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VISUAL COMMUNICATION DESIGN LEARNING IN EDUCATIONAL INSTITUTION: HAS IT BEEN DISRUPTED?

Rahina Nugrahani

Visual Communication Design Department, Universitas Negeri Semarang, Semarang, Indonesia
rahina_dkv@mail.unnes.ac.id

Triyanto

Visual Arts Department, Universitas Negeri Semarang, Semarang, Indonesia
triyanto@mail.unnes.ac.id

Wandah Wibawanto

Visual Arts Department, Universitas Negeri Semarang, Semarang, Indonesia
wandah@mail.unnes.ac.id

Abstract

The 4th industrial revolution has brought major changes, not only in technology itself but also in human life, the way humans relate, the way we organize, and including changes in education. Visual communication design learning through educational institution seems to be slow to react the rapid changes and fulfill the demands of society and industry. This paper will discuss how does the 4th Industrial Revolution affects the learning of visual communication design in educational institution. The method used in this study is qualitative approach, which is intended to understand the phenomenon of what is experienced by research subjects. This research involved a group of students from visual communication design study program. The technique used to obtain data in this research through observation, in-depth interviews and document tracking. This article presented some recommendations for educational institution offering visual

arts learning in responding the changes in 4th industrional learning. This article also shows the dynamic of knowledge in the information era has created non-formal learners who are able to develop their own specific materials, methods, and learning strategies.

Keywords

Visual Communication Design, Virtual Learning, 4th Industrial Revolution, Collaborative Learning, Visual Arts Education

1. Introduction

The 4.0 Industrial Revolution that began at the beginning of this century has brought about major changes in the way we live, communicate, interact, work and study. New technologies and approaches that combine the physical, digital and biological worlds in a fundamental way have driven a moderate transformation in civilization, in a form that is completely different from what humans have experienced before. We don't know exactly what will happen in the future. But there is one thing for sure that each individual must respond to these changes in an integrated and comprehensive manner by involving all global political stakeholders, from the public and private sectors, to academics, and of course civil society.

Disruption is an innovation that never existed before and suddenly brought the existing services, products and systems. Disruption brings an important message that requires individuals or groups to be prepared or marginalized. In general, disruption will break all trajectories of aspects of life that previously could be a source of strength for an individual or group, from social, economic, cultural, to political. The convergence of digital technologies and the creative economy is having a disruptive effect on society in ways that would have seemed hypothetical. We are witnessing the emergence of a Fourth Industrial Revolution, where technology is more accessible, more widely used and more seamlessly integrated than ever (McKinsey & Company, 2018).

Changes that occurred in the era of disruption were very fundamental changes, a paradigm shift to leap frogging. This is due to changes in the dynamics of the development of science that produce inventions and innovations in the acceptance, use and implementation of science and technology. The cause of this major change and disruption is technological innovation (Bower & C. M. Christensen, 1995). Technology encourages various changes, not only in technology itself but also in human life, the way humans relate, the way we organize, and including changes in education.

Characteristics in the industrial revolution era include digitalization, optimization and customization of production, automation and adaptation, interactions between humans and machines, value added services and business, automatic data exchange and communication, and the use of information technology. Therefore, educational institutions and industry must be able to develop industrial transformation strategies by considering the human resources sector that has competence in their field.

Art education is facing a situation where changes in various aspects of life, both economic, social, political and cultural, occur so fast. Compaction of production time and consumption distance causes people's trends and tastes to change in a short time, and it also encourages the emergence of an attitude of patience in defense (ephemerality). In Indonesia, the educational institution's system, including in the field of visual communication design, has not been able to anticipate the overall character of the acceleration of life (dromology) (Piliang, 2017). Knowledge and skills offered through conventional methods are often far behind the industry demands. This condition requires continuous renewal and rejuvenation of knowledge in the educational institution system, so that the gap between the curriculum and the dynamics of science can be anticipated.

In mid-July 2017, a study was conducted to determine the level of satisfaction of students related to the curriculum, material and learning methods in the visual communication design study program at Semarang State University, educational institution where researchers team have been teaching for more than ten years. This study was not published, because it was used for internal purposes of study programs in improving the curriculum in the coming year. Through this study involved 40 students of visual communication design study program, it was found that most students (63%) were dissatisfied with the curriculum and material offered by the institution. This is due to the curriculum, material and methods of visual art learning that seem to always lag behind the speed of the development of information technology. Through the study, it was also known that there was a distrust among students in the institution, that the curriculum offered by institutions would be more responsive and adaptive to the development of information technology. This can be one of the obstacles for the institution to lead the students to become visual communication designers who are ready to face challenges in the era of 4th industrial learning.

