

# **Contemplating space syntax and leadership in daycare settings**

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## ABSTRACT

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Space is an element in almost every organization that has not been observed nor studied in depth. Therefore, recent studies are taking many perspectives on space and examining its importance within the organization. In addition, the relation among space and leadership has been investigated. The intention is to show that the phenomenon of space has its importance in creating social relations in an organization, i.e. creates structure.

Mixed methods of qualitative and quantitative approaches have been used to explore space in correlation to leadership in an organization as main focuses in the study.

It was evident from the results that the kindergarten utilized the space in its greatest ability and the leadership has grown in a suitable style for the environment. An axial map and a visibility graph, respectively, showed the least and the most segregated spaces, and in comparison to structure, culture, and leadership, they showed the importance of utilizing space in accordance to the previously mentioned elements. Considering space as a social utility, a need to contribute to this notion was needed, and an investigation was undertaken. (It is a new leap in connecting the two phenomena of space and leadership through the prism of social relations.) However, there was no strong connection among space and relational leadership.

The denouement of this study presents the importance of space as a decisive factor for structure and leadership in an organization.

Key words: social construct, space syntax, leadership, physical space, relational leadership

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# 1 INTRODUCTION

“Space (that) creates the special relation between function and social meaning in buildings. The ordering of space in buildings is really about the ordering of relations between people” Hillier and Hanson (1984, p.2).

The present research is a case study of an organization taking up a holistic view with a spotlight on the physical space and its connection to structure and leadership. Furthermore, the importance of space as a segment of an organization is emphasized and correlated with the social creation of relations between people. Another important issue is the perspective of space and its usage.

This study’s starting point is that buildings are considered as social objects. “Buildings operate socially two ways: they constitute the social organization of everyday life as the spatial configurations of space in which we live and move, and represent social organization as physical configurations of forms and elements we see” Hillier (2007, p.3). In addition, Sailer (2007) mentions that in researching the organization and understanding its function, it is extremely important to comprehend the movement within the organization. She suggests that the best way to study and research movement is the space configuration method, based on the Space Syntax theory (Hillier & Hanson, 1984). However, the organization’s movement is not isolated from other factors, and it is important not to confine or view this element from only one perspective. Thus, in order so to understand it better, the organization’s vision and structure need to be considered.

At the beginning of the research organization is portrayed, definitions are taken into consideration, and ways of analyses presented. Therefore, a short retrospective on organization is being introduced, following by definitions explaining the grounds for the analyses.

## 2 ORGANIZATION

### 2.1 Defining Organization

Organizations have been present in human society as early as the Chinese, Egyptians, and other civilizations, in forms of soldiering, public administration, and etc. Throughout time organizations have evolved taking on different forms and definitions. Today they appear in a form familiar to what has emerged in the 17<sup>th</sup> to 18<sup>th</sup> century Europe and America. Initially, the form of the organizations in the Enlightenment period has been based on personal ties and kinship. After that, the organizations have been formed on the basis of pursuing the same or similar interests (Scott & Davis, 2007).

Today, there is an abundance of organizations varying in fields, purpose, goals, ideas, and are present in every part of one's social life. We encounter them since birth in hospitals, kindergartens, and schools. As we grow, we become more and more organizationally vested, such as in students' unions, brotherhoods, spare time activities clubs, different groups, and political parties (Kühl, 2014). Today's understanding of organizations is broad and it is defined as anything that can be structured, regulated or goal directed (Kühl, 2014). There are many other perspectives and definitions available as well. Scott and Davis (2007) support the concept of all organizations as "social structures created by individuals to support the collaborative pursuit of special goals." Hatch (2006, p. 19) goes even further and defines "organizations as technologies, social structures, cultures and physical structures that exist within and respond to an environment". Chronologically, at first Pfeffer (1982, pp. 226-227) refers to organizations as "paradigms and

processes”, where paradigm is explained as a “way of doing things, a way of looking at the world”. Later on Pfeffer (1997, p. 9) makes a difference between organizations and social groups, by assigning organizations to have a goal of survival with clear boundaries and a relationship with the state.

Until now many scholars have expressed different views and understandings of organizations, and have produced an abundance of material relevant for studying them. Moreover, the contribution to the field of organizational research is enormous, and taking one certain perspective or valuing certain aspects will mean taking one step backwards. Therefore, the present study takes into consideration multiple sets of definitions and aspects, with a focal point on the physical space of the organization.

## **2.2 Analyses and structures of organizations**

Different definitions draw attention to varying aspects of an organization by which we notice various paradigms and patterns. Therefore, multiple aspects of looking at an organization have occurred.

Initially, organizations were analyzed as total organization or collectively, and as individual units within the organization. (Pfeffer, 1982). Later Scott and Davis (2007) introduced the perspectives for analyzing organizations as rational, natural, and open systems.

This study takes the perspective that organizations are rational systems, meaning that the organizations are highly formalized collectives ensuing specific goals and maximizing efficiency (Shafritz, Ott & Jang, 2011). Scott and Davis (2007, p. 29) defined organizations as “collectives oriented to the pursuit of relatively specific goals and exhibiting relatively high formalized social structures.”

The rational system perspective assigns to an organization determined goals, which have been persuaded and implemented with maximum efficiency. To this perspective other elements are assigned, such as information, knowledge, efficiency, optimization, implementation, authority control, coordination, rules, and directives (Scott & Davis, 2007).

Two distinct elements can be acclaimed to rational systems: goals and formalization. An organization can have specific or vague goals. If the goals of wanted ends are specific, then the organization has a definite criterion for selecting activities, making decisions, specifying tasks, hiring employees, and allocating resources. If the goals are equivocal, then the daily goals most probably will be determined. In education, it usually happens the end goals to be vague, yet the short-term goals to be specific (Scott & Davis, 2007).

Formalization contributes to a stable and expected behavior within the organization. This type of organization needs to have a constant improvement of its activities, and all the rules and activities need to be precise, exhaustive and transparent to the employees (Scott & Davis, 2007).

## **2.3 Structure and design of an organization**

Organizations have been constructed throughout the year in different structures and with different purposes. A variety of organizations have obtained a specific structure for a specific purpose (Galbraith, 2014). Sometimes the structure can be a decisive element of the development and survival of a certain organization. The beginning studies of organizations focused on finding and suggesting the best and

the only way of structuring an organization, whereas the later studies proved that there are multiple ways of structuring and designing an organization (Webber, 1947).

Starting from scientific and classical management principals, organizations formed in particular structures, which were considered as best at that given time. However, other theories emerged and introduced more fitting forms for the modern times. In the 1950's and 1960's it was evident that organizations had different strategies and needed different structure (Galbraith, 2014).

The structural contingency theorists propose three main characteristics by which organizations should be structured, and they are size, technology, and environment (Pfeffer, 1982). Consequently, the contingency theorists suggest that, according to the goals, type of services/products, demands and constraints of the organization, the managers need to make a decision of how they will design the structure of their organizations (Cunliffe, 2008).

An important moment in the organizational theory is the difference of the organizational structure and organizational design. Cunlife (2008) reminds of the importance of choosing the right structure and design which can effect the existence of the organization. For better understanding, Cunliffe (2008) suggests to think of the structure as framework that shapes organizations.

According to Cunliffe (2008), the structure is functional, divisional, or matrix. The designing factors for all structures are vertical and horizontal differentiation, integration, specialization, decentralization, standardization, and formalization.

Functional structure of organization is one based on usage of resources, goals, expertise and similarities in work. People or employees are grouped on the basses of their expertise. The goal of these organizations is "to develop and utilize expertise in core organizational activities, and to ensure stability, continuity and minimum disruption of production or service" (Cunliffe, 2008, p. 27).

Divisional structure, based on the name, is a structure that is divided in several self-contained parts that can function independently but need to report to the same headquarters. In addition, each of the divisions can have their own structure. The aim of these types of organizations is to serve and provide different types of services to different costumers (Cunliffe, 2008).

Matrix structures are teams of people that are grouped on bases of contract, project, or service. The aim is to work on meeting the needs of a certain client. There are other structures that apply to today's organizations and one in particular is the hybrid structure, which is a mix of all previously mentioned structures (Cunliffe, 2008).

Bolman and Deal (2008) are proposing another model of structuring organizations, the Mindzber's Fives model. It is where organizations are set as simple structure, machine bureaucracy, professional bureaucracy, divisionalized form, and adhocracy. Companies or organizations that obtain the simple structure are mostly companies that have few employees and are divided in two levels; employees who perform tasks, and mangers that observe, supervise and control. As the company grows, it can attain machine bureaucracy or professional bureaucracy. Machine bureaucracy is when the higher management makes the main decisions, procedures are standardized and work is repetitive. The product does not need to have a particular creativity just needs automaticity. Professional bureaucracy is when there are few managerial positions and units are mostly decentralized. Then, divisionalized form of organizations is when all units are independent, and each unit has areas of expertise in the tasks it performs. Adhocracy is a form of an organization that has a loose structure and flexibility. Therefore, structuring a company it is a very difficult task to do but it is extremely important to find the right structure for the right company.

There are many ways of explaining the structure and design of companies, but of utmost importance is to choose the right structure for the right organization.

## **3 LEADERSHIP**

### **3.1 Defining leadership**

In recent years' leadership has been among the most popular topics discussed and researched. There have been thousands of books published on leadership, and people even implement these books for their personal improvement. Interestingly, for its popularity, leadership has no distinct singular definition. Meaning that there is no definition that is constant and that applies to the same concepts (Northouse, 2004). Throughout the years' leadership has evolved and has been perceived in many different ways. Therefore, a variety of definitions have appeared and chronologically they depend on the circumstances that were given.

Initially, the definitions were aimed at control, obedience, and domination. Even Weber (1947) defined leadership as legitimate authority, because people tend to believe and obey authority that it becomes legitimate. Secondly, personal traits became a focal point, hence the leadership studies, leadership perspectives, and circumstances were defined from the leader's perspective (Meindl, 1995). Thirdly, the individual was replaced with group leadership, and researchers took a behavioral approach. Finally, leadership was seen as a relationship with which mutual goals can be developed. The relationship perspective has deepened from looking at the relation as dyad, to multiple relations, and even considering the followers as equals. Even today, researchers are unable to form a common stand on

a definition, consequently an agreement has been reached to accept the different approaches to leadership.

An attempt for defining leadership has been made by considering few components that are agreed on: "Leadership is a process whereby an individual influences group of individuals to achieve a common goal." (Northouse, 2004, p.5). In continuation to the definitions of leadership Bolman and Deal (2008, p.345) add a perspective on "mutual influence fusing thought, feeling, and action", which is representing the emotional orientation to leadership. In addition, Bolman and Deal (2008) have designed a grid, and have categorized leaders and their leadership processes into effective and ineffective leadership. According to their view on leadership there is no one way of leading. They advise that leaders themselves must decide on weaknesses and strengths of the organization, and build diverse teams that contain: structural, political, and human source of leadership. Further, leadership can be defined on bases of domains. For instance, earlier research focused on leaders, or was leader-centered. Later, leader-follower were determined, which was followed by determination of relationship perspective of research (Deanne & Koopman, 2011).

Moreover, Sergiovanni (2007) adds that context is the most important in making decisions on leadership style and schools need a special kind of leadership. Alvesson and Sveningsson (2003) made over 40 interviews and investigated the matter of leadership. In the conclusion part, the managers and leaders that have been interviewed interestingly all talked about different issues and how they actually viewed leadership. One of their conclusions was that the leader is there to state the obvious vision and unite members by strengthening social relations which lead to relational leadership. Relational leadership is considered to erect from a naturally emanating social process (Seers & Chopin, 2012). This model of relationship based research focuses on the relationship of the leader and follower (Deanne & Koopman, 2011). Therefore, in a given organization leadership is

considered to be a process as any other of the processes that happen within the organization (Seers & Chopin, 2012).

