VISUAL CREATIVITY IN THE LEARNING ENVIRONMENT

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ABSTRACT

The aim of the article is to research the theoretical essence of visual creativity and reveal its potential in a modern learning environment. The concept of visual creativity is used in the advertising business and in the arts, medicine, marketing, and photography; visual creativity has also become essential in many other fields, including education. The research reflects parallels between the current business and learning environments because changes have happened not only in how information is perceived but also in the learning environment in general. Due to advanced technologies, the main function of a school is not to be an information repository, and an educator can be compared to an entrepreneur and students to customers.

The topicality of the research problem is related to the issue that, in many cases in the learning environment of schools and universities, visual communication means are used intuitively – in the form of illustration, decor or entertaining material – but not as a beneficial form of communication. A visually creative learning environment encourages students to communicate in a visually noticeable way – using new, original, unique, and creative approaches, thus fostering students' motivation and improving their learning achievements.

The article reveals the significance of visual creativity in the modern learning environment and describes the essence of the concept in a physical, social and informational context in detail.

The results of the research reveal visual creativity to be a purposeful and deliberate construct in the learning environment and indicate further research directions.

Research method applied: analysis of the scientific literature and resources

Research questions:

RQ1: what is the content of visual creativity (components)?

RQ2: how can visual creativity be constructed in the learning environment?

Keywords: visual creativity, learning environment, constructing visual creativity, visual communication

Paper type: Conceptual paper

INTRODUCTION

The contemporary environment has been characterised as the century of the visual generation; that is, it has been characterised by the shift from the linguistic approach in communication to the visual one and by the dominance of visual technologies. The rapid development of technologies and communication has influenced the way young people perceive information as well as the way they exchange information on an everyday basis. The results of scientific research show that visual language is becoming more popular and is spreading in the communication branch as well as in other fields; however, in the context of the learning environment, visual communication is rarely addressed and the representation of pictures and other visual symbols in schools has not been researched.

The potential of visual communication has been widely researched in the business environment because it has always been one of the most popular forms of communication; its principles have been researched and they have always been widely acquired by entrepreneurs and any other individuals who are interested in the matter or whose job is related to the transfer of information in an interesting, inspiring, attractive and clear way. Unfortunately, in the academic environment, visual literacy is developed to a lesser extent than the literacy of words because it is still regarded as a magic 'talent' (Dake, 2016), although it is deliberately constructed. It is surprising in a way that these principles on how to use visual communication as well as a visually creative approach are not a self-evident practice in the learning environment and the educators' profession in general, where the method of transferring information is very essential. Despite the fact that visual communication has great potential for promoting students' motivation to study, its usage in the modern learning environment is still unconscious and intuitive. The relationship between the usage of visual material and the educational process has rarely been researched since it is usually interpreted as the illustration of a text, the decor or entertaining material but not as a form of visual communication.

As in business, the environment plays an essential role in education – it affects the product's quality; it is important whether a student feels comfortable in the classroom, what impression the class setup as well as the educator's appearance leave on the student. The study process as a product has become a topical issue in recent years when the rapid development of technologies has helped the transfer of information in different and easy ways; thus, the educator's role has changed drastically as well. The spread of different features of visual culture and the usage of visual principles in various fields indicate the need to research visual circumstances in the learning environment and educators' ability to apply visual communication in the context of modern education.

Theoretical scientific literature confirms that visual communication is a useful and fully constructed form of communication in the learning environment and that its realisation is an essential creative competence. The specifics of the learning environment define that visual communication at educational establishments not only constitutes posters or presentations but must be represented in all the categories of the environment – physical, social and informational – including the educator's appearance, facial expressions, classroom setting, objects, etc. Educators have the status of entrepreneurs; they have to consider the method of transferring information, which is the added value of their service – what are the best methods and approaches in order to help students reach the best study achievements. Like entrepreneurs in business, educators must be unique in their performance, which includes the subject they teach, their knowledge and their personality.

THE ESSENCE OF VISUAL CREATIVITY

The concept of creativity has been defined differently in disparate fields of science, yet creativity is always associated with creativeness, which includes the categories of originality and value. This research questions the essence of creativity in connection with its visual manifestations, exploring creativity as a deliberate skill in establishing a valuable and original visually perceptible product.

