

1 **Technique in digital Painting: The Challenge in Diversity**
2 **and Nonlinearity**

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9 In this digital age, drawing using a computer has become a norm that commonly
10 expected from an artist whose work in the creative industries. This demand
11 encourages some university in Indonesia to implement a digital painting course
12 in their curriculum. However, because it's still a new medium in Indonesia, there
13 is no specific guidance on regarding what substance should be studied to create a
14 digital painting. This study examines the process and the technique used by a
15 digital artist in Indonesia on how to create a digital painting. It will be analyzed
16 and categorized based on the way the artists organized the elements of art to their
17 drawing. The results of the observations concluded by giving an example of a
18 digital painting process descriptively. There are many diverse techniques in
19 digital paintings by Indonesian digital painter, but it can group into two, namely
20 conventional technique and grayscale to color technique. In additional, the
21 process of making a digital painting is not always linear as traditional painting.
22 This diversity and non-linearity will provide challenges for a lecturer to
23 determine the right techniques and the best process of making a digital painting.

24 **Keywords:** *computer graphic, digital illustration, digital painting, creative industry,*
25 *graphic design software, new media art*

26 **1 Introduction**

27 In this digital age, painting using a computer has become a norm that commonly
28 expected from an artist whose work in the creative industries. The rising of
29 digital technology in creative industry open up opportunities for digital art to
30 expand its various form. Nowadays digital painting in Indonesia used in many
31 forms for advertising, comic, video game, animation, and other creative
32 industry. It is an emerging medium studied by young artist and designer in a
33 respond of increasing demands in the creative industry for digital art. This
34 popularity is also promoted by many internet platforms which showcase many
35 digital art and its tutorials freely on the internet.

36 If there is a demand, then there is a supply, which encourages some university
37 in Indonesia to implement a digital painting course in their curriculum. Some
38 universities such as Multimedia Nusantara University, Bina Nusantara
39 University, Trilogy University has opened a class for digital painting or
40 illustration that focuses on harnessing the use of software design to paint
41 digitally. Independent Art and Design courses in Indonesia also has opened a
42 course of digital illustration in their curriculum, the example of it is Carrot
43 Academy, Brush Studios or Enspire Digital School of Art. However, because it
44 is still a new medium in Indonesia, there are no specific guidelines regarding
45 what substance should be studied to create a digital painting. Therefore, there is
46 urgently research about techniques and processes in digital painting.

47 Based on Cui in [1], digital painting is simply a computer painting, in terms of
48 production in terms of computer software and digital graphics tools on the
49 computer to create the product. Chengdu University School of Fine Arts
50 Professor Zhong Yuanbo's "Digital Painting" in the definition of digital painting
51 art is a computer as a painting art creation media, the use of program editing,
52 computer batch information processing, each tiny pixel element encoding to
53 form a virtual the visual image, presented in front of the public. Professor Wang
54 Daming, a professor of literature and art at the Southwest University for
55 Nationalities, defines "digital media and art development". Digital painting
56 refers to a new form of computer science, which is based on computer, using
57 drawing software, multimedia technology and network technology. Digital
58 painting art is mainly based on computer technology and creation, to the
59 network of new media as the carrier and the spread of digital painting from birth
60 so far.

61 Learning digital painting does not mean all the works carried out by computer.
62 Morse, a content manager of 3DTotal.com, a publishing that has published a

digital painting technique book said in [2], although digital art creates a new possibilities and provides us tools that can help our artistic processes, it is also important to remember that the art fundamentals like composition, color, light, and design cannot be avoid or cheated. These statements were supported by Samah in [3], that digital art learning closely related to conventional painting learning. Weakness in producing a conventional painting will affect the results of the work in digital painting. Digital art is inseparable from the fundamental art elements, aesthetic value, and design. Teaching and learning a digital art require both using art an science perspective. Both must be integrated to get a clear understanding of the principles of art and skill that can generate digital art as well understand the scientific concepts in digital technology.

2 Tools in Digital Painting

Since the trend in digital technology has a significant influence in digital painting, an artist must have knowledge and skill in a computer graphic software commonly used to paint digitalized. Shamsuddin stated in [4] established media is frequently dominant to a digital artist's capability to create use of the software. In Indonesia, the most common drawing software used by digital painter are Adobe Photoshop, This software already used by many digital artists worldwide for years. Other graphics software to paint digital is Paint tools SAI, Corel Painter, Manga Studio and Artrage.

