



Research Article

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Proxemics in Computer Skills Training of Persons in Their Late Adulthood

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Abstract

Edward T. Hall presented three aspects of the perception of space: the infra-, pre-, and microcultural dimensions. This theory is the basis of an analysis rooted in years of experience in conducting computer skills training courses for seniors. Proxemics has great importance in IT education of seniors in all three dimensions: infra-, pre-, and microcultural. In the infracultural aspect it ought to be assumed that there exist some fundamental discrepancies arising from the differences between generations. That is why it is necessary to ensure that there is a common understanding of perspectives and relations with the virtual world of the generation of teachers (Digital Natives, Digital Immigrants) and the students (Digital Foreigners, Digital Aliens) that is decisive in the effectiveness of the computer skills training courses. In the precultural aspect it is crucial to take into account the involutory processes that condition the perception and the learning of seniors. The deteriorating hearing, eyesight, as well as the lowered acuity of other senses may lead to a number of difficulties in seniors' computer skills training. In the microcultural aspect, in turn, what is perceived by seniors as a positive element is the social distance with the correct arrangement of classroom space which may at the same time allow the students to co-arrange the learning space.

Keywords: space, proxemics, generational differences, seniors, IT education

"Our students have changed radically. Today's students are no longer the people our educational system was designed to teach" (Prensky, 2001).

1. Introduction

The term "space" is not unambiguous. Because it is applied in exact sciences – mathematics, technical sciences – architecture, natural sciences – geography, humanities – history, philosophy, and social sciences – psychology, political science, as well as interdisciplinary sciences, such as anthropology and pedagogics, it takes on a number of meanings. As Z.E. Roskal points out "space is one of the most general categories in philosophy, while at the same time being central to mathematics, natural sciences, and humanities" (Roskal, 2008, p.279). In mathematics space was closely connected with three-dimensional (Euclidean) geometrics. In contemporary mathematics it is defined as "a collection of objects which, due to the analogy to geometrics, are named points (...), properties of these objects are defined as the relations between such »points«" (Roskal, 2008, p.286). In physics, in turn, the term "space" is closely connected with "matter" and "time" and as a result it has been extended to become "space-time", which is defined as the collection of all the events that "each can be located in space-time by providing four coordinates – three of which define the location in space and one in time" (Roskal, 2008, p.288). However, in the reflections on the importance of space in the education of persons in their late adulthood it is crucial to discuss the term from the perspective of humanities and social sciences, it is also justified to select a theory

to constitute the basis of the research. The term is widely applied in history studies, as well as cultural anthropology, psychology, sociology, and economics. The conducted research pertains to the problem of the origins of the perception of space, as well as the limitations of sensory perception. Another interesting issue is the analysis of symbolic space. The majority of the explorations is based on the theory of proxemics, developed by Edward T. Hall, which has been juxtaposed with observations made during numerous computer skills training courses for seniors. In the further part of the paper the main theses of the theory of proxemics by Edward T. Hall are presented along with conclusions from the conducted observations, in the form of comments.

2. Proxemics

Edward T. Hall described social and individual space and their human perception in his celebrated book *The Hidden Dimension* (Hall, 1990). Therein the author defined three aspects of the cultural perception of space.

2.1 *The infracultural dimension (behavioural, rooted in a person's past).*

E.T. Hall assumed that space is a specific product of culture, and the theories pertaining to it the author called proxemics. He assumed that language is something more than merely a means to express thoughts and that it is also the main factor that forms the process of thinking. The human perception of the surrounding world is shaped by the language that one speaks. Perception of space is also defined by the intellectual reality that one resides in. "Selective screening of sensory data admits some things while filtering out others, so that experience as it is perceived through one set of culturally patterned sensory screens is quite different from experience perceived through another" (Hall, 1990, p.2). This dependence is reflected in how people shape reality through architecture and urban planning. Different communities use their senses in the process of interaction with the animate and the inanimate environment and they present numerous discrepancies (Hall, 1990, p.2). E.T. Hall introduces the term "extension" – people use "extensions" to their bodies. These extensions have functions which are being perfected and specialised. The extensions captured and replaced nature, and people have created a new dimension – culture (Hall, 1990, pp.3-5). This proposition is crucial in a number of perspectives, including education. "As man developed culture he domesticated himself and in the process created a whole new series of worlds, each different from the other. Each world has its own set of sensory inputs, so that what crowds people of one culture does not necessarily crowd another. Similarly, an act that releases aggression and would therefore be stressful to one people may be neutral to the next" (Hall, 1990, p.6).