The concept of visual perception has become topical in the 21st century, when the abundance of information, marketing, rush and saturation influence the individual's ability to perceive and sort information; consequently, visual information is becoming very

important since it provides the individual with information in a very short time, in contrast to audio or kinaesthetic perception (Carey 2008). Visual communication is a widespread form of communication that can be found on the street, at home, in a shop, etc. Both pictures and their moving forms – video, gifs, etc. – attract people's attention and offer the possibility to share digital messages all over the world, but, unfortunately, visual communication has been used very rarely in the learning environment, especially in a creative way. Visual communication influences an individual's perception, emotions, behaviour and his/her creative manifestations.

Visual creativity has been recognised as an essential resource in different fields such as medicine, advertisement, business, photography, dance, etc., and it has been given a lot of attention, but at the same time it has not been researched in an educational context. This chapter discusses the essence of visual creativity, and in order to understand its manifestations, visual creativity has been compared to and contrasted with similar phenomena such as visual communication and design. In many cases, the terms mentioned above are being misused because some of their features overlap, for instance, all of them are information carriers that may communicate with a particular group of society. In some categories these terms share similar or even the same positions, yet it is very important to understand their mutual relevance because their essence and manifestation are different; consequently, they cannot be used interchangeably. A comparative description of the position of visual creativity and visual communication and design can be found in Table 1.

Table 1

Comparative description of the position of visual creativity

Comparative description of the position of visual creativity			
Categories	**Visual communication**	**Design**	**Visual creativity**
It is purposefully and deliberately constructed.	It is constructed deliberately (posters) as well as unintentionally (facial expression).	The design is created purposefully (if not, then it would be a form of art).	Creativity only exists in comparison with 'the norm', in order to be defined as a novelty. Consequently, it is purposefully and deliberately constructed, although in some cases, in the context of a particular environment, it can form unintentionally.
It contains aesthetic principles.	It may or may not contain aesthetic principles, for instance, it is almost impossible to identify aesthetics in some cases of visual communication (gestures, etc.).	It contains aesthetic principles. The design itself combines functionality and aesthetics, the component of aesthetics in this case ensures the essence of the design.	It may or may not contain aesthetic principles, because it is almost impossible to identify the aesthetics in some of its manifestations and it is possible to construct it anaesthetically.

It includes creative processes.	Sometimes but not always, for instance, facial expressions and gestures usually are not constructed deliberately and are not used in a new, original way. There might be exceptions when the manifestations of the visual communication are used creatively and they correspond to the concept of visual creativity.	The creation of a design contains creative processes.	Visual creativity is the result of a creative process.
It is the information carrier for a particular audience (the circumstances of the environment define the manifestation of the phenomenon).	It carries information that might be aimed at a particular group.	It contains particular information and intends to transfer it to a particular group of society, including the way the information is going to be read.	It is an information carrier and a particular environment and audience influence it.
A form of communication that causes a reaction in the audience.	Sometimes it causes a reaction in the audience, but sometimes it is very usual and is not noticed (gestures).	The reaction of the audience has been predicted beforehand and purposefully directed. However, if the design is very functional and practical, it may be unnoticeable and consequently it would not cause a reaction (for instance, a comfortable chair).	Creativity in its essence is noticeable and causes a reaction because it is different from 'habitual', so, visual creativity, while communicating with the audience, attracts the audience's attention and causes its attitude and reaction.

It reflects society's position, events and novelty.	It expresses society's opinion if constructed for this purpose.	Design, similarly to art, reflects society's position, events and topical issues (for instance, the design of infrastructure, functional design, etc.).	It reflects society's position, ideas, events and novelty because it has been influenced by the circumstances of a particular environment; it defines what is creative, exceptional, original or essential in the particular environment, yet it is not widespread as a form of communication because it is new and original (in contrast to the well-known visualization technique).
It can be used for a decorative purpose as the design element.	Visual communication as a form of communication cannot contain only an aesthetic function since it is based on the communicative-information exchange function.	It can contain only a decorative function (an object with a 'beauty' function).	Since a creative product has been based on a value category, visual creativity can contain an aesthetic function if it is the aim of a particular situation.

Source: Created by the authors

It can be concluded from the comparative description above (Table 1) that visual creativity is a distinct, existing phenomenon whose manifestations in some cases may be similar to visual communication and design, though its essence is different. Visual communication can manifest itself in a creative way and consequently be visual creativity at the same time; it may not be creative and deliberate. Visual communication can contain the principles of design but not all types of visual communication will include design and aesthetics. The design can contain the decorative function but the visual creativity will contain it in special exceptional cases, if it is one of its purposes, whereas visual communication cannot be only decorative because of its primary function, which is communication. The design contains visual creativity if it has been constructed in a creative way (new, original, not the one which has been used most often or is the most comfortable) and it is the means of visual communication. Visual creativity is a creative way of applying visual communication that defines the involvement of creative processes; consequently, the categories of originality and value make the manifestation distinct from the norm (which creates the possibility to excel, to attract attention). Visual creativity contains the principles of design (as well as others), although apart from design thinking, creative thinking generates different, new, unprecedented solutions while the design looks for an existing solution (which in most cases is the most popular and effective one).

