Space Matters:
Creating an Environment for Cultural Inclusivity

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Abstract

Space matters when it comes to creating an effective learning environment for cultural inclusivity. Several kinds of learning spaces are explored in this paper. The first space is the physical learning space that teachers and students typically find themselves surrounded by everyday. This physical learning space is going through a dramatic transition as pedagogical changes and globalization take place in classrooms. The next space is a new type of space that has been growing over the past decade. It is a virtual learning space. There are several ways that learning is being delivered in these virtual spaces from online classrooms to social networks to virtual worlds. Each of these spaces needs to aware of and sensitive to the cultural diversity that is taking place inside of these environments. The best learning environment is when both the physical and virtual come together into a learning space called blended learning. The blended learning environment can draw from the strengths of both spaces enable teachers and students to collaborate and learn while being sensitive to cultural inclusivity.

Introduction

The learning space in today's classroom is starting to evolve on several different levels. The most dominate environment is the "sage on the stage" with the teacher at the front of the classroom disseminating knowledge, while all the "little sponges", the students soaking up the information still persist, however there is has been a revolution going on over the past decade.

Classrooms are starting to look and feel a little different. Technology is the first change one notices in the modern classroom, but the technology is still at the front of the room mostly under the control of the teacher. Often times there are computer stations dispersed throughout the classroom, mostly pushed up against the wall, because that is where the outlets are located. So the location of the technology is pushing the pedagogy, when it should really be the other way around.

Another revolution in the learning environment is that students are not coming to the classroom at all anymore. They are opting to take classes in the comfortable space of their own homes via the Internet. This introduces a whole new type of learning space, putting the student at the center of the learning. However, there are issues, like cultural backgrounds, values, needs and learning styles that need to be considered when designing these environments.

Flexibility in the various modes of delivering content is where education appears to be going, but educators need to take into account cultural variable, being sensitive to specific learning needs, learning preferences and learning styles. Another area of concern is ensuring access for a diverse population of students. Educators need to consider both localization and globalization and be able to accommodate student's cultures, cognitive style and personal situations when creating learning environments.

This paper is going to look at the research and some of the trends that are taking place in and outside of the classroom, in regard to designing learning spaces. While discussing how educators and instructional designers can effectively use educational resource to create learning environments that are culturally inclusive and academically challenging.

Physical Classroom Space Design

Learning environments come in all shapes and sizes from large lecture halls holding hundreds of students to small intimate classrooms housing less than fifteen students. Most classrooms whether big or small are typically designed for the teacher to stand at the front of the room, while the students are in neat rows of desk or sitting at tables facing the teacher. If the teacher decides to change his or her teaching style, then a mild form of chaos usually ensues with students rearrange furniture and trying to reposition for the optimum vantage point. What if there was no chaos and the learning environment was allowed to flow from one type of pedagogy to another? The thought being that a teacher's pedagogy or philosophy in teaching should drive the design of the learning space, not the other way around.

Next throw into the mix the cultural diversity that exists in many of today's classrooms. How to go about getting all of the various cultural groups into engaging with the content and the social context without belittling them or forcing them to conform to the dominant culture? Can this be accomplished through the design of the physical space and the flow of learning?

More schools and college campuses are starting to look to innovative ways of creating physical learning environments. This is being driven by several factors, one technology is encroaching upon the halls of learning, whether educator like it or not, and the learning environments are starting to reflect this change. Another factor is teachers are starting to transform from a purely lecture format to one of a facilitator of learning. This allows for a student centered-learning model with collaboration of peers and self-exploration of content. Additional factors to take into consideration is that the students and the culture from which they come are driving the look and feel of the learning space. Students all over campuses are using technology; from laptops to cell phones to access content and communicate with each other. With these factors in mind, educational institutions need to adapt to a new type of learning environment on school campuses.

In looking around campus it is important to take some cues from the informal spaces students are using to learn. Check out students in libraries, unions,

and cafes, in outdoor spaces or even in the hallways, these ideas can be translated to into classroom, labs and other formal learning environments.

Phyllis Grummon (2009) recently wrote an article on *Best Practices in Learning Space Design: Engaging Users*. She believes that the users of the space, this being faculty and students should be the key drivers in designing the learning environment. She uses research methods from social scientist, particularly anthropologist to help identify what faculty and students desire in a learning space. Her methods include the following steps:

- Students send digital images of the space and describe why the space is conductive to learning.
- Visit the place throughout the time of day and count the number of people using the space and identify how the space is being used.
- Spend a few hours in the public spots on campus where students and faculty gather taking note on how the space is used.
- Gather information from a Twitter feed or a FaceBook page on how students use particular spaces.