2. Research Issues

The discussion of this article is intended to answer this question:

- How the 4th Industrial Revolution does affects the visual communication design learning in educational institution?
- How have educational institution offering visual communication design learning in Indonesia responded to this change?

In the field of visual arts, the learning process of various kinds of knowledge and skills is closely related to the demands of industry and the world of work. The ability to absorb a number of information combined with an intuitive understanding of things that are relevant in each situation, is much faster than the learning curriculum offered by educational institution offering visual art learning. Millennial generation is generally born where each individual is an independent learner who is very flexible and adaptive. They do not always place themselves in a formal academic community, but prefer a community that can accommodate their interests in obtaining information that supports their skills and knowledge. They are determined, driven achievers who depend on technology and their support system. The method of teaching ten years ago is not the method to achieve learning with this generation (Monaco & Martin, 2007).

For this reason, the research was aimed to study how the visual art learning has been changed in recent decade. New research suggests learners may be developing supportive affiliations, creating and circulating their self-expressions, and collaboratively solving problems within such cyberspaces (Greenhow, Walker, & Kim, 2009).

3. Methods

The research stage in this study is generally described in three main steps of qualitative research (Moleong, 2006), which includes; 1) Pre-field stage that is focused on designing research activities, determining informants and designing data collection techniques, 2) the second stage is data collection. The technique used in this stage are observation, interview and document tracking, 3) the final stage is the data analysis stage, where all valid data will be analyzed inductively using an interactive cycle model.

Observation in this study is aimed to present a realistic picture of the current learning situation in visual communication design study program-Semarang State University in Indonesia. Some of the things observed in this study are related to the overall teaching and learning process that took place in this study program, including curriculum, subjects, learning methods and

strategies. In-depth interviews as conversations between researchers and research subjects are used to obtain information that cannot be observed directly by researchers. The interview in this study was intended to explore information about the views, knowledge, values of the research subjects. Typically, in-depth interviews are more like informal talks that serve as a tool for producing situational understanding from the perspective of the resource person. Respondents involved in this study were 40 students of the visual communication design study program, Semarang State University. The information extracted through in-depth interviews is related to the use of information technology in visual arts learning, the visual arts projects they work on, as well as the most important subjects to support their visual art projects.

Tracking documents are used to collect information related to students' visual arts projects involved in this research. Visual art works are in part works that have been published through their portfolio accounts and through the social media they manage.

4. Visual Arts Learning in Educational Institutions

Art education aims to instill aesthetic values by providing perceptual, cultural and artistic experiences (Triyanto, 2017). Perceptual experience is instilled through the activities of thought, creation, imagination and creative expression activities. Cultural experience is obtained by learning and understanding the cultural forms of both the past and the present, artistic experience is developed through understanding and skill by using art media and creating artworks produced by others.

Science in the field of visual arts, growing along with the increasing demands of the industry, both have reciprocal relations. Industry requires professional, creative visual arts graduates who have a vision and aspects of high innovation produced by educational institutions through the learning process. Along with the development of creative industry, the profession in the field of visual communication design is one of the favorite profession choices. Universities in Indonesia seemed to be competing to provide Visual Communication Design study programs due to the high public interest in this scientific branch. However, the greater the number of visual communication design students at each institution that provides visual communication design education, the problem of the quality of learning also becomes increasingly complex. Various obstacles in compiling the curriculum, scientific content, skills qualifications and the readiness of students to apply skills in the industry, often become issues in the implementation of education in the field of visual communication design (Nugrahani, 2014:129).

Creative economy Industry needs a professional and creative visual communication designer who is ready to work, has a high vision and aspects of innovation in developing functions and provides an aesthetic touch to the product. What is needed by creative economy industry is not only a visual communication design graduate that can accommodate market needs and choices, but workers who also have the knowledge and critical sensitivity to create brilliant creative ideas. To bring out this sensitivity, professional industries need the existence of educational institutions that can improve students' abilities and sensitivity in producing cutting-edge visual communication works.

This is a real challenge for educational institutions that provide visual communication design study programs. It takes seriousness and synergic cooperation between educational institutions and industry, so that the gap between visual communication design learning in higher education and the demands of the creative economy industry can be anticipated.