The computer drawing software has a virtual canvas and virtual painting tools that contain brushes, color palette, eraser, and other tools. The color palette served as the virtual paints/pigments which were applied to the virtual canvas using brush, smudge or other virtual painting tools. In practice, this virtual canvas and virtual painting tools presented through a computer monitor. The size of canvas in digital painting measures based on the number pixel instead metric or imperial units in a traditional canvas.

90 Hang identified in [5], that digital painter usually paints with a stylus on a
91 graphics tablet which acts like a pen on a drawing board. Digital painting differs
92 from other forms of computer-generated art in that the artwork is painted stroke
93 by stroke manually instead of being rendered by some computer algorithms.
94 Instead of pulling curves using a mouse, the digital painting also keeps the
95 'manual' feel of the traditional craft. Shamsuddin supported this in [6], that
96 Photoshop and Corel Painter have turn out to be more basic software, and
97 graphics tablets become frequent hardware, assist more efficient
98 implementation methods. A graphics tablet is a computer input device that
99 enables an artist to paint images by hand similar to the way an artist paints an
100 image manually with a pencil or brush in a paper. Nowadays, an artist can find
101 various types and brand of graphics tablet on the market.

102 **3 Objectives and Scope of Research**

103 The purpose of this research is to observe the technique in a digital painting
104 which commonly used by Indonesian professional digital painter. With hope, it
105 can find the similarities and the differences. Research observation focus on a
106 digital painting uses in the creative industry in Jakarta. So the result can be a
107 reference on how to make digital painting step by step.

108 The term digital painting in this research are a raster image which paints using a
109 drawing software like Adobe Photoshop or Paint tools SAI with the helped of a
110 graphics tablet. These terms are used to limit the scope of research. Generally,
111 the term of digital painting is more board than the scope of the digital painting
112 on this research.

113 **4 Methodolgy and Tools of Research**

114 The methods used in this research is by analyzing and categorizing digital
115 painter process and technique based on how the artists organized the elements
116 of art to their drawing. The elements of art are a line, color, shape, value, form,

117 space, and texture. This observation will clarify the similarity and the different
118 technique on how the artist achieves the finishing product. After that, the
119 observations will conclude by giving an example of a digital painting process
120 descriptively.

121 The process of the demonstration will be documented and will be explained
122 based on art and technology approach. The user interfaces of the software used
123 during the painting process will be explained to show an impact and effect of
124 digitalized in painting. This research uses Adobe Photoshop CC program,
125 which is currently the most common software used by Indonesian professional
126 digital painters. Graphics tablet will be connected with Adobe Photoshop and
127 serves as an input device to draw on a computer. Graphic tablet used is Wacom
128 Intuos Pro.

129 **5 Observation**

130 Digital painting in Indonesia is closely related to the CG art for creative
131 industries and mostly targeted for commercial production as a commercial
132 illustration for animation, video games, board games, comics art, and other
133 creative industry. Most artists are work in illustration studios,
134 advertising/design agency, or freelance. It is hard to track every digital artist in
135 Indonesia, except he/she already famous or join illustration studios in Jakarta
136 like Caravan Studios, Stellar Labs Studios, and Gong Studios.

137 In Caravan Studios, most of the digital artists have realistic drawing style.
138 These choices of style because it might more suitable with studio project. Most
139 of the studio project is from creative industry such as concept art and illustration
140 for a video game, card game, advertising, and western comic. This relation
141 between the demand in creative industry and the style of artist validates a theory
142 from Cui in [1], about the impact of industry style segmentation in the
143 development trend of Digital Painting art. It is the same with Stellar Labs with

144 their realistic style of digital painting because of a demand in the western comic
145 industry. Also, Gong Studios with their cartoon style because of a demand in
146 the mobile game industry.

147 Many Indonesian digital artist shares their process on how they make a digital
148 painting in social media. Some post on Instagram, YouTube, platform
149 showcases like Artstation, Facebook or blog. This information that circulated
150 freely on the internet makes the author more easy to examine the process of
151 making a digital painting for each digital artist. After observations, even though
152 many diverse techniques in digital paintings by Indonesian digital painter, it can
153 group into two distinct variations. This two distinct variation can be named a
154 conventional technique and grayscale technique.

155 **6 Conventional Technique**

156 The conventional technique is a technique of digital painting that has a similar
157 process of traditional painting. The process always begins with the sketched
158 composition that features line and shape. The sketch can be very detailed or
159 just a loose outline of how the composition works. The second step is colorize
160 the sketch with a basic color. At this step of the process, the painter may use
161 several ways to gives color on a painting. The first way is by using selection
162 tools and then fill the selection by paint bucket tools. The other is by using a
163 brush to color the sketch. Usually, the sketched and the basic color is on a
164 different layer, so the original sketch remains visible and not erased or over
165 paint by the color. The existence of a layer in Adobe Photoshop that give a
166 different feel between digital painting with traditional painting.