From this type of data collection she finds that flexibility is the most desirable feature of learning spaces on campus. Flexibility is usually associated with the ability to accommodate multiple learning styles and might have an impact upon bring cultural groups together to communicate. If she included a diverse population of students and carefully listens to the various cultural groups, then her results would become beneficial in helping to design space, not just for the dominate culture, but for a variety of groups represented on campus.

Let's take a closer look at both informal and formal learning space and how to create them in order to draw both students and faculty to use them not only for learning spaces, but also for areas of collaboration and socialization, which could have an effect upon cultural inclusivity. The information below is based upon a tutorial written by Larry MacPhee for Educause Quarterly in 2009.

Display screens and kiosks inside of campus building are a way to entice students to enter into the space. The use of touch screens or mouse only kiosks can

engage students to interact with the environment. The key to the success of these displays is that will need to up dated on a regular basis. These displays could have options to change the language to engage all not only the English language students.

Public Access Terminals allow students to access information while on the move. These terminals are placed in high traffic areas, such as the student union or lobbies of major buildings so students can gain public access to information. The terminals are for students to check email, engage in social networking or to find directions, they are not for time-consuming work. To discourage this type of interaction, the stations would be at a standing level with no chairs in the area.

Transition Spaces are located all over campus and don't necessitate the need for high technology. These are spaces where student sit in the hallways or under the stairs. They can be converted to into spaces that are usable and comfortable. With a few additions of benches, outlets and lighting, a space that was dreary can now become an attractive space for learning, socializing and collaborating.

Indoor/Outdoor Spaces are located throughout campus on lawns, open stairs, fountains, or anywhere students find a good wireless connection with a view of sunshine. In the Arizona climate, these spaces can be more enticing if there are shade trees and water features nearby. In these spaces, a teacher can hold class or conduct office hours or students can gather for group work.

Dining Spaces where food and study come together. The old school philosophy was to ban food and drink from the study areas. Now there are alternatives all over school campuses for a variety of foods. By making the classroom a dining space, a cultural divide can be conquered through the sharing of international and local meals.

Collaborative Spaces are areas where students can gather to work together on project, solve problems or tutor each other. Typically these spaces are enclosed behind glass to help keep down the noise and interruptions. These spaces can also double as *Study Spaces* where students need to retreat for some quiet and solitude to concentrate on studying. Natural light, comfortable furniture and a good view are not a requirement of this space, but the ones with these features are more popular with students.

The *Multipurpose Space* is becoming a solution for many libraries. The ability to move walls, furniture and technology has become an asset for many open learning environments. Carpeting and soundproof panels can help this space to become a transitional zone for areas of collaboration or solitude. One interesting innovation is a product called Idea Paint. This product is painted on a wall and students are able to write on the walls with washable markers.

Let's transition over to the formal spaces and talk about the traditional classroom setting. As stated in the introduction, most classrooms are set up to accommodate the teacher at the front of the room with the students all facing in his or her direction. Fortunately, or not, this is the style that most cultures use around the world, so when student gather together for class they all are comfortable with this space arrangement. However, pedagogy is starting to drive a new type of learning environment.

Teachers are slowly making the transition from pure lecture methods to group work, student led presentations and content exploration. This student-centered approach needs a learning environment that allows the teacher and the students to flow more freely around the classroom. How can this task be accomplished and work toward cultural inclusivity?

Classroom, Teaching Labs, Mobile Computer Labs and Open Labs are the formal spaces that are going to be considered in this section. The *Traditional Classroom* has just begun on the road to change. Many of the classrooms in today's schools look very similar to the classroom of 50 to 75 years ago with the exception of some technology sprinkled around the room. Yet technology is not the only avenue to change within the classroom. Technology can be added to assist in content delivery, but technology should not drive the pedagogy of the course!

Learning spaces in the traditional classrooms should be rooms full of furniture and technology that can change and adapt to needs of the teacher and students. This may include workstations with locking wheels that can come together as groups or be split apart for individual work. The multimedia lectern, which houses all of the technology for presentations, should be mobile and not tied

strictly to the front of the room. A remote should be available for the teacher or students to control the multimedia from anywhere in the room.

