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ORGANIZATION OF EDUCATIONAL SPACE

The research confirmed the relationship between the location of the student in the classroom and their activity. In practical and theory don't exist one optimal way of arranging the class space. It depends on the number of people in the group, the type of a lesson, an approach of the student and teacher, a mood or even the time of the day. This paper presents advantages and disadvantages chosen setting and are given recommendations their use.

1. Introduce

For centuries, the traditional system of the space arrangement of as far as the teaching goes has not significantly changed. Analyzing the arrangement of individual elements defining, among others, the position and the role of the actors of the educational process, can be traced back to the ancient analogy. According to R. Meighana [1993, p. 85] it has to do with a lack of competence of the vast majority of teachers, which corresponds to the traditional set of tables because it allows them to take the vision and creates the impression reign. The researchers demonstrated that the spatial arrangement is important for a distance of less than 45 centimetres, referred to as an intimate space, which is crucial for the comfort and the sense of security. The violation of this space against the will makes everybody feel uncomfortable [Hall 1966].

It should be noticed that:

1. The arrangement of tables and chairs in the classroom affects the outcomes of the learning process.

2. There are many possibilities for the arrangement of space science.

3. The role and position of the teacher changes depending on their position in space.

Sometimes a slight change in the arrangement changes the attitude of students to the problem and allows for other learning outcomes. It is possible to change the arrangement of space without changing the layout of tables entering a small modification of the set of chairs or suggesting the students to turn the chair in order to make a pair with a person of higher rank.

The way space is arranged is depends on the goals of education, which determine the type of student activity and is designed by the teacher.

The research psychologist Augustyna Bańki [Banka et al 2002], conducted the research in schools in which the organization of space science took the traditional form. He confirmed the relationship between the location of the student in the classroom and their activity. It is the highest, if the student sits in the first row of tables, closest to the teacher and in the middle rows. The least active are the students occupying the last place beneath a window or in a row against the wall. The difference between the most and least active students reaches almost 100%. These studies show that student's activity decreases with the distance from the teacher. In addition, the research of A. Nalaskowski [2002, pp. 50-51] shows that the level of acceptance and the way the teacher perceives a students is dependent of the student's place.

The research conducted by M. Nęcka (2002) related to the links between the type of space and behaviors, emotions and social links show that the character of the space proposed to the students can become a factor which strengthens the work or on the contrary can disrupt it. A certain direction of thinking shows the impressions done by A. Nalaskowski [2002, pp. 50-51] who notices that there is no one optimal way of arranging the class space. It depends on the number of people in the group, the type of a lesson, an approach of the student and teacher, a mood or even the time of the day. The teacher during the process of education does not have to stick to one setting of the classroom.

In practice there are different ways of arranging the tables and students' chairs. They are described below.

2. Auditorium

The traditional setting is adjusted to giving the content by the teacher and the student is limited to a passive listener, who takes down the notes and answers the questions which are asked. Such a setting is appropriate for a lecture and a presentation conducted by a teacher [8].

Table 1. Advantages and Disadvantages auditorium

| Advantages	Disadvantages
Students can work individually When it is important to avoid communication among the students	Some students may be unable to see a teacher or the presented material as well as the content written on the boards, The teacher is not able to have an eye-contact with the whole group, Students cannot have eye-contact with other students, Students cannot communicate freely

Based on: http://magdalipiec.pl/wp-content/uploads/2012/09/Ustawienie-%C5%82awek.pdf on 12.05.2016
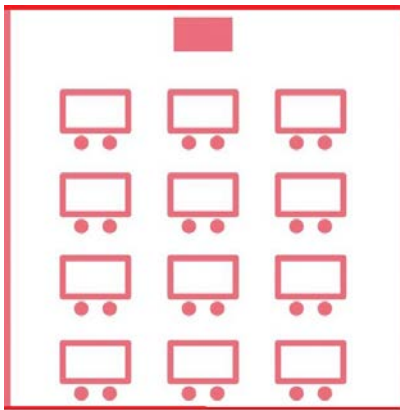
Fig. 1. Tradional setting

Fig. 2. V setting of the classroom

Fig. 3. University lecture (illustration from the mid-14th century)

Fig. 4. Aula 329, Lodz University of Technology

Sometimes, instead of a traditional setting, when students can be placed only at longwise tables, the V setting is used (it can be used also in the team of more than 30 persons).

This setting:
− decreases the distance between the students,
− students when speaking can see many listeners,
− it is more possible to have an eye-contact than in a traditional setting,
− it is necessary to place the tables a bit further from the middle of the class.
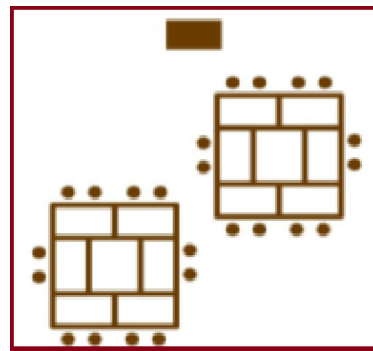
2. Club or segment setting

Club or segment setting means placing students around the tables creating in this way centers both of team work and individual work. It increases the number of students engaged in the educational activities and it also integrates them. The segment setting requires an active support from the teacher for the work of every table.