When publishing his ideas in 1969 E.T. Hall mainly addressed the multi-cultural perception of space and its influence on the members of the particular communities. In the times of the internet this theory can be considered from the perspective of generational stratification. Z. Melosik in his description of the "instant culture" that is to a large extent conditioned by the instant access to cyberspace and the opportunities provided by it employs the term "global teenager". The author uses the term to relate to big city middle class youth who regardless of their place of residence are characterised by a similar identity, lifestyle, or the model of consumption (Melosik, 2000). It needs to be noted that the term was coined in the 1980s. One can find it in Kevin Kelly's *Apocalypse juggernaut, goodbye - population growth - The Global Teenager*. This author stated that the number of teenagers would dramatically increase after the year 2000 and that this group would then demand more consumption. This phenomenon, as K. Kelly predicted, could change the shape of the contemporary reality, as well as the future, because as a result the world would be filled with Global Geezers (Kelly, 1990). For the global teenager the world has grown smaller and thanks to the development of information and communications technology "the neighbourhood" is everywhere. The time and space have shrunk, the transfer of information is instant and unlimited, and the location does not matter (Kelly, 1990). The question arises whether the generational stratification is currently significant enough to shape behaviours – and in the context of this research also educational needs – in connection with being a part of a particular age group in an

equal or a higher degree than the creation of these behaviours and needs due to being a part of a particular culture.

What seems to justify an affirmative answer to this question is the generational division presented by Marc Prensky in *Digital Natives, Digital Immigrants* (Prensky, 2001). He notes that "Today's students have not just changed *incrementally* from those of the past, nor simply changed their slang, clothes, body adornments, or styles, as has happened between generations previously. A really big *discontinuity* has taken place. One might even call it a »singularity« – an event which changes things so fundamentally that there is absolutely no going back. This so-called »singularity« is the arrival and rapid dissemination of digital technology in the last decades of the 20th century. Today's students (...) represent the first generations to grow up with this new technology. They have spent their entire lives surrounded by and using computers, videogames, digital music players, video cams, cell phones, and all the other toys and tools of the digital age. Today's average college grads have spent less than 5,000 hours of their lives reading, but over 10,000 hours playing video games (not to mention 20,000 hours watching TV). Computer games, email, the Internet, cell phones and instant messaging are integral parts of their lives" (Prensky, 2001). This generation is called Digital Natives because "students today are all "native speakers" of the digital language of computers, video games and the Internet" (Prensky, 2001).

The older generation that was not born in a world dominated by cyberspace, but who have learned it later on in their lives, is in a different situation. This generation is fascinated with latest technologies, they are able to easily find their place in most of the aspects of the virtual world, to adopt new solutions and to use them in their everyday lives. This, however, happens through learning. The process can be compared to learning to speak a foreign language – one can master it, but it will never become one's mother tongue. That is why this generation has been called the Digital Immigrants (Prensky, 2001).

When employing this classification one ought to ask about the yet older generation. In reference sources they are named Digital Foreigners (Thomas, & Thomas, 2006) or Baby Boomers (See: *Baby boomers*; Grzesiak, n.d.). These terms are used to denote the generation who are now in their 50s and 60s and who are aware of the existence of the cyberspace and who have some experience using it and who, nevertheless, treat it as a foreign environment, who feel that they do not belong to virtual communities, and who are on the internet only because they need to (because of work, communication, etc.).