Figure 1 Digital painting process with conventional technique.

170 The next step is to focus on values and shapes in the painting. In step 3 on
171 **figure 1**, Shadow and highlight began to form and give a distinct three-
172 dimensional form instead of a two-dimensional form. Most of the activity in
173 this step is blending colors and adding color to make shadow and highlight
174 more prominent. This step is where the knowledge of art fundamental and color
175 theory on artist critical on the result of the final painting. Lack of this
176 knowledge will make the painting unnatural and have strange color choices.
177 There are several tools to blend color. The first is to change the brush set so it
178 can blending color smoother. The trick is using shortcut alt to pick a transition
179 color between two colors that will be blended by a blending brush. The other
180 tools to blend the color is by using a smudge tool. Depending on what the
181 styles of the artist, there are advantages and disadvantages between these two
182 tools. The process to blend all this color are arguably the most retentive and
183 repetitive activity in the process of making a digital painting.

184 Lastly is adding detailed texture and adjust drawing if necessary. Adobe
185 Photoshop that primary functions are imaging and editing software has
186 powerful tools to edit and adjust an image. Example of this last step is using the
187 layer properties to change the blend modes on a layer. Changing blend modes
188 on a layer from normal to color dodge/linear dodge and using a light colored
189 brush in to lighten the area of the drawing will give a glow effect from sunlight.
190 Sum stated in [7] it is time-consuming to create some glow, explosions, dreamy
191 environment in traditional painting. This statement is true, as making the glow
192 effect of sunlight in this step are very easy. Others example of adjustment
193 which commonly done by a digital artist are giving a blur effect on the
194 background using a filter in adobe photoshop so it can give more depth in a
195 painting.

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197 7 **Grayscale Technique**

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Figure 2 Digital painting process with grayscale technique.

201 The grayscale technique is a new technique in painting that just can be applied
202 in digital painting. The idea is to focus on value, form, shadow, and lighting to
203 give a three-dimensional feel in painting as illustrated in step 2 **figure 2**. After
204 the global value formed in the painting, the artist applied the color by utilizing a
205 blending mode in the layer (overlay, soft light, or other blending modes). In
206 this process, the artists do not choose their own color palette for shadows and
207 light on an object. Rather, the artist just chose the base color and then the
208 software will adjust the color of the shadow and lighting based on the grayscale
209 value that previously made by the artist. The challenge in this step is to get a
210 value of the color right. Robertson stated in [8] when working on grayscale
211 rendering, the tendency is to extend the value range to help make the form
212 changes more dramatic and obvious. This is done without the consideration of
213 what color those values might eventually be.

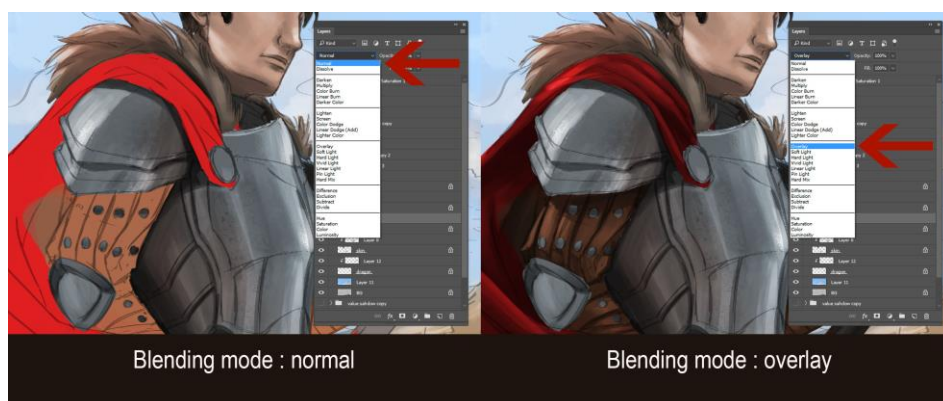


Figure 3 The difference effect of blending mode in layer.