A very flexible organization of a learning space is a feature of the segment setting. It is good for the different types of classes and it allows for an easy modification- without engaging strengths and noise. The segments can be enlarged or decreased, depending on the needs.
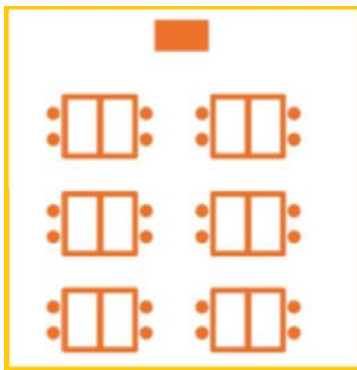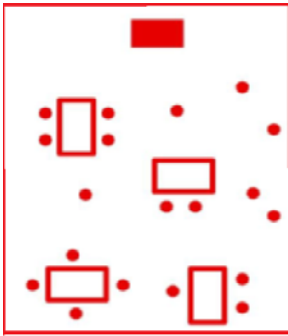

http://blogiceo.nq.pl/edukacja1klasa/files/2014/10/USTAWIENIA-Stolik%C3%B3w-w-sali-lekcyjnej_end.pdf

Fig. 5. Segment setting for
small groups

http://blogiceo.nq.pl/edukacja1klasa/files/2014/10/USTAWIENIA-Stolik%C3%B3w-w-sali-lekcyjnej_end.pdf

Fig. 6. Segment setting for
big groups

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WIENIA-Stolik%C3%B3w-w-sali-lekcyjnej_end.pdf

Fig. 7. Segment setting preferred
during innovative or artistic
activities

IFE-TUL - TEMPUS project

Fig. 8. Club setting, TUL, International Faculty
of Engineers

Table. 2. Advantages and Disadvantages Club or segment setting

| Advantages	Disadvantages
Enhances the students' motivation Facilitates the verbal communication among the students Allows for beneficial interactions of students with the different levels of achievements (a creation of mutual relations), Reduces undesirable behaviours, Helps to develop the skills needed on the labour market and in the civic society, Promotes active learning, Facilitates new ideas, Teaches respect for diversity, Teaches objectivism while evaluating (oneself and others), Teaches the responsibility for own learning process/ self-education, Improves the effectiveness of the teachers' work, Allows for an easy work in sub-groups, Allows both for an individual work of students and of the groups, Allows for an easy communication with the members of the sub-groups,	Bigger freedom and a higher level of noise, Possibility of exchanging the contacts among the group members, A possibility for a teacher to approach only selected teams, Some students must turn heads and chairs in order to listen to the teacher's remarks, Great for small groups, Limited control of the teacher, Can provide a feeling of the mess, The group is likely to have discussions not related to the given task, It requires from the teacher a big activity while controlling the single groups.

Teacher supports the groups, can approach them and provide clues or consultations but is not a member of any team, Stipulates the independence of students and groups, The modifications of settings are possible ensuring more independence and privacy.	

Prepared on the basis of: Bańka A., Architektura psychologicznej przestrzeni życia. Behawioralne podstawy projektowania, Wydawnictwo Gemini, Poznań 1997 and Nalaskowski A., Przestrzenie i miejsca szkoły, Impuls, Kraków 2002, pp. 48-54.

4. Setting in the shape of U letter, the so-called semicircle

This kind of setting allows a student to maintain a good contact with students, monitor their individual work; make student participate actively in the classes. The teacher can easily change the distance.
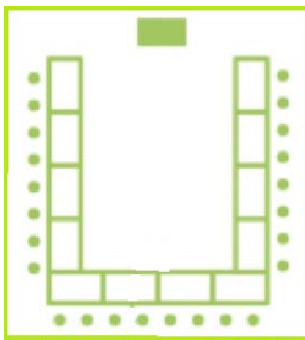
Fig. 9. Scheme how to arrange
a semi-circle

Fig. 10. Specific arrangement of the room
in a semicircle- International Faculty
of Engineering, Lodz University
of Technology

Table 3. Advantages and Disadvantages setting in the shape of U letter

Advantages of semicircle	Disadvantages of semicircle
A teacher has a free access to everybody, A teacher can control the work, A teacher is simultaneously visible for everybody, A teacher can easily demonstrate additional material,	If it is too big, students sitting on the edges can create their own groups, talk together and not participate actively in the classes

The materials can be handed from hands to hands, A teacher can easily arrange work in pairs and in groups, This kind of setting allows for an easy eye-contact among the participants and allows for a discussion, This setting allows to move around the classroom, This setting enhances the feeling of safety in the group for the teacher, The teacher is excluded from any group and can take a privileged position, The teacher can easily have a direct contact with a student by entering a semicircle	

Prepared on the basis of: Bańka A., Architektura psychologicznej przestrzeni życia. Behawioralne podstawy projektowania, Wydawnictwo Gemini, Poznań 1997 oraz Nalaskowski A., Przestrzenie i miejsca szkoły, Impuls, Kraków 2002, pp. 48-54.