5. The impact of 4th Industrial Revolution on the Learning Strategies of Visual Communication Design Students

The existence of internet technology has opened access to achieve the goals of visual art education through non-formal learning spaces. Various information, articles, and learning resources can be obtained and accessed in a short time. Students are allowed to think about questions about everything and can directly search for answers to these questions through search engines. Millennial students, referred to as "digital natives", have been exposed to information technology from a very young age. Millennials' access to technology, information, and digital media is greater than any prior generation (Roehl, Reddy, & Shannon, 2013). Millennials always have curiosity and high enthusiasm for knowledge. Nowadays millennial learners have complete control over all the information they need to explore their knowledge and skills independently. The learning methods offered in classrooms sometimes are felt too slow for students in this era. Not all learning content obtained from formal education accommodates their needs in answering various questions and the specific skills they need to become individuals who are ready to compete in the technological era.

Learning and memory research points out that active learning facilitates long-term memory through the process of elaborative rehearsal (a memory process that involves the use of meaning rather than rote learning). The use of examples which learners can relate to and asking students to develop their own examples are ways to create meaning between learners' life

experience and the material they want to learn. For Millennials, to be engaged into cooperative learning exercises, empowering them to be decision makers in the course, and getting them to analyze their own learning strategies (Mcglynn, 2005). Keeping millennial generation interested in learning process by introducing a topic that taps into a personal interest is a primary way of reaching millennials in an educational format (Kotz, 2016).

Visual communication design students at Semarang State University feel dissatisfied with the curriculum, materials and learning methods provided by study program. The learning they get in their educational institutions is slow compared to the demands of the industry. However, they realize that this obstacle does not only occur in educational institutions where they study, but also in various other educational institutions in Indonesia that provide education in the field of visual communication design. This is well understood by students because as a millennial generation, they know that the demands of industry and markets are changing more rapidly along with the development of information technology.

They mentioned that most of the learning resources accessed to help them complete their study projects are via the internet. Through observation and in-depth interviews conducted on 40 students in the visual communication design study program, data was obtained that to fulfill the needs of current learning materials in the field of visual communication design, five learning resources were obtained that could be accessed by students via the internet. Five learning resources that are used as references by students, including portfolio websites, tutorial videos, social media, virtual communities/forums, and blogs.

Each student accesses learning resources that are different from each other, depending on habits and learning styles that are appropriate to their individual conditions. The data shows that the most accessed online learning resources by visual communication design students are portfolio websites that are widely used as references in producing their project works. In addition to portfolio websites, the second most accessed learning resource is video tutorial, which is used by students to get tutorial learning about the graphic design software they are using. As for social media, virtual communities and blogs in general they use to find references, appreciate and get feedback from other learning designers, and some are used to showcase their design work online.

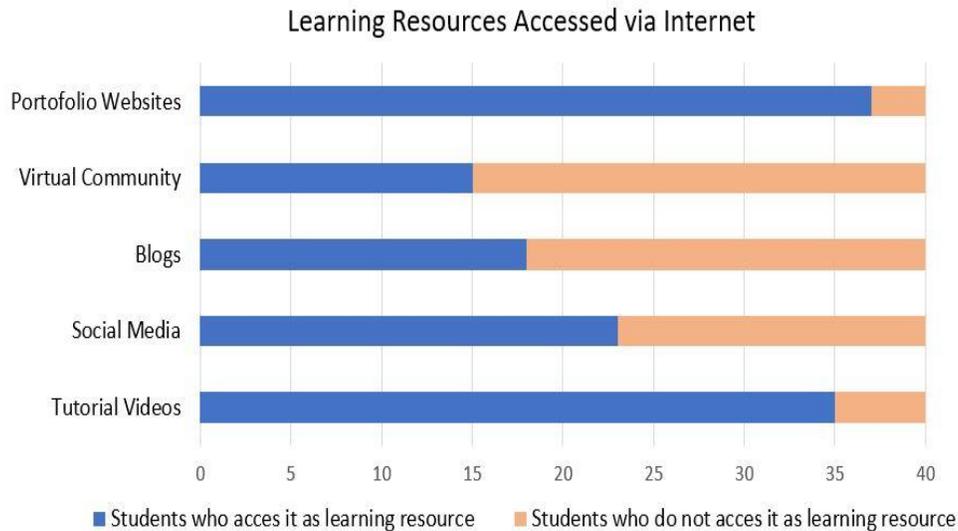


Figure 1: *Learning resources accessed via internet*

5.1 Visual Communication Design Learning and Portfolio Websites

In visual art, portfolios are a collection of works that are designed as well as possible so that they can be communicated through various ways, in order to summarize the expertise and work experience of the creator. Art and design professionals have long used portfolios, long before this model was used in education. Creator's professionalism can be measured through the works that have been created. Portfolio is a representation of creator's quality, a curriculum vitae in a visual format. In visual arts, portfolio is used by creator to promote their work to prospective clients or be shown to the agency when they apply for a job (Nugrahani, 2014).