Another controversial issue with many teachers is the availability of wireless Internet in the classroom. Some teachers do not want students to be distracted by "surfing" the Internet during class; therefore they want the wireless signal to be disconnected in the classrooms. This is a debate that has yet to be resolved. Teachers and student need to meet on middle ground with this issue for it to be truly resolved.

Teaching Labs are where students and faculty can meet to work on a particular project. The labs are a place where all students have access to the same type of computer system and software. The lab is a great equalizer among socioeconomic groups as it levels the playing field for all students in terms of access to technology. The lab becomes a learner-centered environment where students can engage with the content and create products proving they have conquered the learning objectives of the lesson.

Mobile Computer Labs can offer the same benefits of teaching labs without the teacher or students moving from the traditional classroom. These "labs" are carts containing laptops, a network printer and a wireless access point. These labs might be one way to solve the issues of teachers not want students to "surf" the Internet during lectures. Teachers only allow laptops from the mobile computer lab to be used during class time. They can turn on the wireless access point and distribute the laptops when needed for instruction. This will also level the playing field for those students who do not have their own laptop to bring to class.

Open Labs are spaces where students can go on campus to access computers and software that might not be available to them on their personal computers. These open labs also have support people to help students with technology issues or even have times when tutors are available to help with them with content questions. Usually student workers who are overseen by the school's staff run these spaces. This is another opportunity to break down cultural barriers. By training and empowering students to reach out and assist others can be a powerful way to bring a mixture of cultures together.

The traditional campus spaces are constantly evolving; currently technology is driving this environmental change, however we cannot let the tail wag the dog. The users of the space, this being the teachers and the student are the major stakeholders and should be asked to participate in the discussion of how the learning space is designed. The research shows that the major issue with these stakeholders in designing new learning spaces is flexibility.

Virtual Classroom Space Design

Designing an environment for an online course is very different from designing the layout of a physical classroom, but it is just as important to form a learning space where students are free to flow with the learning. Much like a physical environment students should have a positive sensation upon entering the online course. The course should be visually appealing and the student should have a clear understanding of how to navigate throughout the content.

The next step will be for the designers of the "space" to ensure that the content and learning activities take into account the learners' needs, the learners' perspective and the incorporation of cultural backgrounds, regardless of subject content. Scheel and Branch (1993) call this kind of design culturally pluralistic instruction. Many of the instructional design models include cognitive, social and pedagogical issues, but few address the need for cultural contextuality.

Henderson (1996) has presented an opinion that the design of online environments does not exist outside of a consideration of culture, thus stating that no design can be culturally neutral. Henderson's (1994) work has identified three identifiable approaches with respect to the inclusion of culture with learning and pedagogy. They include:

- Use an *inclusive or perspective approach*, which brings in the social, cultural and historical perspective of minority group, without challenging the dominant culture, making the attempt cosmetic.
- Use the *inverted curriculum approach*, which attempts to design a space from a minority perspective without providing learners with

any educational valid experiences while excluding the learners from the mainstream culture.

- Use the *culturally one-dimensional approach*, which excludes or denies any type of cultural diversity, assuming that all educational experiences are the same for everyone.

Henderson goes on to define a multiple cultural model when designing online environments. This approach endorses Vygotsky's multiple cultural realities or zones of development theory. The approach stresses that the learning environment should enable students to interact with the content by: 1) reflecting upon the multicultural realities of society, 2) including multiple cultural ways of learning and teaching and 3) promote equity of learning outcomes.

In 2000, two Australia researchers, McLoughlin and Oliver developed and advocated several design principles for culturally inclusive curriculum for their indigenous students. Below are the principles and how they can be applied to the design of an online learning space:

1. *Adopt an epistemology that is consistent with and support of constructivist learning and multiple perspectives.* For this principle use the "Funds of Knowledge", allowing minority groups to bring to the learning their own knowledge, prior experience and cultural ways of knowing to the learning activities, therefore developing ownership and pride in creating their own unique knowledge.
2. *Design authentic learning activities.* Adult learning theory shows that a purely cognitive based approach without application has limited success. Therefore, incorporate interaction-learning activities with application and meaning to help minority students to succeed in the contemporary world.
3. *Create flexible task and tools for knowledge sharing.* Build a space where students can share and construct knowledge while building a community of learners. This can easily be done with social networks, blogs and discussion boards.