### **3.2 Relational leadership**

The beginning of relational leadership can be traced to 2000's, when researchers commenced to see leadership as a process. Granting the fact that leadership was a process it emerged as relation rather than as a separate leader-follower entity (Reitz, 2015). Pioneers in relational leadership were Cunliffe, Eriksen, Uhl -Bien, Ospina, Ladkin and others. The focus in relational leadership is on the processes. Specifically, the promotion of values and interests of the social order (Uhl-Bien, 2006). Excluding theory when doing the research on leadership Cunliffe and Eriksen (2011) started to notice that the interviewees talked about relationships and conversations, so they adapted their research on relational leadership as a conceptual frame. Moreover, relating is seen as a dynamic social process that is represented as an action from individuals that operate in context, and create the organizational processes. (Uhl-Bien, 2006). Relationship approach to leadership can be done in a group, researching the relationship and differences within the group, and then in a dyadic approach between two parties and the network which looks at the dyads within a group. Therefore, the main domains in researching leadership are leader, follower and relationship. (Graen & Uhl-Bien, 1995). Leader and follower researches have shown that leadership can be analyzed on the same levels but the take on relationship can be different.

The two main components of the relational leadership theory are the entity and the relation. *The entity* is actually the person or people considered having “the capacity to reason, to learn, to invent, to produce and to manage” (Uhl-Bien, 2006, p.656). Meaning that the first approach based on the entity aims on finding the attributes of the people who apply oneself to interpersonal relationship (Reitz, 2015). More precisely this kind of approach regards leaders, followers, and relationship as separate, independent units from organization, culture, structure, and society. In this case the relationship is created when different entities come into contact (Uhl-Bien & Ospina, 2012). Therefore, in this case the hierarchical position of the leader does not apply to the process of socializing and building relationship. Any person from the organization can be leader or follower, not considering the hierarchical position, but taking in account the entity. Because the relation that is being built is not based on one person, then most definitely there is a need of at least one other person. These relationships that were made among the leader and follower as studies in the 1970’s, showed that they were individually and differently understood, and the response toward each other was totally different (Seers & Chopin, 2012).

Looking at the relationship from an entity perspective can be said that it is created from contact of different entities and when researched attributes of individuals, quality of the relationship, future, development, outcomes of the relationship, are taken into consideration. Representative theories under the entity perspective are LMX theory, shared and distribute leadership, servant leadership, transformational and others (Uhl-Bien & Ospina, 2012).

The *relational* approach is when the focus is on the social construction of leadership as a process (Uhl-Bien, 2006). The latest definition on this relatively new approach for relational leadership is “a social influence process through which emergent coordination (i.e. evolving social order) and change (i.e. new values, attitudes, approaches, behaviors, and ideologies) are constructed and produced.” (Uhl-Bien, 2006, p.655). Moreover, Relational leadership is considered as “means

recognizing the entwined nature of our relationships with others” (Cunliffe & Eriksen, 2011, p.1434). The researchers using the relational approach, that sees leadership as a process, examine the dynamic of how a relationship is made, where the relationship is made, who was the initiator, what was taken out of the relationship. Furthermore, Cunliffe and Eriksen (2011) mention that a relationship is not just a dialog among two or more people but also to give opportunity to people to express themselves by trusting and respecting them. The constructionist thought on relation it stresses the interdependence of the segments and the embodiment of them all to create relationships (Uhl-Bien & Ospina, 2012). Bradbury and Lichtenstein (2000) introduce two dimensions on the perspective of relationality. Base on the modern development of research the main focused is given on a holistic perspective of research. Therefore, the first dimension on research on relationship makes difference between external forms and internal attributes of the organization. The second dimension is taking into consideration multipersonal, interpersonal and intrapersonal approaches. Barry and Crant (2000) talk about the relational communicational relationship and mention that this relationship can be influenced by the organizational structure, culture and other factors.

There are many relationship approaches such as, Hollander’s relational theory, relational and collective self, social networks, Rost’s postindustrial leadership, embodied leadership. All of the above theories have contributed, or have something in common to the field of relational leadership.

As previously mentioned relational leadership can be examined by researching two perspectives, one of which is entity based, and the other relationality based approach. Specifically, about the focus of LMX theory, which is a representative of relational leadership from entity perspective, is that examines the relation among two individuals who have predetermined positions in the hierarchy as leader and subordinate (Seers & Chopin, 2012). Likewise, the personality of the people related in the relation counts and as well as, the new

responsibilities they are inclined to take so to create the relationship (Northouse, 2006). Seers and Chopin (2012) mention three phases how it is represented and can be studied: sampling, role making, and role routinization. Through this process the two members which are labeled leader and follower create their relationship. Sampling is when while researching employees are chosen by some criteria. Role making is an important segment of creating the relationship. Role making happens when the two parties take up a role and identify with it, for instance partner, subordinate, leader or others. Both parties stay true to their identities while they create the relationship.

Later this concept was enriched with addition of: mutual trust, respect obligation, learning and accommodation. Relationships as seen by Seers and Chopin (2012) are created because of interest and are tools for production however, a relationship cannot be defined based on one perspective. Seers and Chopin (2012) explain that a relationship can be defined on its particular nature in coordination with all other characteristics connected to the exchange. Two individuals can build a cooperative relationship based on their collaboration, or if they have mutual respect then they build a trusting relationship.

## 4 SPACE

For a long time, space has been considered as a “passive host” to people’s activities. The time has come when professionals in the fields of architecture and design have started interpreting space as active where people take part in an array of activities (Backhouse & Drew, 1992).

### 4.1 History

The research on spatial settings in the organization is dating back to the 1930’s starting with the Hawthorne Works of Western Electric, which were carried out by Elton Mayo who tested the employees’ production affected by the change of illumination (Pugh, 1971). However, the topic of space and spatiality had not stayed within the organizational research until the 1980’s and 1990’s, when it had a comeback in combination with organizational culture (van Marrewijk & Yanow, 2010). Becker and Steel (1995) consider physical space among technology, work process, management style, and organizational philosophy, as of enormous importance to the organization, going as far as implying that it represents human development. After being given a value of great importance physical space has been appearing in research since the 1980’s. Many of the researchers (Berg & Kreiner 1990; Goodsell 1993; Yanow 1993; Kornberger and Clegg 2004; Van Marrewijk 2009a) have focused on the spatial design and communication. Other researchers (Goodsell 1988, Lefebvre 1991, Preoffitt et al. 2006, Yanow 2006a) have focused on the spatial design and the identity of the organization. And the research

has not stopped there. It has expanded significantly, and taken many shapes and perspectives on the topic of space.

In its infancy the topic of space was researched on a more transparent and simplistic level. The initial studies on space were concentrated on the size of the space, and interestingly, space was arranged by size and hierarchy (Pfeffer, 1982). The higher the individuals' status the larger the office, or working space. The size of the building provided an insurance of the greatness of the organization, and it was considered as one of the dimensions in the analyses of the organizational space (Pfeffer, 1982).

Another dimension of space was quality, meaning that decoration in organization was important, and depending on rank and status, it differed from office to office (Pfeffer, 1982). Pfeffer (1982) suggested that size and quality were important "symbolic aspects" which affect the work quantity and quality. Additionally, the flexibility of space was as important, and influenced the performance of the organization. Of utmost importance was that space design fit with the employees' tasks and promoted their work (Pfeffer, 1982). Likewise, Hatch (2006) has added the concept of layout, specifically the internal layout of a building, and how it relates with spatial arrangements, walls, large furniture, and employees. In continuation, Pfeffer (1982) added the importance of arrangements of an office as a dimension that influenced accessibility and social interaction for the employees. Moreover, a more recent take on space, Hatch (2006) comments on the modernist measures of space: proximity, privacy, openness, accessibility. Privacy is even represented by Pfeffer (1982) as a dimension, that prompts a thought of hierarchical status of employees and can simultaneously influence task performance. Last, but not least, was location as a separate dimension which can influence the labor market, in a sense that it can attract or reject employees (Pfeffer, 1982).

In recent years the research on space has taken yet another huge part of organizational theory building. The main views on physical space have been

divided among the modernists, post-modernists and symbolic-interpretivists. The modernists have argued that physical space can influence the organization's efficiency and performance. Moreover, symbolic-interpretivists give meaning to space and space as an inspiration for social relations. Following, the post-modernist regard space as impacting many elements and the organization as a whole. The interpretation of space all through the different theoretical perspectives has been vastly varying. Therefore, in this thesis, the post-modernists perspective will be undertaken based on the theory of Space Syntax. As follows, both modernist and postmodernist scholars have a non-abstract view on physical space, whereas, the symbolic-interpretivists are concentrated on the meaning and association employees get from their organizations (Hatch, 2006).

## **4.2 Space syntax**

The present study will lean on the definition of space given by Hillier (1984) in the most prominent and revolutionary study of space in the field of research. He initially raises the question of space and society in the architectural field and provides the following definition of space. "Space is everywhere a function of the forms of social solidarity, and these are in turn a product of the structure of society" (Hillier, 1984, p. 22). Hillier's inspiration comes from, as he claims, Durkheim's conclusion that society has a certain spatial logic. Therefore, space has a social logic.

The base of the present paper is erected from Hillier's theory Space Syntax. Before this theory is described, a short history on the development of Space syntax will be presented. The theory of social logic of space has started with a grand view

on society and space. Society has a special urban layout and the movement of people within the spatial structure suggests that “space is a morphic language” Hillier (1984, p. 22). In addition, the morphic language is defined as a “set of entities that are ordered into different arrangements by a syntax so as to constitute sociable knowables” (Hillier, 1984, p. 22). Therefore, we can imagine that societies construct the space by given principles, and each and every society has made a pattern of encounters from very random to very organized. In conclusion, the combination of the principles is the syntax (Hillier & Hanson, 1984).

The use of Space syntax has increased in recent years and more and more researchers use this theory as a starting point in different areas of research. Since the late 1980's space syntax has been used in many studies and it has been developed for a number of different uses. Starting with its construction by Hillier and Hanson, they observed the sociocultural variables in the rebuilding process of London. Successively, Peponis, Zimring and Choi (1990) researched the functionality of the morphological structure of a building. Suffice it to say, the variety of application of space syntax is immense. It has been used on a global level as in societies, and in a local level as in form and structure of buildings. Many researchers working in the field of space syntax in buildings have contributed to the organizational level. Penn et al. 1997, Grajewski 1992, Hillier and Grajewski 1987, Hillier and Penn 1991, all have stated that the spatial layout is one of the important elements that influences communication in a given organization (Rashid, Kampschroer, Wineman & Zimring, 2006). Few of the modern perspectives (Sailer & Penn, 2009; Sailer et al, 2008, Sailer 2010) on physical space have argued how difficult is to present and calculate a clear cut interdependence among physical space and organizational behavior.

Space syntax is a theory developed by Hillier and Hanson in 1984 and published in *The Social Logic of Space*. This theory is “based on the morphological idea of spatial configuration and structure, aimed at investigating the society-space relationship in general, and the relationship between space and organization as

realized in complex buildings” (Sailer, 2010, p.34). “Space syntax shows that spatial organization is not only a means by which collections of individuals can constitute a society but, because space has its own laws and its own logic, it can also act as a system of constraints in the society” (Hillier & Hanson, 1984, p.199). The aim of space syntax is to show how space can be organized in variety of configurations, how simple structures can make up a complex and coherent system (Hillier & Hanson, 1984). The theory of space syntax was initially inspired from society, and for a purpose of society it studied how settlements and cities were functioning. Parallel to the application of space syntax theory to large settlements Hillier and Hanson, adapted this theory to buildings as well. The interest of this paper is structure of buildings. Buildings are different from settlements and are considered as different types of space. Buildings are seen as discontinuous systems with separate events, meaning that cells that create organization are entities by itself and not connected with the global world. Hillier and Hanson (1984, p.143-146) describes buildings as transpatial systems which are “class of spatially independent but comparable entities which have global affiliation, not by nature of continuity and proximity but virtue of analogy and difference.” Hillier and Hanson (1984) argue that buildings are “domain of knowledge” and “domain of control”, meaning that the knowledge is bought by the categories and the control is presented by the boundaries. Hillier and Hanson (1984) research probes deep in the history of the simplest one cell structures, like tents and huts. It is very clear to see that, depending on culture and origin, they have different interior structure. The structures’ variance of space is evident where different rank, age, sex, and degree of wealth has occupy the space (Hillier & Hanson, 1984).