4. Conference table (seminar table)

The arrangement of tables into a conference table is quite similar to a trial to arrange them in U letter but the teacher's position is privileged. Such an arrangement of the space greatly minimizes the meaning of the teacher and at the same time increases the meaning of other participants. If the teacher sits in the middle of the shorter part of the table, it will cause a more official and managerial character. If the teacher sits in the middle of the longer part, it will give a more democratic character. However, the teacher will be well visible and heard from every place.

Fig.11 Scheme of conference setting

Fig. 12. Examples of settings

Table 4. Advantages and Disadvantages seminar table

Advantages	Disadvantages
Allows for a good communication, Allows to exchange easily documents and other materials Provides a feeling of equality	Allows a teacher to have a close and direct contact with every student

Prepared on the basis of: Bańka A., Architektura psychologicznej przestrzeni życia. Behawioralne podstawy projektowania, Wydawnictwo Gemini, Poznań 1997 and http://magdalipiec.pl/wp-content/uploads/2012/09/Ustawienie-%C5%82awek.pdf on 12.05.2016.

5. Circle

Placing the students in a circle without the tables creates a great possibility to start direct relations, supports group interactions, is favorable to create informal atmosphere.

Such a setting is very beneficial during the classes when it is not necessary to take the notes and the contact is based on a discussion and the exchange of the personal opinion. Such a setting is recommended for groups of not more than 20 people. The teacher who is sitting in a circle becomes an equal partner of the team and is a part of the group. When there are no tables the conditions are ideal for a good communication while discussing and it allows for its dynamism, encourages (obliges) to participate in the discussions. Such a setting allows to better observe students and to stop all improper coalitions among the students.

Table. 5. Advantages and Disadvantages circle setting

Advantages	Disadvantages
It does not create a barrier separating the teacher from the students Facilitates the discussion, gives the dynamism and encourages the participants, Creates a friendly atmosphere, Creates a feeling of equality	It is difficult to take the notes, It is too easy to start informal talks, often not related to the topic, Some students may feel insecure without the tables in front of them, Functional for a small numer of people.

Prepared on the basis of: Bańka A., Architektura psychologicznej przestrzeni życia. Behawioralne podstawy projektowania, Wydawnictwo Gemini, Poznań 1997 and http://magdalipiec.pl/wp-content/uploads/2012/09/Ustawienie-%C5%82awek.pdf on 12.05.2016.

Fig. 13. Examples of the settings

Fig. 14. Classes on voice emission

6. Setting of working space

During the laboratory work it is beneficial to arrange the space in such a way to arrange working space. For the individual work it is the best to place the students vis a vis e.g. with the usage of the computer, other devises or conducting some experiment.

In the laboratories students do not disturb one another. If two students use the same devise, it is worth putting them on the same side of the table, different than in case of other students. In such a setting it is possible to create a partnership while learning.

The teacher must have a free access to tables in order to give easily consultations. In case of more innovative work, more flexible setting are also possible.

Fig. 15. Creativity workshop in DT Lab,
TUL

Fig. 16. Design Thinking Lab,
TUL

Fig. 17. Oxford Debate about pension funds

Fig. 18. Laboratory in the Institute of Mechatronics and Information System

In the literature it is also possible to find other settings. The search of new and better solutions should be a feature of every teacher. What is beneficial in one team does not need to be good in case of a different team and while presenting other learning outcomes.

7. Conclusion

A good recognition of the students' needs from the point of view of the content which is transferred will lead to finding such a setting which will allow for a very useful work of students and teacher. Sometimes it is time consuming to find a good setting. The setting which is optimal is the one in which both a student and a teacher feel safe and are able to learn and to gain experience.

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ORGANIZACJA PRZESTRZENI EDUKACYJNEJ

Summary

Badania potwierdziły związek pomiędzy lokalizacją uczniów w klasie a ich działalnością. W praktyce i teorii nie widać jednego optymalnego sposobu aranżacji przestrzeni klasowej. Zależy to od liczby osób w grupie, rodzaju zajęć, podejścia ucznia i nauczyciela, nastroju, a nawet pory dnia. Niniejszy artykuł przedstawia zalety i wady wybranych ustawień oraz zaleca ich stosowanie.