Portfolio website is a popular media among artists and designers. Through this site, artists and designers are able to have virtual space to display their works, to be seen, enjoyed and to become reference for other artists around the world. Currently there are dozens of portfolio sites that can be accessed freely by artists and designers. Some of the portfolio sites that have been widely used by professionals in the visual arts, i.e: Deviantart, Behance.Net, Pinterest.com, Dribbble.com, Kreavi and Flickr. Visual artists reputation can be assessed through their clients, project quantities and qualities, and their reception among other visual artists.

In visual arts learning, portfolios are a powerful pedagogical tool and a major feature of contemporary education. In visual arts learning, portfolios are usually intended to fulfill two

objectives (i) encourage lifelong learning that is critical and self-reflecting (ii) collects evidence of broad skills and competencies that can enhance future employment prospects.

5.2 Visual Communication Design Learning Through Tutorial Video

Various studies have shown that Youtube is an effective medium that can be used as an instructional tool in learning visual arts. This is in line with the trend of collaboration and social networking in education today (Dewitt et al., 2013). Through Youtube, users can access various video content that is relevant to learning or specific visual art skills.

Currently, Youtube is not the only media that accommodates the need to access video tutorials, various social media platforms also provide features to upload video tutorials even in real time. Facebook and Instagram sites have been equipped with the feature of video content which can be used for various purposes, both long and short duration videos. Even recently, Instagram added an IG TV feature that allows each user to have a personal channel through their personal account.

The activity of uploading, downloading and sharing video tutorials via youtube and social media has resulted in a unique form of interaction. Before the internet era, electronic-based media - like television - were only able to produce one-way interactions and feedback could not be obtained quickly. Interactions in virtual spaces emerge in line with the need to get instant practical understanding in order to problem solving. It requires colleagues who share the same interests and motivations in specific visual art skill. The form of interaction in virtual space is generally adapted from real life interaction. The advantage of the internet in accommodating the emergence of virtual learning space is the ability to overcome obstacles and obstacles related to time and region.

Video tutorials in producing visual art works, which show a variety of techniques, media and work processes, are developed by experts and professionals. The tutorial video is used by visual art learners to be able to learn directly from experts without any distance and time constraints.

Video tutorials of visual art by using various techniques, media and process of creating a choice for internet users to be able to learn from experts. Comments, criticisms and suggestions from fellow internet users, professionals, stakeholders become a trigger for learners in the visual arts to always explore information about skills that are relevant to their current needs. Supported by a variety of excellent-performing screen capture software, which easily records the work process of every artist and designer through computers, such as Camcast, Open Broadcast

Software, Action !, Shadow Play and other software. This statement is in line with previous research which indicated that the advanced video editing tool was more effective in relation to (1) the students' understanding of the topic and cognitive skills acquisition (2) the quality of the student's design products (3) the efficiency of dyad interactions (Zahn, Pea, Hesse, & Rosen, 2010). Support of software technology has been accelerating the growth of the number of video tutorials that are now not only created and uploaded from artists and professional designers, but also visual art learners.

5.3 Visual Art Appreciation and Social Media

The emergence of social media has changed the way artists and learners of visual arts interact with each other. Currently, the two most popular and widely used platforms are Facebook and Instagram. These two services have become important spaces for artists and art learners to share their work. The use of hash tags in social media facilitates users to be able to collect and sort creative content that suits their needs and interests. In addition, the use of hash tags can also be an indicator of support from fellow social media users. Social media has become a media that influences how visual art in the digital era is produced and displayed.

In recent years, social media has had a profound impact on art institutions and visitors, not only influencing the marketing but also the creation and curation of art (Sokolowsky, 2017). Survey conducted by Nielsen Media Research in 2014 of 2,000 people, showed that 39% of the population is active social media users. The age range of users who are most active in accessing social media is 16-29 years, and 20% of these young users state that they also use social media to get information about events and art content in particular. Thus in recent years, visitors to galleries, museums and art exhibitions from the younger generation have been increased as the consequence of viral publications through social media.