Hillier and Hanson (1984) have translated the traditional design of a school into a space with separate classrooms, separate lounges, and separate playgrounds. They separate the inhabitants and the visitors, respectively as teachers and students. The students’ movement is synchronized with the inhabitants. Next, the inhabitants are synchronized in relations to each other while keeping their status

as professionals in their work. However, the relationship among the visitors and the inhabitants is not symmetric, which leads to the conclusion that the school cannot control the movement of the visitors. Thus, the movement of the visitors is asymmetric in contrast to the inhabitants. Based on the above explanation by Hillier and Hanson (1984), the building where a school is situated is ramified rather than reversed.

Space syntax has contributed largely to the space configuration in settlements and cities, and the movement of pedestrians. However, on the level of organizations there haven't been many advances. Sailer (2010) and Markhede (2010) are few of the researches that have dedicated themselves to the research of spatial configuration in offices (Sailer, 2010). Sailer (2010) reinforced the importance of special configuration within the organization in a few basic arguments. Firstly, he states, the employees can be brought together or torn apart in an integrated or segregated space, accordingly. Secondly, it can influence the movement flow of the employees as an increase in presence, interactions, encounters. Thirdly, it can impact the task-performance by having accessibility to the resources needed to accomplish the task. Fourthly, it can affect and bring out a variety of qualities that the employees have in accordance with the quiet and busy spaces in the organization. And lastly, special configuration can provide transparency in the organization.

## 5 RESEARCH PROBLEMS

In recent years there has been recognitions of the impact physical space has on the educational and social practices in schools and organizations overall. However, there has been scarce empirical evidence. Pasalar (2003) indicates that some research findings are attributing the social interaction on the social and space characteristics of the building. Therefore, any research on space should be a multifocal approach.

The focal points in the present thesis are space and leadership in the context of an educational organization. Taking a more specific and certain view on the phenomenon will mean excluding other potential understandings of the complex settings. Therefore, a detailed description of the process of creating the research questions will be presented.

The inspiration came from a discussion on leaders' offices throughout the years. Simple observation of offices through a number of years showed a continuous trend of transformations, supporting the fact that we consider the surrounding space and its artifacts differently at different times. The following step in the development was the discovery of space syntax. From there there has been an engaging interest to understand how is space social and what are the connections among all phenomena that are considered social, i.e relational leadership, and space.

In particular, the study focuses on spatial configuration, the potential of the organization to create opportunities for employees, to optimize encounters, and create a relationship. Hillier (2007, p.23) uses the word pattern to explain the meaning of configuration and gives a formal definition as following: "It seems to mean a set of relationships among things all of which interdependent in an overall

structure of some kind.” In addition, Sailer (2010, p.98) defines the function of spatial configuration: “Spatial configuration is concerned with layout and how parts of a space are put together to form a system of interconnected spatial entities like corridors, offices, meeting rooms and open area”. Spatial configuration is one important criteria for showing the social relationship between the space and the organization. It belongs to the theory space syntax that has arisen from the field of architecture and moved towards society and organizations. Pasalar (2003) has mentioned that when we talk about environment we often talk about the physical, organizational and social settings where people interact and do other activities. Furthermore, Hillier has stated (2007, p. 20) that “Behavior does not happen in space but it has its own spatial forms. Encountering, congregating, avoiding, interacting, dwelling, teaching, eating, conferring are just activities that happen in space...are not attributes of individuals but patterns, or configurations, formed by groups or collections of people.” Based on considering space as owning social logic, the creating of relationships among employees is being examined.

The aim of this study is to understand and describe the relation of physical space and relational leadership seen through the prism of social constructs. Briefly summarized in one research statement, it would be the attempt to discover an interconnectivity of the social connection and influence, space and leadership have. This is most probably the first attempt in explaining the correlation of relational leadership to physical space as social construct.

A supplementary focus of the study is the structure of the given organization as one of the major segments that influence the overall functioning of the organization.

## **6 IMPLEMENTATION OF THE STUDY**

In recent times there has been a greater interest in physical space and a stronger correlation to leadership. This study is an attempt to explain the correlation among physical space and relational leadership. The starting point is analyzing the vast amount of research on the interdependencies of social interaction and spatial attributes. The importance of the study is its pioneering perspective on space and leadership and their application to predict a correlation between the concepts of spatial layouts and leadership roles.

### **6.1 The Participants and the Research Process**

An English daycare center is being taken as an educational organization that provides care for children that range from two and half to seven years old. The educational organization that has been studied is a traditional design of a school, since it includes separate classrooms for each age group, and separate places for assembly and play. It is situated in a building which has been originally designed for offices and not for a school. However, the management has transformed it into a school and it fulfills that purpose. Regarding the site of the actual daycare that has been taken as a case study, it is important to note that the organization is situated on the second floor of a building used by several companies. The position of the organization is in a building complex which is in an area in the city that has more than 3000 inhabitants, and the actual position of the building complex is close to a very important motorway that goes through the city. The building has three

main entrances which are positioned on three distinct parts of the overall building. From a small street towards the parking area the middle entrance can be found, which leads directly to the daycare center. In relation to the spatial configuration in the presently researched daycare center, the layout plays a strong role in determining the movement of the employees. The reason for that is twofold: one, the routine that they need to follow, and second, is the space itself. The fact that the present organization is occupying premises that were initially constructed for offices, the daycare center is somehow hidden in the building. Leading from the door there is a swirling staircase that leads to a door that represents the entrance of the school. The door is chained for safety reasons. The daycare center is situated on the second floor as presented by its blueprint in figure 1.

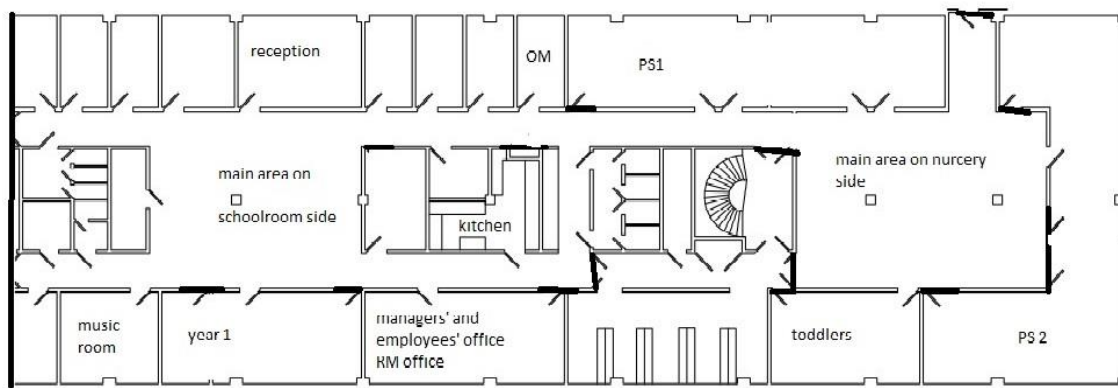


FIGURE 1. Simplified Blueprint with Names of Areas

FIGURE 1. Simplified Blueprint with Names of Areas

The participants in the research were not only the leaders who were interviewed, but also included teachers, students, other employees in the daycare center, and parents, in order to better understand the settings. After a general observation of the organization and its processes an interview was made with one leader, carried out by shadowing and observing them. The information of the observation was used to complete the movement pattern and its visualization (explained in research methods). Subsequently a second interview was undertaken, followed by an observation and mapping of the movement. A third leader was followed, however,

because of uncontrollable issues an interview was not made. After the development of the analyses few more additional interview questions were added in favor of clarity of the settings and processes.

Chronically the actual research started with the interviews and observations of the leaders and the premises after the analyses was undertaken of the blue print.

## **6.2 Research methods**

The present thesis is using multiple methodological approaches in order to study the concepts or physical space and leadership in a given organization. The design of the research is based on case study which benefits of instruments used to collect data that belong to qualitative and quantitative methods.

### **6.2.1 Case study**

The undertaken study is a case study which is “an empirical inquiry that investigates a contemporary phenomenon within its real life context, especially when the boundaries between phenomenon and context are not clearly evident” (Yin 1994, p.13). Creswell (1998, p.61) defines case study as “an exploration of a “bounded system” or a case (or multiple cases) over time through detailed, in-depth, data collection involving multiple sources of information rich in context.”

Case study research has a very long history and has been used in many fields as both qualitative and quantitative. Usually in case study the data collection is broad because the researcher is trying to portray in-depth picture of the case studied. It can include interviews, observations, documents, audio and visual materials. Creswell (1998, p. 123) mentioned as well that Yin has given six forms of

data collection and those are documents, archival records, interviews, direct observation, participant observation, and physical artifacts.

Reporting case study has no unique form but it can be that is simply describing the situation without generating theory, or analytical comparisons (Creswell, 1998, p. 186).

The present research is a single case study and it is a bounded system by time and space where individuals' activities and behaviors' are being studied. The case researched is a daycare center and the physical space is significant for the research questions. The observation of the organization as a case study was done within 6 months in intervals. In connection with the other methodological approaches will provide a better understanding of the mutual influence of the space, organization and leadership (Flick, 2006, p.141).

### **6.2.2 Qualitative methods in the present study**

Qualitative research is a type of educational research that is dependent on the verbal information the participants give on general and vast questions. The purpose of the research is open and is focused more to understanding an idea or phenomenon. The instruments mainly used in qualitative research are collecting general data which permits the participants to give general answers, mostly the data is gathered in text or pictures, and the number of participants is small (Creswell, 1998, p. 15). The qualitative instruments used in the case study are interviews and observations.

#### *An interview*

Interview has been a methodological research tool for a long time and has been among the most popular choices. The interviewees were chosen on the bases of positions in the organization. For the purpose of researching leadership, the

leaders were chosen as most reliable for the source of needed information. For the part of the qualitative research an interview was conducted with the 3 leaders of the organization. The interview was based on an interview questions used by Sailer (2010) in her PHD research about space-organization relationship enriched with questions about leadership and LMX theory (LMX 7 Questionnaire inspired questions). LMX questionnaire was base of creating descriptive interview questions about the quality of the leader-member relationship. The interview questions were structured and semi structured based on the organizational structure, culture, space, and relationship. The interview lasted about 40 min to one hour depending on the length of the interviewees' answers. Also, additional questions were asked via e-mail correspondence. Later, the content of the interviews was conducted, transcribed and analyzed. The LMX questionnaire refers to the quality of the relationship that is created among leader and member.

#### *Ethnographic observation*

Ethnographic method is mainly used to study cultures. The beginnings for ethnography are marketed in the field of anthropology later on the method is used in sociology and education. Whereas, today has a vast use in a number of fields (Flick, 2006, p.227). The ethnographic method of research has taken some form of postmodern attitude that gives flexibility to the topic that has been studied. The methods by which the data is collected do not take primary position. Hence the topic and the interpretation of the findings are primary (Flick, 2006). Thence, the observation overall focus is on the participant Denzin's (1989b, pp. 157-158) gave a definition that participant observation is "a field strategy that simultaneously combines document analyses, interviewing of respondents and informants, direct participation and observation, and introspection." After the observer or researcher gains permission to the premises the next phase is to do descriptive observation in order to understand the complexity of the premises. During focused observation which follows after the descriptive observation, the researcher focuses on the

processes and problems. Selective observation is the last step when the observer aims to find evidence and types of processes and practices (Flick, 2009).