THE ROLE OF VISUAL CREATIVITY IN THE MODERN LEARNING ENVIRONMENT

Our modern era is described as "the era of visual generation", characterised by the "linguistic transition to the visual" and the "dominance of visual technology", but this has not been scientifically grounded as of yet and is not connected with the pedagogical context. From various scientific studies (Lubart, Sternberg, 1995; Latvijas UNESCO Nacionala komiteja, 2001; Black, Harrison, 2002; Sternberg, 2006; Carey, 2008; Bebre, 2011; Vidnere, 2011, etc.), it can be concluded that visual creativity is necessary for building a creative learning environment that fosters students' learning achievements.

The rapid development of communication technology in the 21st century has expanded the possibilities to offer and receive information visually and it has influenced the way young people perceive information (McGough, 2013). The popularity and accessibility of social networks allow people to communicate without any restrictions. The amount of information also determines the usage of other skills – not only the ability to obtain information and memorize it but also to be able to comprehend the main idea, to select useful information and to do this in a short period of time. Consequently, students are used to perceiving and providing information using less words (lengthy texts are not comfortable to read and write) while trying to express a deeper idea. They might use a subtext or a picture that creates an emotional background and associations and helps them to express an idea with less characters.

In order to process information, the brain uses any of the five senses, although in the learning process three of them dominate: visual, auditory and kinaesthetic perception. Visual perception is the most essential of all types of perception since it determines a perceiver's initial processing of information and the formation of associations. It influences the formation of the first impression and creates the interest that encourages further cognitive processes. Pictures bring a new role to modern communication, which is connected with the solutions of new social relationships and functions (Kress, 2003) that people and especially students who use modern technologies on an everyday basis face regularly. The fast-paced contemporary lifestyle and technological possibilities have put the significance of pictures and visualisation on par with the linguistic approach to communication. This is nothing new: pictures as the main carriers of information can already be found in the Middle Ages – in manuscripts, complicated iconographic paintings, etc. – when literacy was low; with the help of pictures information could be transferred to people (because of the lack of paper, it was very difficult to save information). The main difference is that during the Middle Ages symbols in various colours and shapes were used in a very narrow genre (the dominance of religious information) and from a very young age people were introduced to the visual language of symbols. In the context of education, pictures appeared much later – in the form of illustrations in fairy-tale and poetry books, picture books, comics and graphic novels. In the learning environment, visualisation was later supplemented by video, films, TV and computer games, although versatile visual material as a form of information was still rarely used during the learning process, and when it was used, educators very often did not have insight into the principles of visual communication.

Nowadays it is possible to get information anywhere very quickly, but its extent considerably exceeds the borders of an individual's perception; thus, the importance of the ability to select information, diagonal reading and visual perception cannot be

underestimated. It can be observed that video tutorials, applications and photographs as means of transferring information are spreading very quickly since nowadays a picture cannot be perceived as an aesthetic entertaining attribute. It transfers information very clearly and directly (International Handbook of Innovation Education, 2013). An individual is used to using and reading languages unconsciously, although this cannot be considered as oral communication, e.g., music, gestures, rhythm, tone of voice, the construction of sentence rhythm, manifestations of movement, body language, smell, taste and touch. The message is encoded consciously or unconsciously at a very detailed level (for instance, we understand very well when our cat wants some food, although it does not speak our language).

Because of the long-lasting age of the linguistic approach to communication (starting with book printing), the importance of symbols and pictures diminished excessively, while now modern forms of media, technologies, the way of obtaining information and communication, marketing, and applied cultural life have re-established the relevance of visual intelligence. This means that an individual's perception has reduced to comprehension of flowing, extensive and digital information (Carey, 2008). In order to transfer information within the business environment, visual creativity has been widely used since only in this way can a large amount of information be attracted and transferred to the customer; as is well known, visual and creative information is easier to perceive. In the modern learning environment, the knowledge-gaining process can be equated with a business product – it must be visually attractive, it must create an emotional link with the customer, it must intrigue in order to promote students' motivation to study and to achieve good study results. Like any employer or entrepreneur, modern educators, with the help of their appearance, enthusiasm, mood, etc., create a favourable emotional environment for employees, students, etc., thus promoting the motivation to work or study.