The generations of Digital Natives and Digital Immigrants, and to a necessary extent also Digital Foreigners, shape the contemporary world which is characterised by a rapid development of technology and the key importance of communication. That is why the contemporary society is called the information society (IS). This society, as it is stated in a report by the IBM Community Development Foundation, is "characterised by a high level of information intensity in the everyday life of most citizens, in most organisations and workplaces; by the use of common or compatible technology for a wide range of personal, social, educational and business activities; and by the ability to transmit and receive digital data rapidly between places irrespective of distance" (Habib, et al, 1997, p.3). In accordance with this view information plays a crucial role in the society's life and information technologies are indispensable in nearly all aspects of human life. Tomasz Goban-Klas and Piotr Sienkiewicz point out that "it is a society in which it is not direct contacts (...) but contacts through media that constitute the dominant form of social contacts" (Goban-Klas, & Sienkiewicz, 1999, pp.42-47). The aforementioned definitions show how the significant quantitative and qualitative changes were caused by the progress of technology. Lack of ICT skills makes it impossible to fully participate in social life. That is why one can mention the phenomenon of digital divide, or e-exclusion, i.e. the lack of participation in all the aspects of social life that require ICT skills. In Poland there is a high number of the members of the generation who have no ICT skills at all. They can be called Digital Aliens. They are the people who have had no contact with the virtual world, who are afraid of having to learn computer skills, and who are simultaneously excluded from social life because of their lack of these skills. According to the Social Diagnosis of 2013 persons aged over 60 constituted ca. 25% of the population of Poland (Czapiński, & Błędowski, 2014, p.298). In this group only 7% work, the rest are pensioners (76%), handicapped (12.9%), unemployed (1.2%) and others not active professionally (2.9%) (Czapiński, & Błędowski, 2014,

p.298). Among the persons aged 60-64 35% use the internet, but in the group of those older than 65 it is only 14.1% (Batorski, 2014, p.325). That is why 64.5% of people aged 60-64 and 85.9% of those older than 65 are Digital Aliens. A substantial part of the social group of people in their late adulthood are affected by e-exclusion.

Computer skills training courses constitute the numerous educational efforts made to counter e-exclusion and the social exclusion of the entire Digital Aliens group. Nevertheless, taking into account generational stratification one ought to bear in mind the fact that both teachers and students in this pre-figurative educational situation use different languages, meanings, and represent different cultures defined by diverse lifestyles, images of the virtual world, and approach to cyberspace. In connection with computer skills training of Digital Aliens Marc Prensky's statement that "our Digital Immigrant instructors, who speak an outdated language (that of the pre-digital age), are struggling to teach a population that speaks an entirely new language" (Prensky, 2001) needs to be reversed. The Digital Natives and the Digital Immigrants, who use the language shaped by everyday life in cyberspace, try to educate the generation for whom this language is meaningless. The vocabulary of the teachers may, of course, be defined, nevertheless the question arises as to whether "defined" also means "understood". To return to E.T. Hall: "Whenever people talk, they supply only part of the message. The rest is filled in by the listener. Much of what is not said is taken for granted. However, cultures [generations – E.J.R.] vary in what is left unsaid" (Hall, 1990).

2.2 *The precultural dimension (physiological).*

E.T. Hall discusses the rules of how people perceive space. The author divides senses into two categories:

- 1) Distance receptors, investigating distant objects – eyes, ears, and nose. The ability to perceive is mediated through eyesight (the most developed sense in a human being), hearing, and smell. Their reach and the individual (and social) selectivity creates the visual, auditory, and olfactory space.
- 2) Immediate receptors, perceiving the immediate surroundings, the world of touch, sensations that we receive through the skin, membranes, and muscles; the senses of touch and taste. The correlated terms are kinaesthetic space (in which we can move, its boundaries are defined by the elements that limit movement which can be perceived through the sense of touch), thermal space (that may pertain to the temperature of air, objects, and even people in the immediate surroundings), tactile space (within this space there is the active touch ("seeing" through touching) and the passive touch (being touched) (Hall, 1990, p.41).

Certainly the differences between the perceptions of people of the same culture are smaller than of those with different cultural backgrounds. What is more, in computer skills training of seniors one ought to take into account the phenomenon of senile involution, which also affects the senses.

Late adulthood, known also as the late maturity stage or old age is the age of over 65. Many researchers distinguish early old age (65-74 years of age) and late old age – people older than 75. Old age is defined in reference sources as "another developmental stage in the life of a person, diverse as to the tempo of changes, presented tasks, existing needs, and the opportunities to fulfil them" (Steuden, 2012, p.9). It is the time when one undergoes a number of physiological and psychological changes that influence one's learning in the late adulthood.

The process of learning is a constant emission and reception of certain stimuli, it is a process of communication with the environment. First and foremost, learning is the reception of information through the eyesight analyser (visual information) and the hearing analyser (verbal information). What is also crucial is the receptors of proprioception, balance, touch, as well as pain. The worsening of the ability to perceive clearly and correctly begins in one's 50s. It is common that the eye's ability to accommodate is decreased, which leads to senile amblyopia, typical of farsightedness. However, the greatest problem lies in the loss of eyesight acuity (Stuart-Hamilton, 2000). Visibility threshold rises with age, which means that older people's reaction to weak light is poorer (Elias, Elias, & Elias, 1977). It has also been observed that it takes longer for seniors to

process visual stimuli, which calls for a longer visual presentation in class. The visual field changes, as well, which limits peripheral eyesight, particularly after the age of 75.