As an overview of the statement above, we can observe Yayoi Kusama's exhibitions which have been held around the world in last decade. Yayoi Kusama is an artist known for his minimalist works with a deep impression. Most of the Kusama art works on display were made since the 1950s, which marked his long experience as an artist in a period of 70 years (Kompas, 2018). Kusama's art combining dramatic, highly photographable visuals, immersive experiences and perfect selfie opportunities, is seemingly suits the Instagram age, even though her artworks are mostly created well before social media existed (1950s). In a short time, Kusama's exhibition became the ultimate FOMO ("fear of missing out") visual-art event (Sokolowsky,

2017). Social media users around the world enthusiastically attended Kusama's exhibition, they seemed to be competing to upload their best photos while attending this phenomenal exhibition.

Social media can contribute not only to artists' popularity, but also to the success of museums and art galleries in carrying out their mission. The number of social media followers is very influential on the wider network and community, across geographical and territorial boundaries. Social media seems to be a potential media to initiate crowdsourcing and crowd funding movements. Participation of communities across cities, even across countries can be initiated easily through social media. It also increases new audience's involvement and presence in various programs and activities held by art institutions such as museums and galleries.

5.4 Collaborative Visual Arts Learning and Virtual Communities

In visual art, the learning process is related to the demands of industry. The ability to absorb a number of information combined with an intuitive understanding is needed in seizing the challenges of any situation. The needs to adapt new technology in visual art industry are much faster than the learning curriculum offered by formal education. As digital natives, millennials are born as independent learners who are very flexible and adaptive. They do not have to go through formal education to get information that supports their skills and knowledge, but prefers a community that can accommodate their interests in learning knowledge and skills in visual arts.

The technological era is considered appropriate in accommodating constructivist education perspectives which confirms that individuals will achieve their maximum potential better when they are actively involved in exploring, exploring and sharing information that is shared with others in a community. Papert (1980) showed us the fact that "diving into" situations rather than looking at them from a distance, that connectedness rather than separation, are powerful means of gaining understanding. Becoming one with the phenomenon under study is, in his view, a key to learning. It's main function is to put empathy at the service of intelligence. To conclude, Papert's research focuses on how knowledge is formed and transformed within specific contexts, shaped and expressed through different media, and processed in different people's minds (Ackermann, 2001).

Virtual communities use internet technology to build networks, to build collaboration across geographical boundaries and time zones. Their place to gather and collaborate is the internet. Their work is based on active discussion and sharing activities through virtual communication. In terms of social exchange, members in virtual communities are willing to

provide valuable information and share with other members. By giving and contributing knowledge, they expect other members will give similar help in the future. Emerson (1976) stated that social exchange behaviors are the foundation of maintaining social interaction among people, rational individuals should pursue the biggest profit (Jinyang, 2015).

In a virtual community, everyone can play an active role in the learning process because everyone has the same opportunity to be alternately learners and instructors. Virtual communities connect creators, curators and spectators. They share ideas and can get instant feedback. The existence of virtual community is directly related to social media as the main media. Some virtual communities are initiated from personal accounts on social media.

The internet has facilitated users to be able to access and sort all information needed. In the context of art learning, each individual can determine and choose a virtual community that suits their interests and preferences, even sorting them to lead to very specific skills. For example, a virtual community that specializes in drawing and illustration. There are hundreds of illustration-themed virtual communities that actively publish their activities and discussions in social media spaces. Each community has different positioning from one another, even though they are in the same visual arts scope - drawing and illustration. Some specialize in the field of illustration using watercolor media, digital painting, or photo manipulation. Illustrator community's positioning is not only limited by techniques and media used, but also themes that frame the working spirit of the community members. Some illustrator communities focus on cultural themes, where other communities focus on illustrations for children, romance, da'wah and other interesting themes. Internet users can easily find and determine virtual communities that match their needs and interests.

Similar interest and motivation encourage member's sense of belonging in virtual community. It also becomes an individual's motivation to achieve success in a specific field or skill. By being part of the community, each member has a greater opportunity for their learning quality by directing their focus, asking questions, and working together to find solutions (Augar, Raitman, & Zhou, 2004). Thus, the durability of virtual communities can last longer than virtual classes, because of their adaptive nature and in accordance with the needs of community members.

6. Visual Communication Design Student and Their Professional Design Project

In the study involving 40 students of visual communication design, we found that most of the students also worked on design projects that were carried out professionally. So that, in addition to getting a design project done in order to fulfill lecture assignments, students also have design projects that further enhance their abilities and experience in the field of visual communication design.