In addition to the above mentioned, the significance of a visually creative component has been determined by the specifics of modern students' perception since, due to the influence of information's extent and accessibility, students pay attention to information that can be easily and rapidly perceived, that is unique and valuable (the key elements of creativity). This is connected with the fact that everyday life for a modern young person in the 21st century is related to smartphones and other types of modern technologies that are replete with pictures, videos and other visual objects. A wide range of visual materials – pictures, videos, photographs, and other visual media – circulate continuously via blogs, virtual photo albums, Twitter, YouTube, Instagram, MySpace, etc. (Bauman 1998; Castells, 2001). It is evident that communication, creativity and education are changing because the traditional usage of reading literacy in communication is transforming and these changes are leading to the recognition that nowadays it is impossible to use reading literacy as the main form of communication (Gee, Hull, 1996; Luke, Carrington, 2002; Kress, 2003).

Research done by Flewitt (Flewitt, 2006) proves that students communicate differently in disparate environments; thus, the difference between the effectiveness of perceived information and the load of the will-stimulating function is very remarkable because it has been determined by the specifics of a particular environment (home, school, outside school). The study process at school usually has been perceived as boring and separate from real life because the environment and information exchange there is totally different form the one students face outside school.

An educator who is responsible for forming the appropriate environment for modern students is supposed to consummate his/her visual literacy not only to effectively organize the study process and to recognize the visual communication field in the learning environment but also to understand the students' perception and connection with the visual concept since a modern individual, starting from his/her early childhood, has been in touch with different types of technologies that function using the principle of the visual system; thus, he/she applies visual language much better than linguistic language.

Creativity as a productive process unlike the reproductive processes (information transfer, confirmation, and retention) can offer innovative and new results that contribute to and determine achievements in many practical fields of life, culture, education, and production. Many researchers (Tainena, 2008; de Bono, 2009; Bebre, 2011; Vidnere, 2011, etc.) indicate that in order to understand and analyse creativity as a phenomenon, a very deep and complex analysis of a particular environment is needed because originality and novelty are contrasted with the habitual. In the context of education, this is mainly understood as the learning environment at school. The essence of creativity as a phenomenon is to generate something new and original and it defines any forms of creative manifestations as divisive and connected with the particular environment (because if something is new and original in a particular environment, in another environment it might be usual and habitual).

THE ESSENCE OF VISUAL CREATIVITY IN THE LEARNING ENVIRONMENT

In scientific literature the learning environment is viewed as a three-dimensional interaction between the physical environment, the social environment and the informative environment. An individual is an integral part of the environment, which is described by the surroundings / external conditions / spatially physical environment (the room, the temperature, objects), the social environment (classmates, communication, others' opinions, family values, atmosphere), and the informative environment (different sources of information, teaching aids, technical means) (Fig. 1).
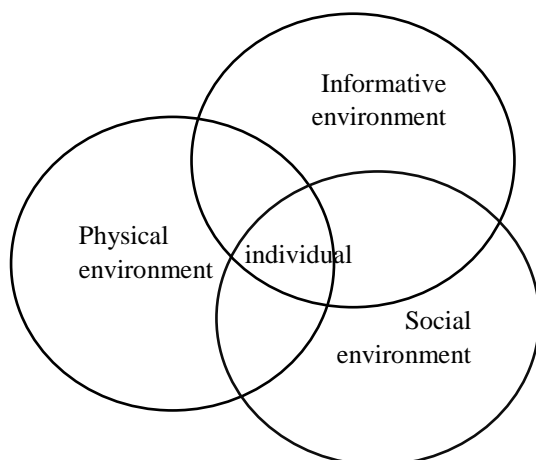
Figure 1. Dimensions of the environment
Source: Created by the authors

The individual is influenced by all three dimensions of the environment and they influence each other as well. The dimensions of the environment are all connected – they influence each other and are influenced both by the individual and each other. The visual manifestations in the learning environment are reflected in all its dimensions. The specifics of the learning environment determine that visual communication at an educational establishment not only constitutes a poster or a presentation but must include all the dimensions of the environment – physical, social and informative; thus, the educators' outfits, facial expressions, classroom settings, etc., are considered as forms of communication in the learning environment. Like marketing, communication at an educational establishment should be creative, with the ability to effectively address, intrigue, attract, and establish a will to explore a specific topic more closely and create appropriate associations.