4. *Ensure different forms of support, within and outside of the community.* Use the principles from a 'community of practice' where beginners develop skills and competences from interaction with teachers, tutors and peers. Design the course space to use Web 2.0 technologies enabling students various forms of interaction and support.
5. *Establish flexible and responsive student roles and responsibilities.* Understand that this is a new learning environment for many students. Use clear communication for instructions and expectations. Do not make the students guess where to go next or what is to be accomplished in order to succeed in the course.
6. *Provide communication tools and social interaction for learners to co-construct knowledge.* When creating the learning space give the learner multiple ways to access the teacher, tutors and peers. Creating an informal meeting place in the online environment is the equivalent of students talking before and after class or meeting for coffee between class meetings. This creates a space for students to form a social community.
7. *Create tasks for self-direction, ownership and collaboration.* Self-reflection is one of the tasks students can do in an online environment to help with self-direction. Journals or blogs also helps students with ownership and can enable them to make decisions about their learning direction. In addition, these entries can be published to the Internet for collaboration conversations or peer reviews.
8. *Ensure flexible tutoring and mentoring roles that are responsive to learner needs.* Studies show that interaction with the teacher and peers within the online environment perpetuates students achieving success in the course. Build into the learning space various ways for students to engage in conversation with the teacher and their peers. It is also important for the teacher to be transparent about how quickly students will receive feedback or how often they will be available to chat in the online environment.
9. *Create access to varied resources to ensure multiple perspectives.* This is when the teacher moves away from being the only source of posting materials and

allows students to add resources that reflect upon their cultural perspective. This permits students to share and integrate their cultural knowledge as well as be recognized by their peers for sharing.

10. *Provide flexibility in learning goals, outcomes and modes of assessment.* This is the hardest principle for most teachers to swallow. Offer a foundation of outcomes with choices for students to make in the direction of self-knowledge to achieve their own learning need and levels of performance.

When designing a culturally inclusive online learning space one needs to be sensitive to cultural differences and appreciate the various ways in which culture influences learning. Multiple methods need to be incorporated into the design of the learning space and the space needs to be validated by different cultural groups to ensure authenticity.

Another avenue to explore when designing online environments are virtual worlds. There is an entire universe of opportunities awaiting students inside of this imaginary space. There are spaces that have already been created for students to explore and there are open spaces for teachers and students to create their own unique environment. The most popular virtual world is Second Life, but there are others being used for educational purposes.

One research study conducted over a six-year time period gives insight into the challenges and successes of using a 3D virtual environment with students from 20 different countries. The 3D virtual world was developed Hypermedia Open Center (HOC) of Politecnico di Milano and various partners. There were four projects developed that guide students though these learning environment: 1) Virtual Leonardo, 2) Dead Sea Scrolls and Hebrew Culture, 3) Medieval History of Lombardy, Italy and 4) the Social Value of Sports (Di Blas, Paolini, Poggo & Torrebruno, 2008).

Through the six years of experience with the virtual world, they found some key ingredients for making the learning environment successful. They are: 1) create a well-structured format, 2) use high quality, culturally challenging contents, 3) allow the students to share and compare, and 4) constant support, monitoring and adjustment of the environment and students. On the other side, there were the

challenges including: 1) the rigidity of the school systems, 2) access to technological equipment, 3) low computer literacy among the students and 4) chance, basically technical difficulty and human error when interacting between various school sites.

This type of study that spanned 20 counties makes a point that virtual worlds are one avenue to making the connection between space and cultural inclusivity. Traveling inside of a virtual world allows students to explore other cultures while letting them create their own cultural experience to share with others.

Blended Classroom Space Design

Bringing together both the physical and virtual learning environments may be the best solution when designing classrooms for today's students. The virtual classroom historically has been viewed as a way for the non-traditional students who cannot travel to a campus to access content, because they are bound by time and space. This scenario is rapidly changing and more main campus students are turning to the virtual learning space as a way to access content at their own time and place. This kind of situation opens up a new door for blended learning environments.

Blended learning is when students substitute some of their time in the physical learning environment with a virtual learning environment. Students who typically attend class three days a week in a physical classroom would substitute one or two of those class meetings for time in a virtual classroom environment. This is really the best of both worlds allowing physical interaction between teacher and students with the integration of a technology-learning environment.