### 6.2.3 Qualitative analyses

In the qualitative research the data were collected with interviews, occasional e-mail exchange, LMX questionnaire inspired questions, and observations. Bellow separately will be described the method how the data were analyzed.

#### *Qualitative Content Analyses of the Interviews*

An interview was made and recorded in the dwelling offices of the leaders. All the questions in the interviews were open-ended which allowed interviewees to give their own impression of the inquiries and issues. Besides, the recorded interviews occasionally e-mails were exchanged just to clarify the meaning of the answer given beforehand and answer in writing few open-ended questions. After obtaining the data from the interviews a verbatim transcription followed and as recommended by Creswell (1998) a general review of all information was carried away. For better clarification all question in the transcription and written answers were colored depending on the section they belonged. Supplementary, after reading and rereading all answers that were relevant to the research question were underlined. It can be said that coding was used to categorize the questions and the answers. As an analysis method of the interview was used content analyses which is considered to be very flexible and widely used. Hsieh and Shannon (2005) reported that, content analyses has been extensively used as a technique since the 20<sup>th</sup> century and developed as quantitative to qualitative data analyses. Weber (1990) explained qualitative content analyses as a technique for classifying information based similar meaning, creating groups of portion of information that

can explain phenomenon that is being studied. In this case all data were subjectively interpreted and the content was arranged systematically by identifying the topics that were covered. Because, the aim of the study as stated in Chapter 5 was to understand and describe the phenomenon of space and leadership as social constructs conventional content analyses was used. The usage of conventional content analyses allowed the research to gain direct information and perceptions from the leaders.

Challenges of content analyses can be, not fully understanding the content, ambiguous findings, difficulty in stating the theory or the connection of the findings.

#### *Qualitative Ethnographic Content Analyses of the Observation*

As stated in Chapter 5 the intention of the research is to explore the social constructs of space and leadership, hence observations were conducted. Before carrying on an interview participant-observation was examined for each and every leader. Brief field notes were recorded on the blueprint of the daycare center and alongside on a separate notebook extensive field notes were documented. The blueprint notes stated the movements which were sequentially taken and marked with numbers on the places where the leaders visited. Accompanying notes were taken on their behavior and the meaning of the behavior at a given moment. The notes recorded during the observations were typed into a document file read through and matched with the interview codes or categories. Data from the interviews and the observation was inextricably connected and easily matched with the categories. After the observation a short summary was made on the overall experience and observation in the field (cf. McFarland, M.D., 2014).

#### **6.2.4 Space syntax as quantitative method in the present study**

Space syntax is the qualitative method that was used in the present research to represent the spatial configuration. The two methods that were used in analyzing and representing the configurational space were all line maps (axial map) and visibility graph and the tool used is Depthmap software (Sailer, 2010).

“Space syntax is a descriptive technique of spatial and configurational analyses, it aims to describe space by means of non-arbitrary and reproducible representation” (Heitor, Cardeira, & Cordovil, 1997, p. 1). The main functions of space syntax are contrasting different spaces, translating the results in quantitative ones, and presenting configurational characteristics (Heitor et al., 1997). As mentioned earlier Space syntax is developed by Hillier and Hanson (1984) and later on was improved by Hillier and his fellow researchers. In sense of buildings it is used as a method to analyse the spatial layout or the spatial configuration how the offices, hallways are configured in an organization. In this particular thesis axial maps and visibility graphs are taken as models to present the spatial configuration (Sailer, 2010).

#### *Depthmap software that creates axial map and visibility graph analyses*

The history of constructing the software Depthmap happened because of two reasons one for analysis of isovists (Benedikt, 1979) and the other for Space syntax analyses (Hillier & Hanson, 1984). The form in which the blueprints are represented is the axial map.

The Depthmap does not have an option for drawing, thus a file in dxf needs to be imported and after that can be analyzed (Turner, 2004). Therefore, the Depthmap is a software that was originally developed by Turner but improved by Peponis et al. (1998), Penn et al. (1997), Turner et al. (2004), and many other researchers in the recent years. They all added algorithms in order to improve the work of the software and to make it more reliable for research reasons. (Turner, 2004, p.3, 42). Using the Depthmap software as shown below axial maps for the organization are made and calculation on the connectivity, integration, mean depth are carried out. In addition, as segment map is made and proximity and

accessibility are analyzed and visibility map is being analyzed. As previously mentioned the calculations were carried out automatically by the software. All of the above calculations and their meaning and contribution to space and relational leadership are being explained in the following segments.

*Axial map/segment map as a model to represent the spatial analyses.*

For the purpose of the present thesis the axial map was constructed with the use of Depthmap software, which is an open source and can be freely downloaded and used (see Figure 3). Firstly, the blue print of the premises was redrawn in AutoCAD, which is a software application for computerized drawing. After the blueprint was drawn in AutoCAD it was saved as dxf file. Secondly, the dxf file was uploaded into the Depthmat software and automatically was created an all line map. From the tools file was chosen “run graph analyses.” The software gives many analyses of the all-line map as entropy, connectivity, harmonic mean depth, integration, intensity, line length, and mean depth. The analyses needed for the present research were proximity, connectivity, mean depth, and integration. Thirdly, after the software has run the analyses it is possible to choose in window, the scatter plot and table with the already done analyses. By using the Depthmap software several measurements were calculated, independently each and every measure will be interpreted in the analyses section. The bellow picture is the axial map from the research where the colors are interestingly explained by Turner (2004) to imagine a scale where the lowest attribute value is imagined to be 0 and the highest 1. Following that rule will mean that the blueish magenta will be 0.0, slowly changes to pure blue 0.1. From 0.1 to 0.5 the color changes from blue to green, 0.5 to 0.9 green changes to red and changes to reddish magenta at 1.0.

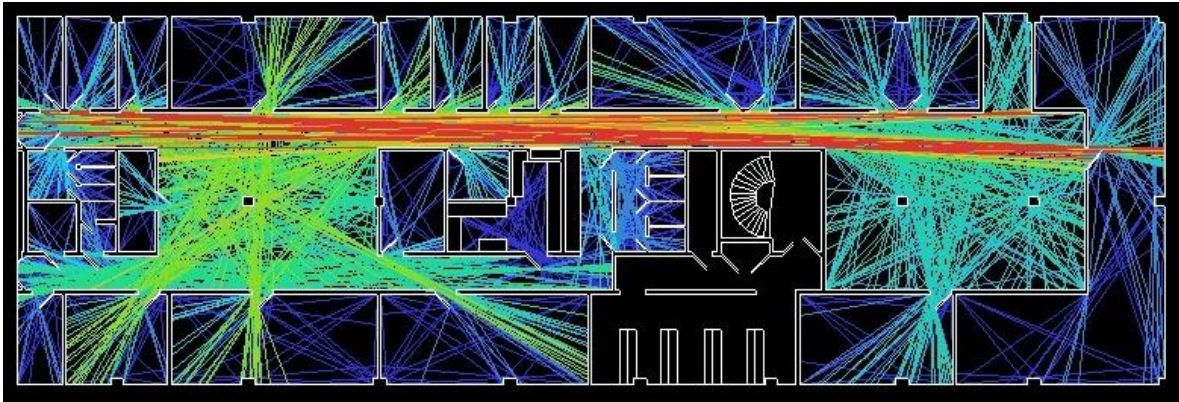


FIGURE 3. Sample of axial map

Axial maps are initiated by Hillier and Hanson (1984) and they are graphical configurations that represent the morphological characteristics of the space. (Heitor, Cardeira, Cordovil, 1997) Axial map is the least set of straight lines which pass through each convex place (Hillier & Hanson, 1984). Sailer adapted the definition to be more compatible and she created a definition that coincides with the space in a building. Therefore, in the present study Sailer's (2010, p.69) definition was used and it is as follow: "an axial map line in a workplace environment can be defined as the least set of straight lines covering all parts of the building, thus all routes of movement and everyone's workstation and making all links necessary to represent the relationship between people through space." Hillier and Hanson (1984) built the axial graph with the axial lines consisting it as nodes (Turner, 2004). With the use of the particular graph information is being given of how the space is connected and as well how one particular place is connected to the others (Heitor, Cardeira, Cordovil, 1997).

The axial map can be converted into a segment map which brings the measurements of proximity and accessibility. In the map bar there is a choice to "convert active map" then new map type is chosen "segment map." The Depthmap breaks the axial map into parts or segments and combines them together as network so segment map is created (Turner, 2004).

*Visibility graph as a model to represent the spatial configuration*

Visibility graph was initially the reason to develop Depthmap software. It is “spatial representation based on the visible area in all directions from one point or location in a plan” (Sailer, 2010, p. 71). When run through Depthmap it gives the same measurements as axial map which are visual connectivity, visual integration, proximity, visual mean depth, accessibility and metric distance.

Visibility graph analyses were made by importing the previously made dxf file in AutoCAD into the Depthmap software. The first step is to set a grid by clicking on the tools bar selecting “visibility” and “set grid.” It will automatically come out a number according to the dimensions of the drawing. After making the grid, secondly fill tool was used to fill in the grid. Later from the “tools bar”, “visibility” was chosen “make visibility graph.” Finally, the visibility graph was made and from the tool grid the analyses were run automatically after clicking on “run visibility graph analyses.”

#### *Space observation manual*

Space syntax observation manual was initially written by Grajewski (1992) and rewritten and improved by Vaughan (2001). The manual is based on the Space Syntax software and it is made so that it can be used as guidance for researchers to collect data on people’s use of space.

The manual introduces seven methods of observations and for the purpose of the present study only people following, movement traces were used. People following method is used for observing the movement of a person in two ways. One is observed the pattern of movement from specific location, two is the relationships of the routes. The method is when the observer with a blue print from the field in hand traces the routes that people take. Movement traces method is used mainly for open office space and other offices are ignored. The observer takes a mental snapshot (stays in one places two-three minutes) and marks the movement of the participants from start to end. The relation among three leaders and the spatial configuration of the organization were examined in a way where

each leader was observed and their movement was mapped. Moreover, the overall organization was under the magnifying glass because the organization is a system that functions as a whole.

### 6.2.5 Quantitative analyses of axial map, visibility graph and observation

#### *Axial map analyses*

The below picture is an axial map of the organization researched that shows the segregated and integrated spaces in the working environment. On Figure 4 are many lines visible with different colors and density. In favour of understanding the axial map it is important to mention again the meaning of the colors which can be set in the software manually depending on the size of the area. The following axial map was automatically calculated by Depthmap software.

- Red- represents most integrated spaces
- Yellow- more integrated spaces
- Green - less integrated spaces
- Blue green - less segregated spaces
- Blue - most segregated spaces (Pasalar, C., 2003, p.95)

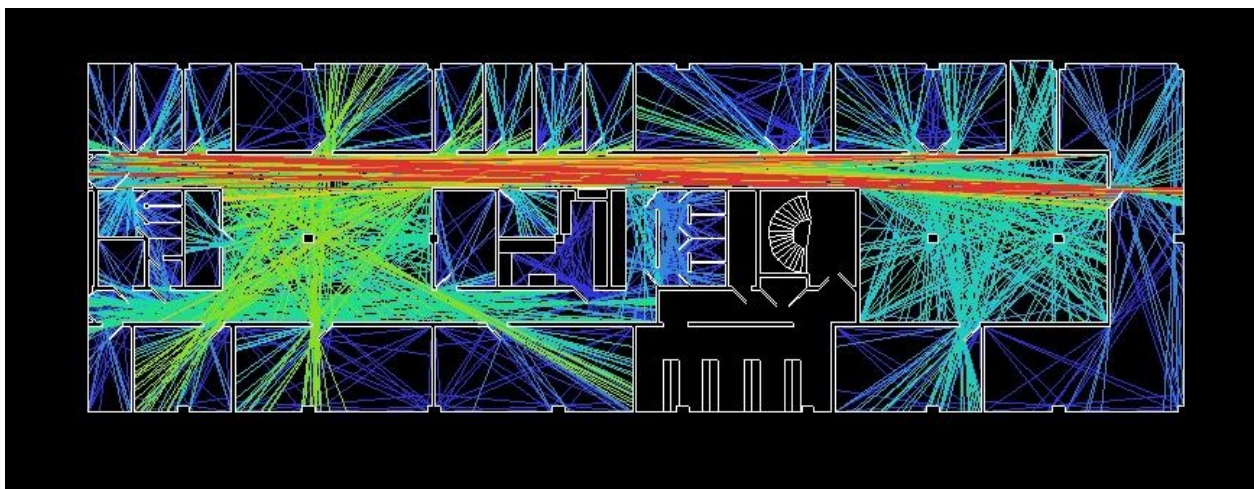


FIGURE 4. Axial Map

It is very clear from the map (Figure 4) that the corridor is the most integrated space, then the schoolroom and the least integrated area is the nursery side. The division of the classrooms is done in such a way that the quietest place is used by the smallest children. Therefore, the strategic decision for the toddlers to occupy the most segregated area is an advantage and helps teachers with their routines and children's wellbeing.