Based on analyses of scientific literature on the concept of visual creativity, educators' creativity and the learning environment (Kellmer-Pringel, 1979; Cooper, McIntyre, 1993; Lubart, Sternberg, 1995; Liegeniece, 1999; Mikelsone, 1999-2000; Latvijas UNESCO Nacionala komiteja, 2001; Black, Harrison, 2002; Rudduck, Arnot, 2003; Qualifications and Curriculum Authority, 2004; Sternberg, 2006; Landau, 2007; Carey, 2008; Tainena, 2008; De Bono, 2009; Bebre, 2011; De Bono, 2011; Vidnere, 2011; Sumane, 2012; International Handbook of Innovation Education, 2013; Briska, 2014; Science Dictionary, 2015;), indicators of visual creativity manifestations have been established according to each learning environment dimension – social, physical and informative. By integrating the indicators of visual creativity manifestations into the specifics of pedagogy, it is possible to analyse, characterise and organise educators' visual creativity by adapting to each criterion a new, original and valuable execution in one or more positions in a particular environment of pedagogical activity.

The informative environment or symbolic system contains the criteria of visual creativity: the form of the information source; the content of the information source; and the visual design of information.

The form of the information source as a criterion of visual creativity has been characterised by an inspiring, versatile (texts, pictures, three-dimensional models, maps, videos, posters, etc.), logical and demonstrative environment. For instance, in a biology class where the students are supposed to study the components of a flower, they have been offered a real flower and are able to separate the parts of the flower: a pistil, stamens, petals.

The content of the information source in the context of educators' visual creativity can be characterised as the possibility to use posters, books, magazines, the internet, a selection of informational content through videos, three-dimensional models, etc.; it can also be characterised by versatility, diversity, conciseness, adequacy of age and knowledge level and as attractive, explanatory, entertaining, clear and visible. For instance, the content can be combined according to marketing principles: an attractive picture, a concise, provocative, inspiring headline.

The visual design of information in the context of educators' visual creativity in the learning environment manifests itself as clear, logical, inspiring without distracting details (defects, saturation), aesthetic, and different (memory of colours and forms). It may include mappings of pictures, texts and other forms of information; coherence of colours,

forms, lines, rhythm and associations; and the usage of signs, symbols and sociograms. An important part of the learning environment is the ability to attract students' attention in order to enhance their interest in researching the given topic in depth; thus, in the context of design such principles as amazement with the help of colour, form, text, etc. are essential. For instance, on the topic of pyramids in culturology, their dimensions (height, width, used material, etc.) are reflected using three-dimensional models where appropriate colours, textures and other components of the design are applied.

The physical environment contains such visual indicators as functionality and ergonomics; accessibility and visibility; and aesthetics of the physical environment, which may be realised in a creative way.

Functionality and ergonomics in teachers' visual creativity is reflected in the learning environment's convenience, location, appropriate size, and simplicity, and in the adjustability of equipment necessary for work; excessive objects should be eliminated, taking into account the factors of pollution and distraction of attention, An example would be arranging classroom desks according to the task – the exchange of ideas within a group will be more productive if chairs are placed in a circle.

Availability and visibility in teachers' visual creativity is reflected in the environment of objects necessary for research and creative work. This is the inventory for doing the task and for maintenance of the environment, which motivates participation in the activity and creates a proper attitude to it; at the same time, the environment should not contain many excessive and disturbing objects and there should be easy access to objects and a clear system. For instance, a dustbin could be large and bright and placed in a visible and constant place, so that its use would not require much time and energy.

The aesthetics of the physical environment is reflected in the general decoration of rooms and objects in the interior (form, colour, size, etc.), the attraction and visual correspondence to the subject (atmosphere), and their function. For example, it is not advisable to use visually old objects if the aim is to raise students' interest and make them like a particular topic – new books, clean table cleaning cloths, etc. are advised.

The social environment includes visual indicators: a role model, the influence of others and an individual's place in a team.

A role model is one of educators' manifestations of visual creativity, because a student has been influenced by the surrounding people, their example and presence, their culture, experience, relationship models, behaviour, help, cooperation, conflicts, institutions and groups – everything an individual meets in their daily life. The educator also influences students (and other individuals) as a representative of a profession, an example of a standard of mentoring, gender education and other forms of education, and as a creator of alternative conceptions of patterns. Besides this, appearance (tidiness, choice of clothes and accessories and suitability, comfort) and behaviour that makes an impression serve as a professional example. For instance, in the context of a learning environment, the educator demonstrates the attitude of a responsible and educated person through appearance (e.g., following the appropriate dress code).