Both of these learning environments have been discussed in the prior sections, so here is a theoretical look at how these two environments can come together and work for the good of both teacher and student. David Thornburg has an idea for learning called the primordial metaphor (Thornburg, 2007). There are four elements to his metaphor that translate well to the blended learning environment. The first element of the metaphor is the campfire. This is where the storyteller or the teacher shares the wisdom or the content of the course. This is a one-to-many relationship that is well suited for the physical learning environment.

However, there are methods to sharing stories through the virtual environment, one of these would be the medium of digital storytelling. It would be great if interactivity could be incorporated into this method allowing students to interact with the story or branching off the storyline or even adding to the story. There is a Web 2.0 tool called VoiceThread that is perfect for storytelling and allows others to add to the story (www.voicethread.com).

The next element is the watering hole. At the watering hole, students and perhaps the teacher gather to exchange thoughts on the content, news, local discoveries or even gossip. This can happen in both the physical or virtual learning environment. Students can talk before or after in class in informal learning spaces provided around the classroom or on campus. The virtual learning space can provide discussion boards for students to talk in an asynchronous fashion or a live online chat room can be accessed for synchronous discussions. The watering hole is a many-to-many relationship for collaborative type of learning.

The cave is the next element. In the cave, the student retreats to reflect upon the content and ideas gathered at both the campfire and the watering hole. This reflection time can be accomplished in both the physical and virtual learning spaces combined. Reflections can be completed via a computer sitting in an informal learning space, and then uploaded to the virtual learning space for the teacher and peers to read.

The last element is perhaps the most important element, which combines all of the others…Life. This is when the student takes the learning and applies it to the real world. Of course, this is more than likely played out in a physical environment, but do not rule out the virtual one, as more "real" transactions are starting to happen online. Rarely, do school environments build simulations for students to put into practice the lessons they learn. This is a key element of the formal learning environment that is missing in the current educational system.

James Gee talks about the use of gaming to teach students in his book, Good Video Games and Good Learning (2007). He makes a point that ties in Thornburg's metaphor and the exclusion of the last element. Gee points out that when students play a game, they rarely read the manual, because it is so poorly written, very

complicated, or not written from the situated context. He goes on to say that the traditional schools are all about the manual and not about playing the game. Who wants to read a complicated, boring manual not adapted to the situation and then not given an opportunity to apply what they have learned? Not many students, maybe this is the reason that so many of them don't like going to school and the dropout rate is high.

The question that is posed to today's educators and instructional designers is: How can the blended learning environment be built to include all the elements of Thornburg's metaphor and make it an enjoyable space that students want to come and learn?

Here is a suggestion, when building a learning space take into consideration the pedagogy of inquiry-based learning, so that the furniture can move easily around the room and the teacher can flow among the students. The teacher can still be the storyteller relaying knowledge to students, but create an environment that allows students to engage in the learning process. Next add into the pedagogy a learning space that allows students to mingle and talk with each other. This can be created through informal learning spaces placed throughout campus or within a virtual environment on discussion boards or social networking sites. Then students need a quiet space to reflect about the learning; again this can be a blended solution in either the physical or virtual environments. Finally and most importantly, a learning space needs to be created to incorporate the learning into spaces where students can practice the learning. This creates an opportunity for teachers to create a space that is culturally inclusive, academically changeling and rewarding for the student.

This is the mission that needs to be accomplished for students to learn and thrive in our ever-changing world. To use a quote from the movie, Field of Dreams, "If you build it, they will come." Learning spaces need to be built for the purpose of creative and innovative learning where all students are engaged in the content and with each other. If built for this purpose, then they will come and we will find that space matters!