Through observation and in-depth interviews, we identified several ways used by students in obtaining their professional design projects. Some design projects are obtained through conventional methods, by interacting directly with clients and direct meetings. Several other projects were obtained through student interaction with klilen which was conducted online, using social media, global creative platforms, and portfolio websites. The number of projects obtained through online interactions is more widely used by students, compared to projects obtained through conventional interactions.

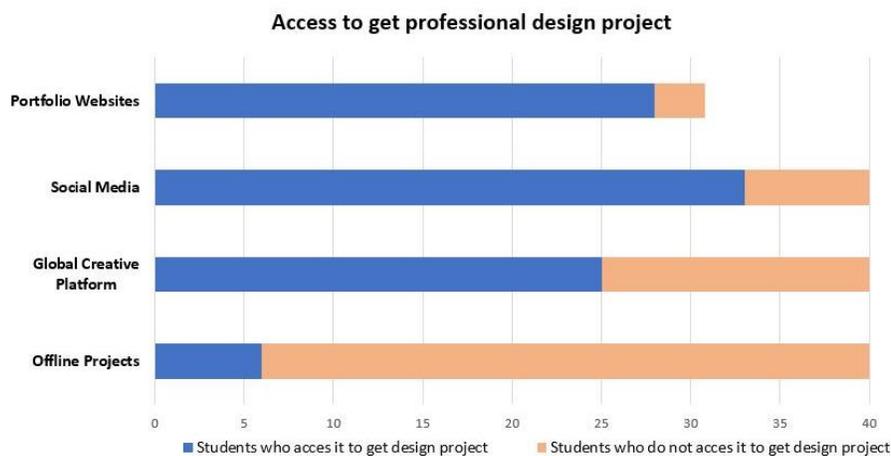


Figure 2: Access to get professional design project

Through this data, we found that the technical skills to create visual communication design projects are not enough to support students' success in facing industry challenges. Special skills are needed for them to be able to access various platforms to get jobs. Global creative platforms such as 99 design, guru.com, freelance.com must be started by students from the beginning, in order to increase their experience in interacting with clients, solving a design problem and responding feedback from clients. This experience will have positive impact on

their career as a designer. In addition, global competition also demands specific expertise to build good personal branding, as well as the ability to build communication and networking with the wider community, to support the success of visual communication designers in obtaining design projects.

Through this research, we made curriculum changes in visual communication design study program-Semarang State University. Some of the changes are focused on accommodating the needs of students to prepare the global competition in the field of visual communication design. Students involved in this research helped us to identify several subjects that were considered very important in supporting their careers as visual communication designers in the fourth revolutionary industrial era. Through several discussions involving students, alumni and practitioners we also identified several new courses that we offer for curriculum improvement in the coming year.

Table 1: *Recommended subjects that are accommodated in the upcoming curriculum*

Subjects	Accommodated in current curriculum	Accommodated in upcoming curriculum
Graphic Design	✓	
Digital Branding	✓	
Internet Marketing		✓
Portofolio Building		✓
Personal Branding		✓

7. Conclusion

Information technology has opened opportunities for students in educational institutions to access all information, materials and learning methods online and independently. They can easily filter and organize the learning materials they need to be able to improve their performance in producing visual communication design work. Visual communication design learning through exploring, seeking answers to every curiosity, developing self-potential, collaborating with others and raising awareness and confidence to upload individual work in order to get feedback from others is a different learning experience in the technology and information era. Collaborative participatory practices that arise in virtual spaces have had a massive impact on the development of visual communication design learning.

In addition, students at educational institutions have also begun to get design projects that are professionally obtained. Such experience is needed as a process to build their careers as reliable visual communication designers. Therefore, education institutions should not only focus on developing skills in the field of graphic design, but also the ability of students to build personal branding and build a quality portfolio since the early semester.

Educational institutions that organize education in the field of visual communication design, need to see this change as a bright side that is beneficial in improving the quality of graduates. Educational institutions need to be more open, adaptive and responsive in dealing with the changes brought by the fourth industrial revolution. It is not only about changing curriculum and teaching methods, but also improving the quality of teaching staff. Collaboration with practitioners and industries in the field of visual communication design is absolutely necessary to provide qualified visual communication design education and prepare their graduates who are ready to compete in the global era. The role of teaching staff is not replaced by learning materials that can be accessed by students online, because the existence of teaching staff is still needed to direct, assist and evaluate students in order to build a character of responsible and creative designers in the future.

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