The influence of others in the educators' visual creativity is connected with the fact that students have high sensitivity in terms of motivation towards the social environment; therefore, the educator, in creating appropriate conditions for the visual environment, can stimulate or distance students and their attitude towards generally accepted norms and stereotypes. The educator can implement this with different visual

aids, putting limits on tasks, arranging the classroom, offering a possibility to do individual work, planning the content of tasks and information, design, ergonomics, accessibility of resources, encouraging communication with other people and students, or encouraging the students' wish to act differently or similarly. For instance, classroom chairs can be arranged separately or put together, versatile accessible materials can be provided, and it is possible to reduce the number of similar solutions to tasks.

An individual's place in a team – a student's social position and social functions (need for love, security, new recognition, responsibility, independence, transparency and connection, etc.) are influenced through different environmental visual conditions. The limitations of tasks, a class interior, the content of tasks and information, design, ergonomics, accessibility of resources and other aspects influence the student's social position, communication with others and mutual influence. For instance, encouraging the use of auxiliary means in the task (for example, the students have to split into teams so that each has a camera) facilitates students' cooperation.

Depending on the particular circumstances and the novelty of a particular manifestation (which in some conditions is new, in other conditions may be everyday practice), many strategies and programmes can be applied to execute the visual indicators in educators' creative manifestations. Consequently, it can be concluded that educators' visual creativity in the learning environment constitutes **the circumstances formed by the educator that are perceived by sight (visually detectable) and that are new and original, different from the usual ones (creative).** As creativity is a process where something new and unusual is being devised, it is impossible to provide guidance or define what the manifestations of creativity are in a particular branch or environment, although the criteria characterize and direct the creativity to be applied purposefully and knowingly in the learning environment according to the set study goal.
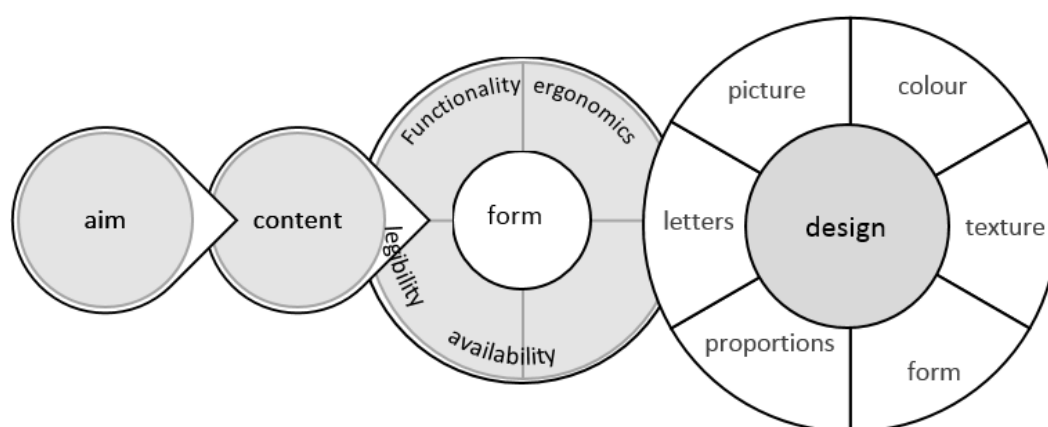
A MODEL OF VISUAL CREATIVITY CONSTRUCTION IN THE LEARNING ENVIRONMENT

The complexity of the learning environment and the criteria of visual creativity indicate that the visual communication faced by students in the learning environment is more extensive than the classical understanding of visual communication. The specifics of the learning environment define that visual communication in educational establishments not only constitutes posters or presentations but must also be represented in all the categories of the environment – physical, social and informational; consequently, educators' clothing, facial expressions, classroom setting, objects, etc., are considered as a form of communication in the learning environment. As in marketing, communication at an educational establishment should be creative, with the ability to effectively address, intrigue, attract, and establish the will to explore a specific topic more closely and create appropriate associations.

Furthermore, creativity in the modern world should not be applied as a mythical power but as a purposeful action in order to achieve a particular result (de Bono, 2009); also, visual communication in the learning environment must be applied in a creative, deliberate way to foster a learning environment that is supportive and inspiring for modern students.