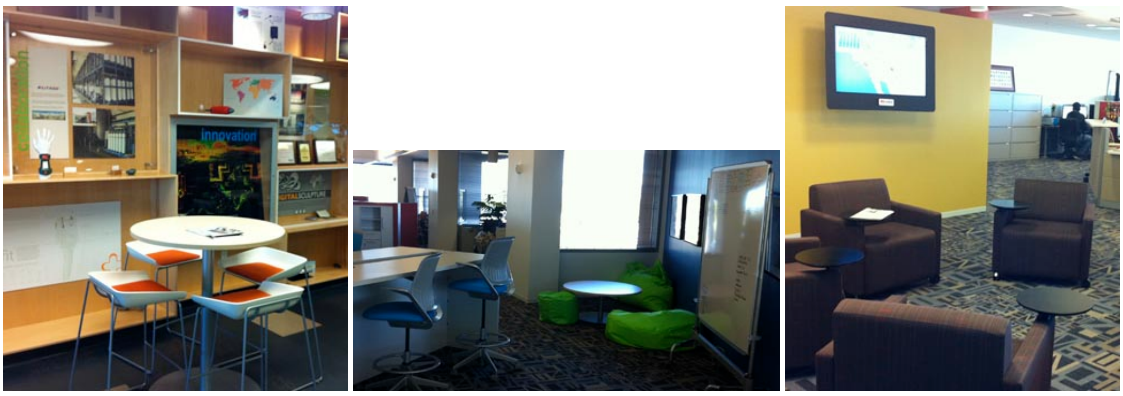
Conclusion

There once was an Italian teacher and psychologist by the name of Loris Malaguzzi who developed the Reggio Emilia approach to learning (2010). The view of this approach is that children learn through interactions. The first teachers are the adults in their lives, then their peers are the second teacher, and finally, the third teacher is the environment. The environment in which students are placed has a profound effective upon their learning. When it comes to designing learning spaces many considerations need to taken into mind. This paper has attempted to open up your imagination and present innovations of possible alternatives to the traditional learning spaces currently in use at our schools and learning institutions.

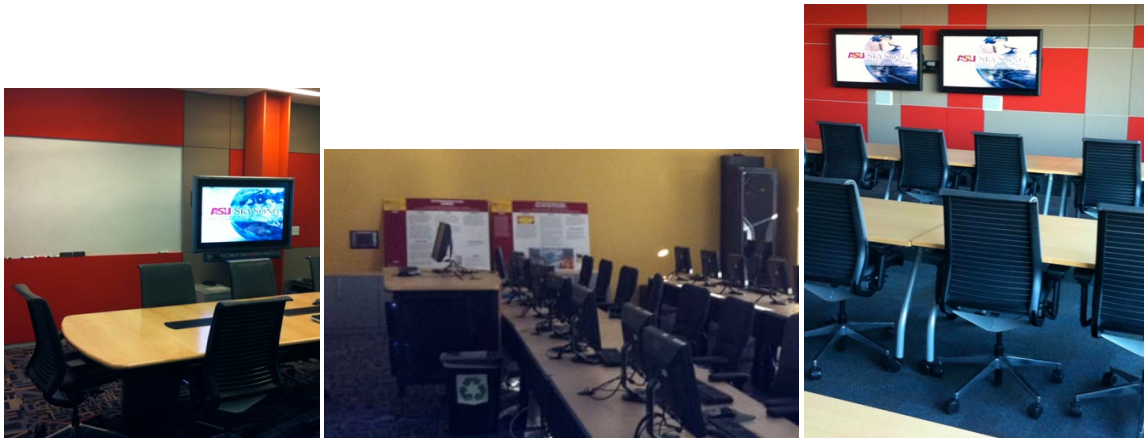
Teachers and students need to be released from the traditional desk at the front of the classroom and encouraged to explore new settings for teaching and learning. There needs to be a conversation among the teachers and students of the learning spaces which allows them to chose what they want to do and illuminate their individual learning strengths taking into account multiple learning styles and cultural differences. The classroom needs to become a safe haven where students can be transported to far away places and landscapes while still being connected to their local communities.

As technology advances at an exponential rate, it needs to be used as a vehicle to expose students to new innovative ideas in ground breaking learning spaces. Keeping in mind that we are training students today for a world of tomorrow that we can only image. Therefore, we cannot let today's reality limit the imagination of tomorrow's possibilities.

Learning spaces are all around us, from the traditional to the virtual to a mixture of both. We have informal learning spaces, public arenas for collaborative learning, social networking spaces and even virtual spaces that take us into cyberspace. When designing and moving around these spaces we must sensitive to the cultural diversity forming inside of these environments. Regardless of the teachers and students sociocultural background, all must perceive that the learning space is a place where they can be safe and free to express themselves and learn in a way that fits them as individuals while respecting others differences.



Informal Learning Spaces at ASU SkySong in Scottsdale, Arizona



Formal Learning Spaces at ASU Skysong in Scottsdale Arizona

Virtual Space in Second Life – University of Arizona Island

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