In order for the analyses to be easier and meaningful the below axial map (Figure 5) uses the least lines.

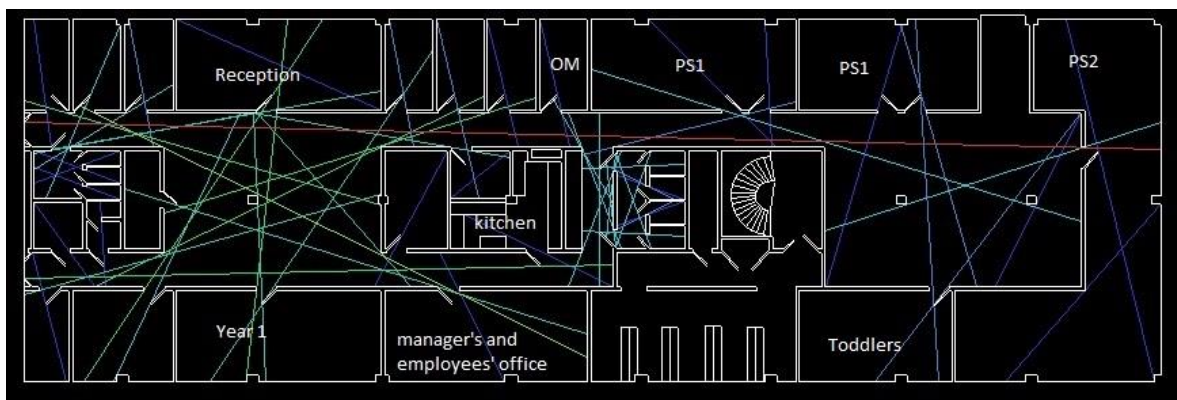


FIGURE 5. Axial Map with Few Lines

The office of the school's manager and other employees which in some places can be referred as resident manager's office is placed in a particularly segregated area of the school. The OM office has a position at a more integrated area which means that more people are passing and has a better visibility and reach to employees.

Below there is an axial map without the floor blueprint.

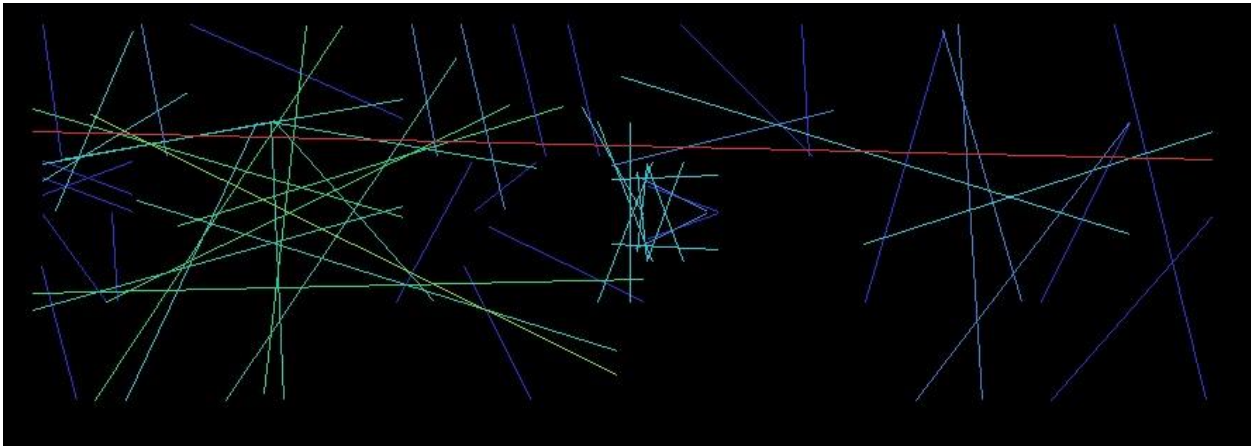


FIGURE 6. Axial Lines

*Measurements of axial map analyses*

The main measurements of the axial map that were analyzed are: connectivity, mean depth and integration. Additionally, proximity and visibility were considered so to get a better picture of the issue of spatial configuration. There is not a fixed scale to present the measurements and explanations the scales in every axial map are different because of the size of the actual place.

Mean depth (MD) is “the mean distance of all axial lines from an axial line” (Asami, Kubat, Kitagawa, Iida, 2003, p.5) The value for MD = 2.47 is low which means that the space does not have a great depth that translates into a more integrated space. Most probably because the overall size of the organization is small in comparison with many other researched organizations. The other reason could be that most of the researches (Sailer 2010, Pasalar 2007) are made on two or three level buildings and this building had only one floor examined. Usually, when a single floor is examined the mean depth shows high or relatively high mean depth. In this study the MD shows that the floor is relatively integrated.

Connectivity is “the number of immediate neighbours of the axial line.” (Asami, Kubat, Kitagawa, Iida S. 2003, p.5) or is actually the “number of elements that each root element is directly connected to” (Sailer, 2010, p.70). Looking at the connectivity of the floor plan it is safe to say that the RM office is not very well connected to the rest of the schoolrooms, cloakroom, accountant, and even the

OM's office. There are benefits for the RM office position. Firstly, it has the possibility to offer quieter time for the employees and secondly, the manager is given possibility to move around more so to be connected to the rest of the teams. When inspected the axial map we come to a realization that the schoolroom has a slightly better connection to schoolroom rather than nursery side.

Integration is "a static global measure it describes the average depth of a space to all other spaces in the system" (Pasalar, 2003, p.41). The most integrated lines as seen in the axial map are the ones with shortest average length. The most segregated parts are those whose lengths of each trip are the longest in average. Employees on the nursery side have to make longer trips to the office so their classroom is less integrated whereas, the schoolroom side can make shorter trips and are considered to be more integrated.

The spatial relationship can be shown with integration and connectivity combined. The following measurements are generated automatically from the Depthmap software. These measurements depend on the axial map itself, hence different axial maps have different sizes and forms the numbers will be different.

	min	max	average
mean depth MD	1.5	3.6	2.47
connectivity	1	35	8.35
Integration [HH]	1.35	6.86	2.59

TABLE 1. Measurements for Axial Map with Fewest Lines

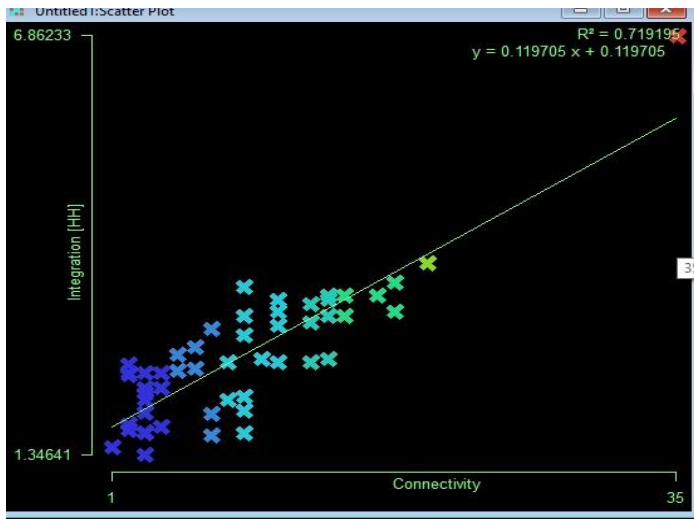


FIGURE 7. The Coefficient of Correlation.

$R^2$  is the coefficient of correlation. The coefficient of correlation (correlation coefficient) among connectivity and interaction is relatively high  $R^2=0.72$ . The coefficient of correlation to be high is  $R^2=1$ , where as in this shows a bit weaker integration. Therefore, the correlation between connectivity and integration is called intelligibility. Intelligibility shows the possibility to move easily and have greater visibility so everyone can have a better perception of what is going on at all times.

#### *Proximity and connectivity (segment map analyses)*

The researched organization is consisted of three teams on one side and other two teams on the other side in between is the kitchen as a separate unit, the accountant's unit, NVQ office unit (OM, other managers' office) and the manager's unit. All of these teams can function separately and individually or in collaboration.

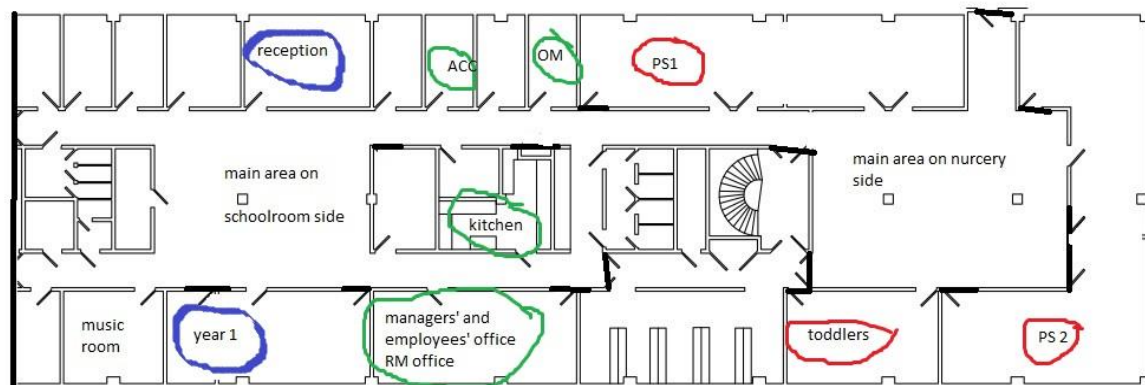


FIGURE 8. Blueprint with Colored Teams

On Figure 8 can be clearly seen how the teams are situated in the organization. The teams are constructed on the base of the children's age. Toddler group is consisted of 4 teachers and 16 children 2,5 and 3 years of age. PS2 is a group consisted of 4 teachers and 23 children ranging 4 to 5 years old. PS1 is another team that has 3 teachers and 19 children 3 to 4 years old. These teams are considered to be on the nursery side. The green teams that are in the middle are ACC (accountant's office), OM (other manager's office) is also NVQ office, RM office (resident manager office) and the kitchen. The two blue teams are called schoolroom side. Year 1 is a team of 3 teachers and 19 children ranging from 6 to 7 years old. Reception is a group of children ranging 5 to 6 years old consisted of 3 teachers. One of the important issues in having many teams working as stated is proximity as a parameter of space syntax. The proximity of the teams working together or separately needs to be balanced. Amin and Roberts (2008, p.354) state that the spatial setting are important part for individuals or teams to learn in an organization. Moreover, the social interaction is dependent on the proximity and connectivity of the teams' communication which all comes down to the spatial settings. The arrangement of the space also influences on the sharing of the tacit, creative and innovative knowledge. (Sailer, 2010, p.233).