In order to use visual communication effectively in the learning environment, especially to enhance students' learning achievements, a purposeful, logical and

systematically applied action, aimed at achievements, is needed. Any component of the learning environment (a setting, a presentation, the study materials, etc.) can be executed in the form of visual communication in all the dimensions of the environment – social, physical and informative. On the basis of the scientific literature on the environment, the learning environment, visual communication, creativity and visual creativity, (Cooper, McIntyre,1993; Lubart, Sternberg, 1995; Bauman, 1998; Bonnici, 1999; Castells, 2001; Black, Harrison, 2002; Luke, Carrington, 2002; Kress, 2003; Rudduck, Arnot, 2003; Plucker, Beghetto, 2004; Flewitt, 2006; Sternberg, 2006; Carey, 2008; Sumane, 2012; International Handbook of Innovation Education, 2013), a scheme has been created that illustrates the course of visual creativity construction (Fig.2). The scheme depicts the deliberate and purposeful construction of visual creativity in connection with the indicators of learning environment dimensions.

Figure 2. Visual creativity construction in the learning environment
Source: Created by the authors

The course of visual creativity construction in the learning environment:
1. During the first stage, a pedagogic goal is identified and specified that is to be achieved by applying visual communication.
2. The goal determines the content of information that will be transmitted in the course of visual communication. It is essential to select the information that is to be used for achieving the particular goal in accordance with the age and knowledge level of the target audience, and depending on the situation, the following factors must be considered: versatility, diversity, conciseness, awareness, etc.
3. The next stage is the selection of the information format. It is essential to apply different information formats in the study process. The format can be either physical or virtual, it can be in the form of a text, an article, a picture, a three-dimensional model, a map, a video, photography, a sociogram, posters, books, slogans, a whiteboard, presentations, magazines, games, activities, puzzles, booklets, etc. Taking into consideration the specifics of the learning environment and visual communication, it

can be concluded that it is essential to consider four aspects determined by the circumstances of a particular environment:

a. Functionality – the idea of the format, the ability to encourage people to operate, logical, corresponding to the idea;

b. Ergonomics – convenience, location, appropriate size, adjustability of equipment necessary for work and the target audience;

c. Visibility – without extra details and circumstances that would distract attention, concise and clear;

d. Availability – necessary means, their amount, clear principles of location, the possibility to fix information.

4. The next stage in the visual communication construction process is related to the design. There are different basic principles of design formation in different design branches (for instance, infrastructure design, interior design, clothing design, etc.). Every single situation determines the significance of the design component (for instance, there is not always a possibility or necessity to use letters or a texture display). In the context of the learning environment, the most essential basic components of the design are the elements of visual language – the principles of colour, letters, forms, pictures, proportions and texture and their mutual interaction:

Colour is a visual language component that influences a human being, encouraging emotions and associations psychologically (red colour creates aggression and anxiety), sometimes based on the experience of the particular individual (for instance, if a childhood toy was red, the colour might create positive emotions and associations). Also, historical as well as modern features in colour symbolism must be considered; for instance, the warning colour combination of red and white is outdated nowadays (people are used to it) and has been replaced by the combination of yellow and black.

Letters are one of the basic components of visual communication in handwriting or on the computer. The form and style of letters can be old-fashioned, modern, elegant, funny, etc., thus creating and intensifying particular emotions and associations. Research shows (Bonnici, 1999) that the form of letters influences emotions regardless of the associations – the same font may create similar feelings in different people. Also, the direction of lines and letters can have such an influence – fractured, stretched out, or angular letter forms create dynamic or aggressive feelings while circular letters create a sense of tenderness and youthfulness.

Shape is a design component that is graphically closer to abstraction than a letter. Shapes and their combinations create changes in a human being. In the combination of shape and colour, a lot of variation is created. If a picture has been transformed into a different shape, a different notion of a depicted phenomenon is created (wavy, irregular edges / frames create an unserious image, etc.). Ovals, ellipses, and circles create a positive, friendly atmosphere; they symbolize marriage, brotherhood, and stability. They have traditionally been used to symbolize a feminine context. Triangles and squares are usually used to demonstrate balance. They are associated with masculine objects. They create a feeling of power, professionalism and effectiveness – this is a characteristic of the straight lines and shapes that contain them. A triangle creates associations with power, science, religion and law. These principles are used in marketing because a shape influences unconscious perception, where associations and symbols create a feeling and

idea about the product. Vertical lines create a feeling of aggression, power and masculinity; in contrast, horizontal lines create a feeling of unity, peace and silence.

A picture is a manifestation of visual communication, with its primary function of transferring information. A picture is one of the components of visual communication that contains all the design components (colour, shape, proportions, texture, etc.). The picture that is going to be used is determined by the context (the goal) – a picture of a flower in a botanical book will definitely look different from one in a fairy-tale book because it must transfer a different kind of information. There are two types of pictures: literal (real) and symbolic. For instance, a picture of a rose as a symbol of freedom will be depicted differently than a realistic picture in a botanical book.