Hearing is also crucial from the point of view of didactic communication, because it allows one to receive auditory information, including verbal messages. The sense of hearing deteriorates systematically throughout one's adult life, and certain environmental factors may significantly accelerate this process. It has been confirmed that men lose their hearing faster than women (Pearson, et al, 1995). However, the most common problem is the senile hearing impairment that is characterised by a faster loss of the reception of high frequency sounds compared to those of the lower frequency (Stuart-Hamilton, 2000). The remaining senses such as smell and taste are of lesser importance in the process of didactic communication, however, the senses of touch and pain are employed in the process of learning new skills, e.g. motor skills, that are needed in using computer input devices such as the mouse or the keyboard.

2.3 *Microcultural dimension (the level on which general proxemic perceptions take place).*

There are three aspects here:

- 1) Fixed-feature space – the space is “is one of the basic ways of organising the activities of individuals and groups. It includes material manifestations as well as the hidden, internalized designs that govern behavior as man moves about on this earth” (Hall, 1990, p.103). Architecture and urban layout are crucial in this aspect. These can be selected but not influenced by an educator.
- 2) Semifixed feature space – includes socialfugal and sociopetal spaces – it may have an enormous influence on an individual's sense of comfort in e.g. the space of school. Semifixed feature space is shaped by interior arrangement.
- 3) Informal space, which consists of four distances: (a) intimate distance – in which “the presence of the other person is unmistakable and may at times be overwhelming because of the greatly stepped-up sensory inputs” (Hall, 1990, p.116), (b) personal (individual) distance, being the radius of ca. 45-120 cm around a person, it is the situation when the other person is within an arm's reach, so that touch can be initiated if desired, (c) social distance, the radius of 120-160 cm, in which all non-personal business is done, (d) public distance, exceeding 360 cm, at which situations such as public speaking take place; all the distances Hall divides into far and close phases (Hall, 1990, pp.113-125).

During the conducted training courses it was observed that the microcultural space is of great importance for the sense of comfort of individuals in their late adulthood. In the education conducted with the use of the class/lesson method the traditional organisation of a classroom is predefined. It typically consists of rows of computer desks. The persons sitting at the desks that are further in the back can observe the changes on the computer screens of those sitting in the front. This leads to a feeling of discomfort in students, who believe they are treated unfairly. People in the front rows feel that they are being watched, on the other hand, those in the back have moved from social to public space and they often mention the lack of direct contact with the teacher. In the case when the desks are set up in a “U” the seniors did not mention unfair treatment of students, and they did not feel watched. In the training sessions that relied on mobile devices what had great positive influence on the students' comfort was allowing them to co-arrange the educational space – they were free to form groups, and to leave the classroom for less formal space.

3. Conclusion

The theory of proxemics developed by E.T Hall is of enormous importance in computer skills training of persons in their late adulthood. In the infracultural space it can be assumed that there exist fundamental discrepancies that result from age, rather than culture, as Hall proposed. It is crucial to understand the virtual perspectives of the teachers (Digital Natives, Digital Immigrants) and the students (Digital Foreigners, Digital Aliens) which condition the effectiveness of computer skills training courses. In the precultural aspect it is necessary to take into account the involutory processes that influence perception and, as a result, the seniors' learning. The deteriorating

eyesight and hearing as well as the blunting of other senses may lead to a number of difficulties in the computer skills education of seniors. In the microcultural space, in turn, the education process must take place within social space with a proper arrangement of the classroom. When possible seniors should also be allowed to co-arrange the educational space.

Seniors are a social group that is particularly threatened by marginalisation, social exclusion, digital exclusion, and a number of other negative factors. When considering the quality of life in old age one ought to notice the potential of education. One should take into account the specifics of learning in old age, and that is because the idea of lifelong learning is not only an option in the contemporary world, it is a necessity. This appears to confirm the statement that lifelong education "is a reflection in people's awareness of the necessity to keep learning, to solve new, increasingly complex problems of social and individual life" (Turos, 2004, p.53).

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