The actual proximity is calculated with the distance in meters. Sailer (2010, p.233) defines proximity as a physical reality which is “metric distance between actors or groups of actors in workplace environment.” Since the employees in the present organization had relatively static places proximity to the leader’s office will be considered in the analyses. The closer the proximity the better the communication (Sailer, 2010). Regarding this statement and the observation done it seems that the leader theoretically will communicate with the nearest staff. When measured and analyzed proximity is taken from the RM office to the rest of the teams’ positions. It is very clear from Figure 8 that the closest to the RM office is Year 1 then Reception, followed by PS1 and PS2 and lastly Toddlers. Many reasons can influence and contribute to the satisfaction and even the performance of the teams, for example dynamics of a team and culture, not only proximity. Then, the individuals of the teams among them have different proximity and the more individuals of different teams have higher proximity the more integrated is the organization (Sailer, 2010). In correlation to the RM office the managers proximity to the members of the teams is evident. Especially, the red teams or nursery side accessibility and proximity are low which makes the building of the relationships harder.

The connectivity is as well calculated by the segment map as the proximity. There are two kinds of connectivity that is the angular connectivity “cumulative turn angle to the other lines” and connectivity “the straight forward connectivity as per axial analysis” (Turner, 2004, p. 27)

In order to elucidate the relational leadership from a spatial configurational perspective we take these parameters of the potential of the space in the organization. They are the distribution of the teams, connectivity, visibility, accessibility, proximity in correlation to the activities done by the managers which are categorized in: conferring, teaching, eating, interacting, encountering, dwelling, congregating. The above mentioned parameters are calculated with the Depthmap software and analyzed with correlation to the observation.

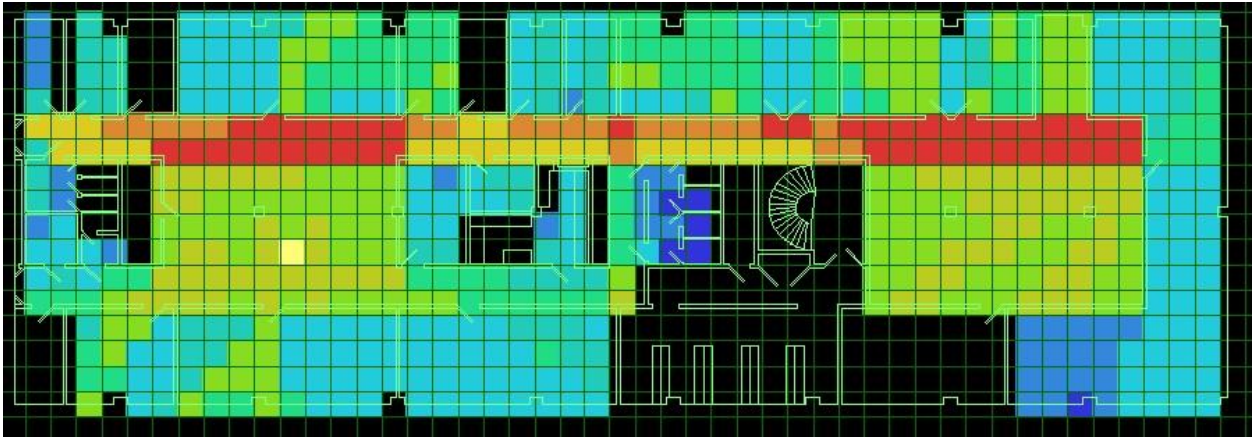
*Visibility graph*

FIGURE 9. Visibility Graph.

The visibility graph gives information on the awareness of what is going on in the organization. Looking at Figure 9 it is evident that the highest visibility is on the long corridor. Therefore, the reception classroom has the highest visibility together with the PS2 classroom. The NVQ office or other managers' office (OM) has a bigger visibility than the resident manager's office (manager, employee office). Hence, the RMO has the least visibility a wise strategy and approach to leadership will be the relational leadership enriched with movement. According to the observation the RM is mainly on the move and does not miss an opportunity to pop-up in the classrooms.

However, sometimes does not necessarily mean that the whole potential of the spatial configuration is being used even though that the numbers are on the side of the space being entirely utilized. This means that a visibility graph can show high visibility but in practice it would not mean that the visibility was utilized. There is a connection between the structure, the hierarchical responsibilities and the spatial configuration. Therefore, we need to take into consideration the overall picture.

Sailer (2010, p.98) mentions that the potential of the spatial configuration is not the same as its realization. Therefore, the spatial configuration needs to be in

sync with the organizational approaches and needs to be realized so the organization will have one segment in favour to grow and develop. Hence, the spatial configuration of the organization is an asset as mentioned by Sailer (2010) the value of the building will be translated into the configurative potential which will help improve organizational behaviour.

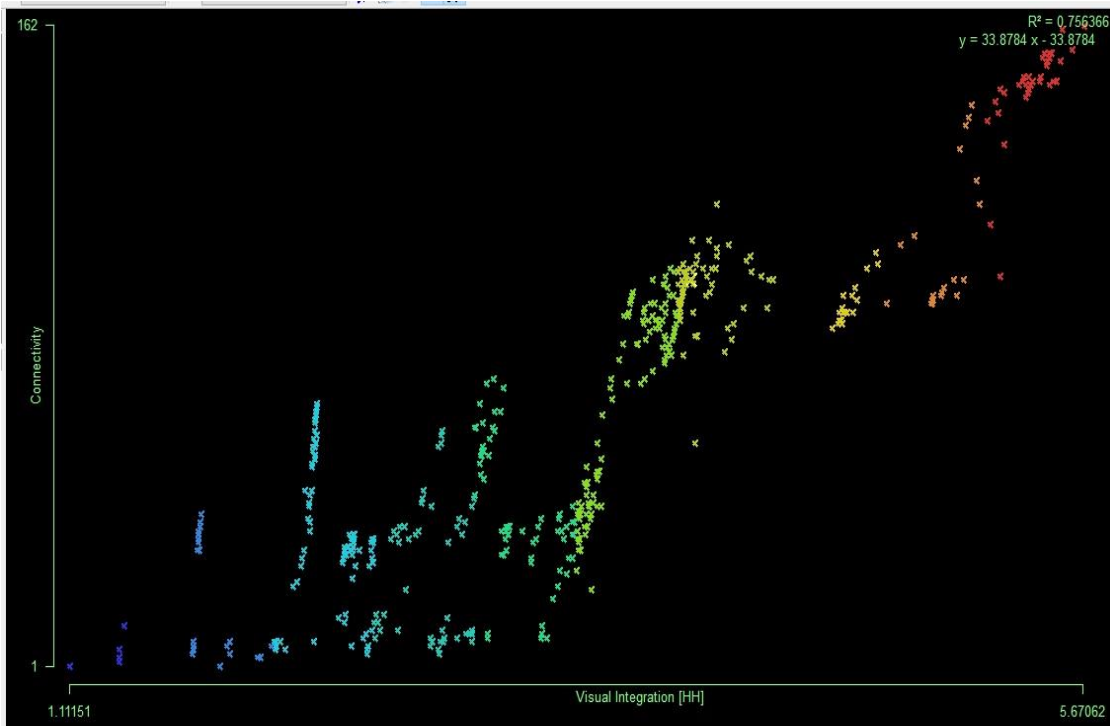


FIGURE 10. Connectivity with Visibility Graph

The connectivity through vision has a relatively smaller coefficient  $R^2 = 0.54$ . When the axial map and the visibility graph are closely looked at together with the observational notes it is understandable that vision is low and the intelligibility is a bit higher. Therefore, it is rather difficult for the employees to see each other and communicate let alone the RM has a low potential of accessing the employees visibly. In addition, there is a low potential for the RM to meet other employees in an unplanned manner. At this point can be mentioned that as a way to utilize the social configuration the RM can adopt a relational leadership with a frequent and

planned movement round the organization. Being able to see and understand the space configuration at this point can help utilize and accommodate different functions within the organization.

#### *Spatial observation analyses*

Because of the nature of the research the leaders of the organization need to be followed, thus the routes of the leaders were marked on a map. Moreover, the buildings are confined spaces and more or less the movement of the people inside the buildings is restricted. By observing the leaders, it can be seen how and if the space layout restricted and controlled the movement of the leaders (Vaughan, 2001).

The whole purpose of the observation of the movement of the leaders is to see how the leaders are interacting, conferring, teaching, congregating, encountering their employees and where they usually eat, dwell. Therefore, the use of space can be explained and the connection with the structure of the organization can be explained better.

#### *Manager's' pattern of movement*

The following analyses were done based on the movement of the leaders within the organization according to the interviews, the observations, the tasks and activities the leaders have at the particular time. Based on the Hillier's (2007) claim that activities in space as encountering, congregating, interacting, dwelling, teaching, conferring all configuration of people in a given space, the observation was done and the outcome was grouped depending on the categories.

For better understanding, below an explanation for each and every word is given based on a dictionary. **Encountering** is a meeting with a person or thing, especially a casual, unexpected, or brief meeting. **Congregating** is to come together, assemble, especially in large numbers. **Interacting** is to act one upon another. **Dwelling** is to live or stay as a permanent resident; reside. **Teaching** is to

impart knowledge of or skill in, give instruction in. **Conferring** to consult together, compare opinions, carry on a discussion or deliberation. Based on the definitions of the activities the managers' movement grouped and divided.

The three managers have distinct responsibilities, rank, office place within the organization. The manager that is responsible solely for this particular organization not considering the other branches has a more active movement round the particular organization. This manager will be referred to as resident manager or RM. The pattern of movement of the resident manager (RM) is as presented in Figure 11.

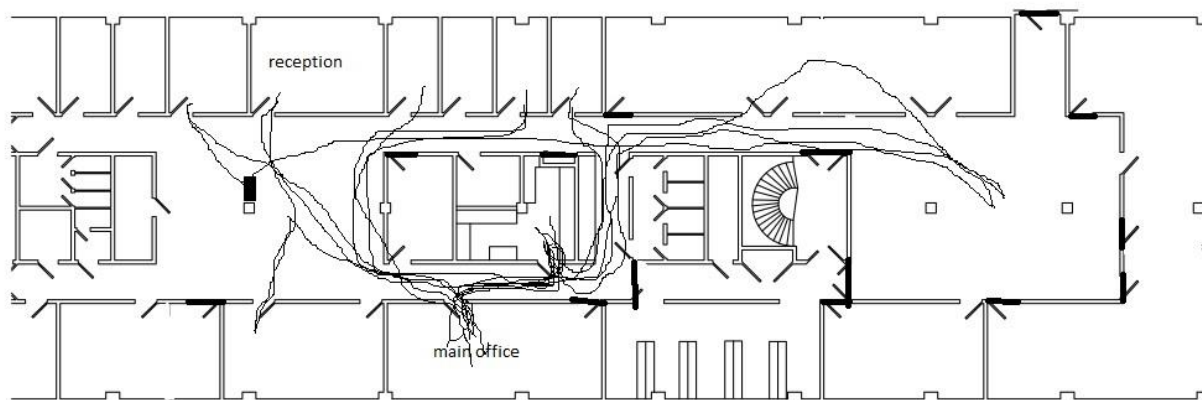


FIGURE 11. Resident Manager Movement

The movements of RM (resident manager) are mainly from the office to the kitchen, nursery and schoolroom area. The meeting points with staff were in the corridor next to the main office, reception, year 1 and PS2 rooms. The kitchen is just across the main office and most of the staff at some point come in there. Most of the staff were able to find RM in the main office where they received instructions or answers. Basically, RM movements were dispersed with various routes. According to the observation based on the seven points on socialization in space syntax theory RM was mostly interacting, followed by teaching, conferring and encountering.

Following Figure 12 is the movement of the other manager who is pretty mobile since her responsibilities are different in comparison to the RM. Looking at figure 12 it is apparent that the movements are mainly concentrated around the NVQ office, main office, kitchen and the accountant's office. One of the most popular places for meeting among staff is the kitchen. Concerning the seven point in space syntax theory this manager did the most conferring, then teaching and interacting.

