Engagement Center. The ASLA will have 40% administration level positions filled by deaf and hard of hearing individuals prior to the opening of a new facility.

Each of these recommendations are intended to increase student safety, provide avenues for the ASLA to obtain a new more adequate facility for their school and deepen ties to the Deaf community in Albuquerque.

Conclusion

The CPBR conducted in this thesis centered on examining how deaf, hard of hearing and hearing children could successfully articulate a Deaf Space at the ASLA. Conducting this research through the lens of a Community Based Participatory Research protocol, provided an avenue for examination of the DSDG though a lens not customarily sought-that of a Deaf centered space with deaf, hearing, hard of hearing all in one cohesive space. The uniqueness of the ASLA is the mixture of students with various auditory characteristics. They are part of a new movement of Deaf education.

The continued articulation and creation of combined deaf and hearing spaces is social movement onto itself. As Deaf Spaces begin to move beyond the confines their campuses and homes, they relay Deaf Cultural values and world views. This research proved that concepts put forth the in the DSDG can create connections across abilities and create visually centered spaces for everyone.

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