Proportions in design influence information reception. These are aesthetic principles that come from history – the golden ratio, a square and other harmonic proportions. They are essential not only when balancing the object's size and shape but also in their positioning with regard to each other and their background. Also, the coordination of written texts and background is important in order to perceive information effectively. When the information is being emphasized and isolated from ambient conditions, an empty space is necessary. This method is applied in versatile visual communication formats – pictures are framed, graphics are usually encircled by a passepartout (if the visual information is very detailed and saturated, a wide frame is needed). In older manuscripts a wide empty space was left around the text as well as the picture; although paper was very expensive, it was very important to follow this ratio.

Texture is one of the basic design components that characterise the depicted object or phenomenon, thus making it independent from the general view. For dimensional objects this may entail salience or relief. This makes the object recognizable and closer to its real materiality (for instance, a drawing of an orange peel or a drawing of a rusted piece of metal). Texture awakens feelings of taste, touch, etc. in the viewer, thus creating a particular association. Texture creates a particular mood and includes the following factors: haziness, focus, spatiality, shades of saturation, stylistics, etc. Research shows that abstract texture may create ideas and feelings as well.

The organization of visual communication in the learning environment can be considered as effective if all the above-mentioned stages are executed in order, and it is advisable to assess if any of the values of previous stages have been lost during the construction process (in order to maintain the component of value, so that it corresponds to the stated goal), but this does not necessarily mean that if any of the stages are missing, visual communication in the learning environment does not function. The role of a creative approach in the execution process cannot be underestimated – the relationship between the new, the valuable and the usual – so it is essential to consider the alternatives in every stage of the construction process, what is usual and what is original for every particular situation (for instance, the way of presenting a subject – it might be worth trying out a three-dimensional model rather than a regular presentation).

While executing the above-mentioned stages with the help of unusual/new combinations, methods, and ideas, a manifestation of visual creativity is gained. The result is visual (visual communication) and creative because it contains the components of value and novelty – valuable (created to reach a particular goal) and new in particular circumstances (cannot be named; otherwise, it is not considered as 'new').

CONCLUSIONS AND DISCUSSION

The modern learning environment can be compared to the business environment, where the learning process is a unique service and educators are responsible for providing it. Thus, similarly to entrepreneurs, educators are searching for the most appropriate methods to satisfy the needs of a particular audience – to achieve study goals. The learning environment, similarly to the business environment, must contain new methods that are appropriate for the peculiarities of modern students' perceptions. The methods and strategies must be adapted to the target audience (customers, students); it is not effective to follow the old principles since students and the requirements in education have changed considerably. It is without question that one of the educator's tasks is to create an appropriate learning environment to promote students' development and achievement of study goals.

The learning environment determines the interaction of three environmental dimensions – social, physical and informative. The characteristic visual indicators of a physical environment are functionality and ergonomics; availability and visibility; and aesthetics. The characteristic visual indicators of an informative environment are form, content and design. The characteristic indicators of a social environment are a role model, the influence of others; and an individual's place in a team.

Visual creativity is an essential development resource in different industries (medicine, business, the arts, etc.) including education. One kind of visual creativity, namely visual communication, is used in our modern learning environment. Sometimes visual communication is perceived as the simple usage of illustration, decors or entertaining materials, but its role in promoting students' motivation and the creation of an aesthetic learning environment is very often underestimated. Visual communication can be described as a complicated, multidimensional phenomenon that is deliberately constructed. It delivers information to a specific group of people or audience; it causes a cognitive and emotional reaction and contains aesthetic principles. The ingredients of visual communication include not only visual materials such as colours, lighting, texts, and digital effects, but also the educator's image, their facial expressions, gestures, appearance and movements. The visual creativity construction process in the learning environment consists of the formation of a deliberate and precise pedagogical goal, the selection of the content of transferred information, the choice of information format, and the design. Design formation is the last step in the visual creativity construction process, where it is very important to choose appropriate basic components of the design of visual language – the colour, letters, shapes, proportions and textures and their mutual compatibility.

The indicators of visual creativity that have been revealed during the theoretical research characterise the essence of an educator's visual creativity and reflect its manifestations and options for use in each individual's activity in different learning environments. Any component of the learning environment – room setting, the way of presenting a subject, study materials, etc. – can be executed in all environmental dimensions: social, physical and informative.

Further research in the field of visual creativity is necessary in the following directions:

- the connection between students' learning motivation, self-assessment and visual creativity,

- applicatin of the elements of visual creativity in connection with students' personality and temperament characteristics.

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