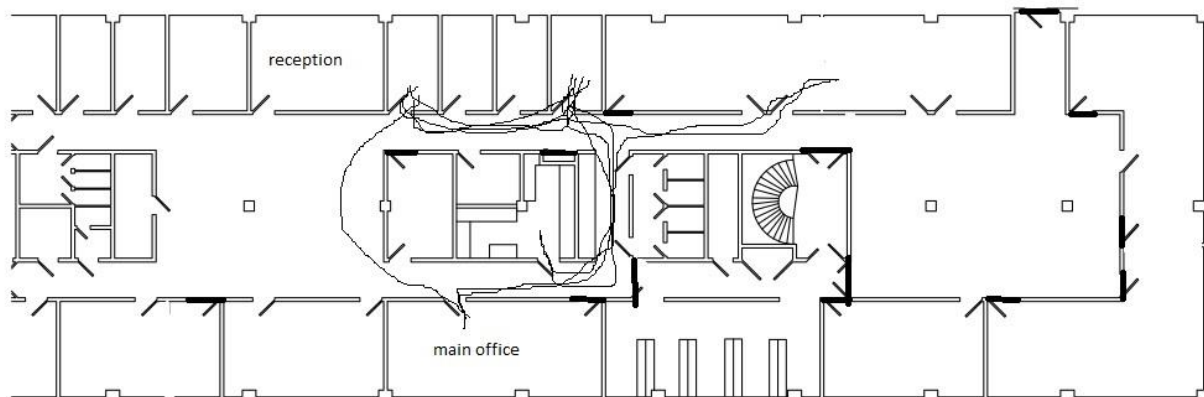


FIGURE 12. Second Manger Movement.

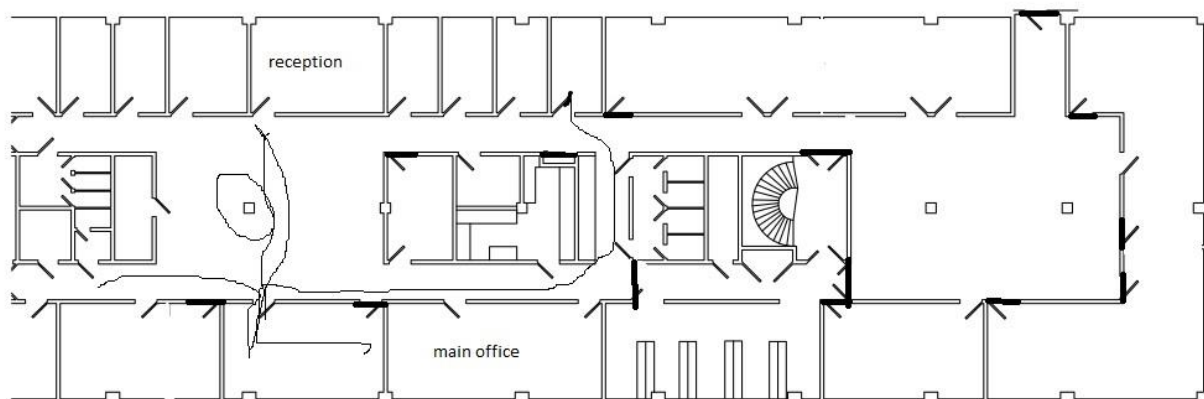


FIGURE 13. Third Manager's movement.

Because the of the planned activity the third manager who is dwelling in the OM office had to stay on the schoolroom side. Her obligation to carry out the inspection held her in particularly in the Year 1 room.

The following chart is representation of the movement of the 3 managers that were observed on the bases of spatial configuration.

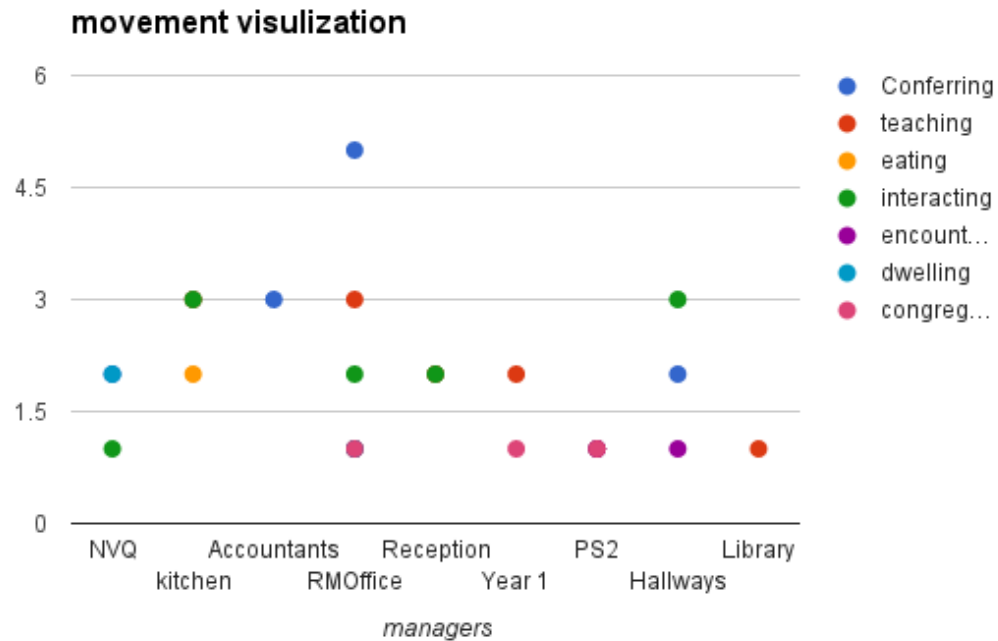


FIGURE 14. Movement Visualization

From the above chart it is very evident that the RM office is the most visited place and the most of the conferring happen there. There is as much as interaction in the kitchen as in the hallways.

In more detail and based on observation it can be freely said that RM makes a lot of rounds all over the premises of the organization. The observation was made in one-hour interval and RM in total had 24 routs round the premises and 18 times interacted with others in shape of: teaching, interacting, conferring, and encountering. On the one hand, the manager seemed to be open to others because

she moved a lot and it was easy assumed by the employees that at some point RM will reach their position. On the other hand, it was hard for some employees to spot RM if needed at a particular time. The interaction among employees and RM seemed opened because RM will approach each team. About spontaneity it is hard to say the interaction was spontaneous because RM had to make an effort to go round the school so to come in contact with employees. In case, RM was needed employees had to make an effort of finding her in the office or somewhere else.

Sailer (2010) has said repeatedly that the spatial configuration for each and every organization is different and should be coinciding with the structure and responsibilities.

## 7 FINDINGS AND DISCUSSION

### 7.1 Qualitative findings and discussions on organization, leadership and space

#### *Organization findings and discussions*

The findings from the qualitative research were concluded from the interview questions and the ethnographic observation. Based on the observation was easy to state that the organization researched had a mixture of factors among the functional and matrix structure. It had high vertical and horizontal differentiation that was shown with number of staff and top down hierarchical structure. The interview answers clearly assured that integration seems to be a combination of functional and matrix structure that combines cross functional teams which are predetermined by the age groups of children. Supported by the observation was noted that every classroom was a team for itself with three to five members maintaining the hierarchy within. All of these teams were separate and could function individually and together to a certain extent so it seemed the teams to be decentralized. In correlation to the manager these teams had a clear reporting relationship, procedures and goals and in the sense of hierarchy decisions were made by the manager which made the teams centralized. Depending on the seriousness and meaning of the issue or simple decision making the teams act as centralized or decentralized. Further on, based on the interviews and the observation it was evident that the organization operated with high standardization on rules and procedures. Therefore, the managers of the daycare center had decided that standardization would be the most appropriate for the organization because of the immense number of employees belonging to different

nationalities. The management team have considered that by “performing by the rules and procedures” the control was easier and the employees would not be confused in performing the tasks (cf. Cunliffe, 2008, p.30). It was mentioned in the interview that the collaboration among the teams was not necessary but still it happened when team members were exchanged. Cunliffe (2008, p.37) mentioned that routines could be considered as relationship building tool and taken for “repeated behaviors and patterns of relationships.” Following the manager of the organization clearly showed that these types of relationships were made. The manager routinely checked on the team's work and was being reported for the work done.

Weber (1922) had mentioned that in a hierarchical structure of an organization authority is present. Moreover, based on the interview one of the managers stated that their relationship with the staff is authoritative and based on the space and structure it was a necessary approach.

#### *Leadership findings and discussions*

Relational leadership theory “focuses on the relational process by which leadership is produced and enabled.” (Uhl-Bien, 2006, p.662.) For the purpose of the research a hierarchical relationship among leader and subordinate was examined. Hierarchy was considered as a beginning to creating relationships (Seers & Chopin, 2012). Barry and Crant (2000) mentioned few scholars (Mintzberg, 1973, Luthans et al. 1985) that ascribed the successfulness and effectiveness of the company on the abilities of the manager to communicate and to establish relationships. In continuation to the relationship building one of the managers mentioned that there are opportunities for the employees to create them when working together on projects, shared supervision of the children, and shared duties in the morning. Appertaining to the interview and the observation, space also had an impact on building relationships among the employees, and the employees with the managers. It was mentioned by the manager that because of the

central areas where employees came together during lunch time, snack time and in the morning when all the kids were situated based on the schedule, employees created relationships. Hence, all of the employees have their own “home bases” as expressed by the manager and during this particular time they can come together.

It was observed and reported by the manager that interaction was encouraged by keeping the facilities clean, setting the furniture in the office as welcoming, and encouraging for interaction. Correspondingly, the managers played an important role in increasing the creation of the relationships by constantly moving round the premises, especially the resident manager (RM). A friendly and positive attitude was noticed towards the employees, as reported by one of the managers on the importance of creating a positive atmosphere. Tackling the leadership issue according to the interview conducted, the RM described her leadership as “open and fair” and different towards each and every employee. The reason for undertaking different styles and techniques in leadership was because each and every person had their own personality. She built relationships and was open to communicate, but she reserved that the last decision to be solely her own supporting the theory of preservation of authority and hierarchy. As observed throughout the interview, the RM portrayed and confirmed authoritative leadership based on the hierarchical organizational structure. In creating leadership there has to be a high level of interaction between the leader and the follower, and when observed the RM had a high level of quality interactions with her subordinates. In comparison with the 6 patterns of spatial configuration she mostly performed teaching with lower rank employees and conferring with higher rank employees. When asked about the relationship building with the employees the RM pointed out that relationships were professional. Another description of the relationship was “courteous and understanding” which promotes high quality of exchange and respect. At the present, research leadership is seen as a behavior on how the leader behaves and creates relationships, and avoids the use average leadership towards the group. The RM has always had the leadership position and

role in interacting with the followers. Most importantly is that the interaction is different towards the employees, it is not an average style of leadership. Overall the approach varies, considering whom within the structure is being approached.

Consider power relationships, where leaders have power to effect change, i.e. to accomplish more than they usually do. This type of leadership can easily be said that is assigned, which means that the RM holds a formal position of a leader. The concepts of power and leadership have a very close connection. "Power is the capacity or potential to influence" (Northouse, 2006, p.9). In this case the two powers are considered position power and personal power. Therefore, the RM used the position power to achieve goals that are already prescribed by the higher management of the organization. When considering power from a relationship point of view, power should be used by both the leaders and the followers to achieve goals. Presently, the organizations have set the main goals beforehand, and the followers are entitled to their own projects and ways to accomplish the bigger theme, or the already set goal by the upper management.

If we look at this type of leadership as a process or as a relationship, we can see that the behavior of the leader and the followers is different. The leader, as stated in the interview, looks for different ways to build a professional relationship with all employees, but not a common one that will suit everyone. The leader is making individual connections and portraying different leadership styles to each and every one. In addition, one fact is that the leadership in this organization is assigned, and the manager is looking to establish a higher level of collaboration with a set of particular followers in order to train and equip them for more responsibilities. When a high exchange exists, then it is unavoidable but to deepen trust and relationship, and give more roles and responsibilities if welcomed by the follower. According to the interview and observation the power that is used is positional and personal. The RM is confident that employees respect her and her decisions. She identifies herself as a leader to be available when people need her and she is fond of moving around so to be accessible to everyone. LMX theory is

concentrated on the relationship that the leader needs to create with its subordinates. In addition, there should be high quality exchanges and the main point is to further build respect and trust in order to achieve high quality partnerships. Based on the LMX 7 Questionnaire answers RM depicts a high quality exchange. LMX theory indicates that the importance of communication helps leaders and followers to create, build and sustain mutual exchanges that deepen the trust, respect and commitment to each other.

From the relational leadership standpoint, in order to connect it with space it is important to talk about relations. The main question that will be attempted to be answered is: How and where relationships form in the organization? A dual communication relationship is examined, meaning a relationship between the person who is assigned for the position of a leader and the person who has the follower position in the hierarchy. The researched company exhibits an asymmetric relationship because of the hierarchical structure and the roles and identities of the employees and the leader.

#### *Space findings and discussions*

Based on the interview RM stated that her office was a dwelling place for less than half of her working time, but mostly it depended on the obligations that had to be done. She spent the rest of the time in moving around the premises executing obligations, creating relationships, delegating obligations, encountering which was supported by the observation. In the interview, it was indicated that utilization of the overall space was based on the needs of the teams, hence the connection of schoolroom and nursery was extremely small. The long corridors were viewed as pleasing parts because of the ability to see and monitor children and employees. However, one manager stated that the long corridors were “annoying” because finding someone was hard and needed a long way to reach a colleague. Based on the interview, space did not play an important role on promoting and developing the skills and communication of the employees, but it was up to their own ability

to develop and build relationships. The other manager supported the notion that the space in the daycare center indeed promoted the development and building of relationships among employees.

### *Space findings and discussions*

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## **7.2 Quantitative findings and discussion**

Space syntax as mentioned earlier is “based on the social relations and how they are embedded in space.” (Sailer, 2010, p. 161.) The outcome is that the manager moves in certain patterns and usually they are concentrated around the tasks that

need to be undertaken. In addition, a walk for the manager can be some kind of “quality control” or simply to be on top of things. The pattern of the movement of the leaders is decided by the space configuration of the building and the task they need to accomplish. Several of the interests of the thesis is the potential for interacting, conferring, teaching, eating, encountering, dwelling, and congregating. Therefore, first will be examined the potential of the building to meet other colleagues analysed by Depthmap. From the previously mentioned analyses in Chapter 6, it can be seen that the connection of the office is quite low which suggests that the opportunities to create relationships are low as well. The axial map Figure 4 clearly shows the segregated places and the observation confirms the low opportunity in socially interacting. Interchangeability also showed the low potential of visually creating a perception of the situation. Correspondingly to the observation and the Depthmap analyses overall showed that the possibility of the social interaction was low.

### 7.3 Reliability

Sailer (2010) explains clearly that many studies used and existing in the fields of organization, space, behavior have contradicting results especially in the spatial syntax studies since they are very new and need further development.

The space syntax theory and method of researching the space has been through scrutiny and criticism on the basis that the spatial elements have not be defined exactly. There are some new developments in the representation of the movement with axial lines like “viewpoint” when they are actually lines of sight. These new upgrades have not been included in the definition. In addition, the axial line map can be different every time and depending on who is making it. The main

back draw is that there is no universal way of implementing measuring and analyzing, thus the method is said not to provide reliable results (Batty & Rana, 2004). Even though Ratti has suggested that the axial maps are arbitrary Hillier and Penn (2004) has clearly expressed that the axial maps are not even close to arbitrary. They propose that the axial map can be “right” when we actually check each line if it is the longest possible, if two lines can make one line, if all the space is covered, etc. In case if one axial map is different from another then Hillier and Penn (2004) say that the difference is minimal and that the usage of the actual axial map is so much bigger that undermines this argument.

Sailer (2012) has pointed out the fact that researchers need to continue working in understanding the functioning of the building and how the configuration of space supports the organization.

Furthermore, leadership is an important concept and in this research was tackled as relational leadership with bases in LMX approach. Bradbury and Lichtenstein (2000) mention that a researcher when going into a relational research needs to connect and build a relation with the research, then need to understand that all organizational concepts are interconnected. In addition, they mention other methodologies like network questionnaires. Making a research on relation has its limitations and weaknesses Bradbury and Lichtenstein (2000) mention few scholars (Earlandson et al. 1993, Miles and Huberman 1994, Pfeffer 1995) that support the motion that is very difficult to generalize on the relation research in any setting and in the organizations as well. Therefore, a research on relation is best to be made by a mixture of methods that can cover as many as possible perspectives.

## **7.4 Limitations and recommendations**

The present research is a discussion of space organization relationship and it is a single study. This case study is not necessarily applicable to other organizations, it merely gives information based on the present organization. It is also conducted only with the leaders, hence no interviews were done with followers. The spatial configuration was only inspected with axial map, segment map, and visibility map. Other relevant instruments were not used. The movement patterns by the leaders were inspected and no others (e.g. the follower's). Therefore, a holistic picture cannot be created. The proximity and interaction of teams in the organization was not investigated but in accordance to the proximity from the office to the other independent cells there was a difference. Meaning that the closest classrooms had an easier interaction than the further ones.

The leadership within the organization is only considered from the leader's side, hence no followers were interviewed or had a questionnaire. The shortcomings of this study are that the results lack the power to be applicable to other organizations and the side of the followers is not inspected. The relationship was only investigated from the leader's side. There is no clear conclusion about the quality of the relationship. Another weakness of the research is the observational time frame which only lasted one hour. Therefore, relevancy to other periods is questionable.

Along with the researched topics another perspective can be the network and netgraphs, where there is no analyses of the movement flow of the employees, but only the observation data is taken into consideration.

Future recommendations for researching the topic of space and leadership are the need for more case studies in more complex buildings. The scope of the social connection of space and leadership needs better measurement tools, focusing on varied connections of the leadership and space, and contributing to the clarity of relationship definition in leadership and space.



## 8 CONCLUSION

For the aforementioned research questions a short discussion structured in two parts will address the conclusion of the research. As previously mentioned the issue that is a focal point of this research is “to understand the relation among physical space and relational leadership from a social construct point of view.” The first part will be addressing the physical space of the organization and the second part the relational leadership.

### 8.1 Organization

Taking into consideration the function of the organization it is evident from the interviews and the axial map that the relation between space and structure were coherent. It was evidenced from the axial map that the connection was poor among the teams and the leader’s office. The organization had taken this weak connection and turned it into an advantage to give independence and autonomy to the teams working in the organization. Based on the low outcome of connectivity and visibility which entirely coincides with the structure of the organization allows a conclusion that spatial configuration is in favour of the structure of the organization and does not disrupt the workflow. Every team is its own unit and functions independently. The movement in the organization was strongly programmed because of the obligations and schedule people had, and the nature

of the barriers. Moreover, the office where usually employees enjoy their lunches is secluded and peaceful, and in combination, employees of groups with the same working schedule will get a chance to communicate and develop relationships.

## 8.2 Leadership

Based on the observation and on the LMX 7 Questionnaire (Northouse, 2006) and spatial configuration analyses the RM showed high mobility and high exchange, as a result of the connection of space, which was moderate to slightly high. The style of leadership that the RM illustrated was very much in synchrony with the organizational structure, space and personality. As for her personal belief to work among and with the children, as well as other employees, she made a great amount of routs in order to be accessible to the employees. Based on the organizational structure which is hierarchical, she adheres to keeping the decision making, and teaching. Considering the spatial analyses, the position of the office did not have a good connection. Therefore, the RM had to be mobile and seen by the employees. Considering the quality of the relations the RM built with employees, those with the furthest units' relations was the weakest. The configuration of the physical space asks for the need of moving and creating relationships when interacting, conferring, encountering, teaching, and congregating. Based on the observation and both interviews with the RM and the OM showed that the structure was intentionally chosen as hierarchical, so all the decision making is limited to the role the person has. Therefore, most of the decisions need to be made by the RM and in case issues are bigger or more complex, decisions are made by upper management. Leadership practices are based on structure so authoritative style comes across mixed with high quality exchange. When observed the RM will interact with

employees when asked about advice or instructions for a matter, or offers help and instructs. Because of the lower visibility in the organization, the manager needed to make rounds to interact hence, leadership is influenced by the space. From the observation on the quality of the relationship it was easy to say that the RM failed in constructing quality relationships with the most segregated team. Keeping in mind that the observation was periodical the RM did not have a chance to contact the toddler teams at all. Regarding that communication is an important element of building relationships, it can be concluded that space has influence on the quality of the relationships. Sailer (2010) has mentioned that openness and spontaneity can help into building better relationships. On this account the space configuration of the researched organization does not support spontaneity because of the schedule and the facility itself.

In brief, leadership practices depend on many components, in this case organization structure and space had influential point on leadership. The connection is that leadership is researched as an entity and space researches the movement of the person on how he/she behaves, and how it all influences the communication or how the relation is created.

In conclusion, the relationship among physical space and relational leadership was not clearly answered. The discoveries showed that there was relation between the structure and physical space. Physical space reflected the organizational structure which influenced the leadership practices.

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## APPENDICES

### Appendix 1 In-depth interview questions

Interview sample questions:

(intro questions about the history and getting a greater idea about the school and the leader)

What are your position and responsibilities in this organization?

When did you join in the organization?

Why did you wanted to join this organization?

What did you study?

Have you worked for other organizations before?

What is the educational philosophy of the school?

Space

Where is your office and how much time do you spend in a day?

How much time do you physically spend in the premises?

Were you responsible for any of the decisions made about the physical space in this school?

How would you describe the physical space of the school?

What is pleasing and annoying about the physical space?

What are the advantages and disadvantages about the physical layout of the school?

What is pleasing about the spatial situation?

Would you consider the spaces of the school as rather a promoting or inhibiting means to its prosperity and development? how?

Does the space support the educational philosophy of the school?

How do you keep your door in different circumstances? why? open/close

How would you describe the working environment?

How would you describe the organizational culture?

Is there something that you would change in terms of physical space, working environment and organizational culture?

Would you consider the spaces of the school as rather a promoting or inhibiting means to its prosperity and development and how?

Are there any plans for refurbishments?

What is your perception on the building in terms of physical space? (leader's perception on the building?)

Which facilities do you use the most?

## Structure

Do you think that the structure of the place serves its purpose?

How do all autonomous parts of the school interplay and collaborate? (classrooms, kitchen, restaurant, offices)

## Power

How would you see the hierarchy in the school?

How would you describe the relationship among people in different position?

How are decisions made?

## Relationship

Who do you work with closely here in this organization/school?

Who do you report to?

How do you communicate with the other employees?

How do you inform employees?

Do you think they are well informed about the objectives of the company?

Do you think they are informed about their rights?

Do you think they are informed about clearly about events?

With whom do you have lunch or spend your break and where?

How do relations between people emerge here? what does the organization do?

What does space do?

How do different cultures of people intermingle here?

## Learning organization

Would you see the school as high performing organization? how and why?

What are the strengths and weaknesses of the school?

What would you regard as essential for an organization in its constitution as learning?

## Culture

How would you describe the organizational culture?

How do you motivate your employees?

Can you think of a problematic situation and how typically would you handle it?

**Appendix 2 LMX questionnaire 7 inspired questions.**

Do you know where you stand with your follower?

Do you usually know how satisfied your follower is with what you do?

How well do you recognize the employees' potential?

What are the chances that you as a leader would use your power to help solve problems in your work?

What are the chances that you would help an employee at your expense?

How would you characterize your working relationship with your followers?