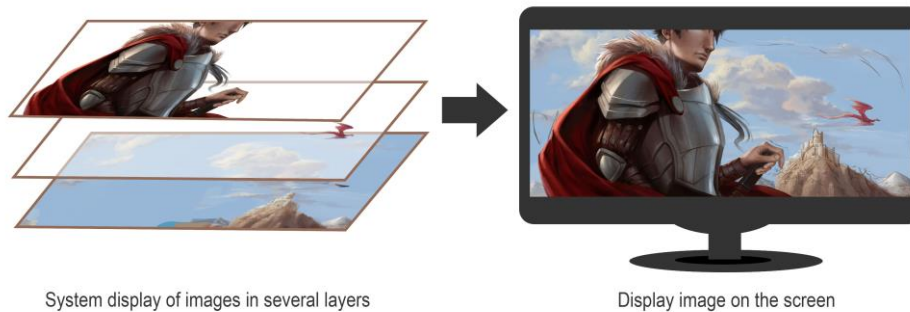
217 In step 2 and 3 **figure 2**, the differences are prominent form a conventional
218 techniques. If a conventional technique begins with color and then adding value
219 and shape next, a grayscale technique begins with value and shape in painting
220 and then adding color with the help of the blend modes in layers next.

221 Arguably, this technique is more easy for most beginner digital artist, because
222 they do not have to choose a color from million color shades in the virtual
223 palette.

224 After applying color in grayscale, most artist over paint their painting to add
225 more color and detail. Because even though the blend modes in layer give the
226 benefit of the more structural color of shadow and lighting, the color usually
227 less lively and muted form artist imagination. The last step more or less similar
228 to the conventional technique.

229 8 Nonlinearity in Digital Painting

230 Mokhtar summarized in[9], that digital painting remains its visual literacy while
231 adding new ones such as dimension and the nonlinear processes. This
232 nonlinearity in digital painting most clearly can be seen by "undo" feature in
233 every computer graphic software. Annum stated in [10], that is the advantage
234 of digital painting is the ability to undo and redo applied stroke. The ability to
235 undo or redo some mistakes in digital painting is favorite shortcuts by an artist.
236 Based by user behavior pattern research in a digital painting by Shen in[11],
237 undo is a one of the shortcut behavior that used most often by an artist.

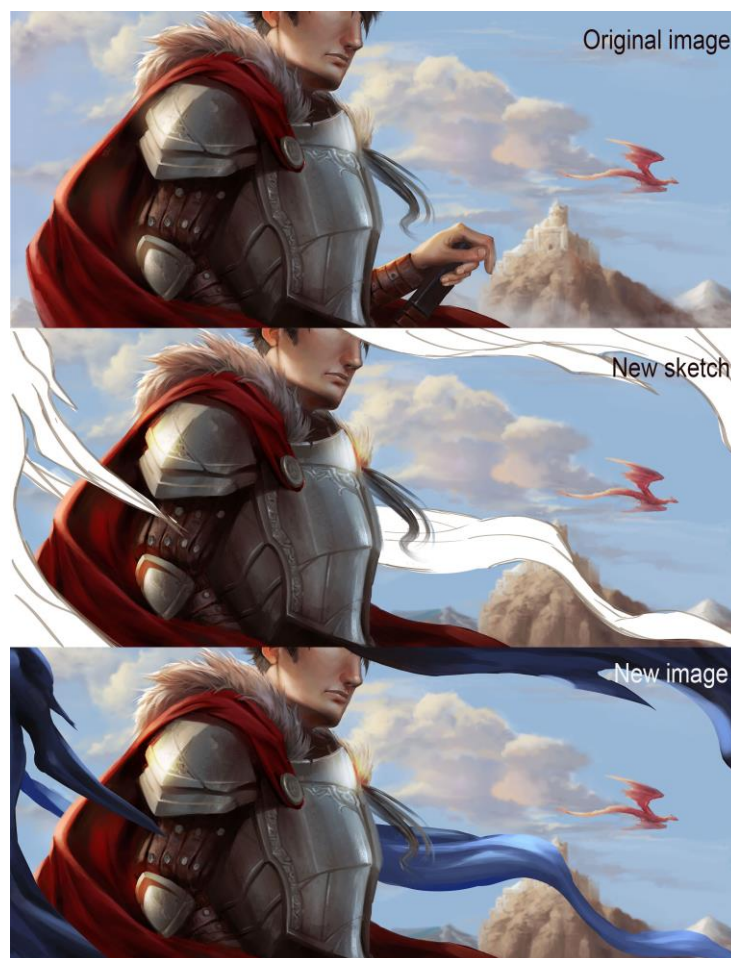


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Figure 4 System layer in adobe photoshop program.

240 Another feature in computer graphic software like Adobe Photoshop which
241 causes nonlinearity processes in digital painting is the capability of using an
242 infinite layer in virtual canvas. This layer can be used to separate parts of the
243 image on canvas. Therefore, the artist can edit part of the image without
244 damaging another part of the image. Artists often use this advantage to create
245 an alternative image of their works without having to start from the beginning.
246 They can edit the part of the image they want to change.

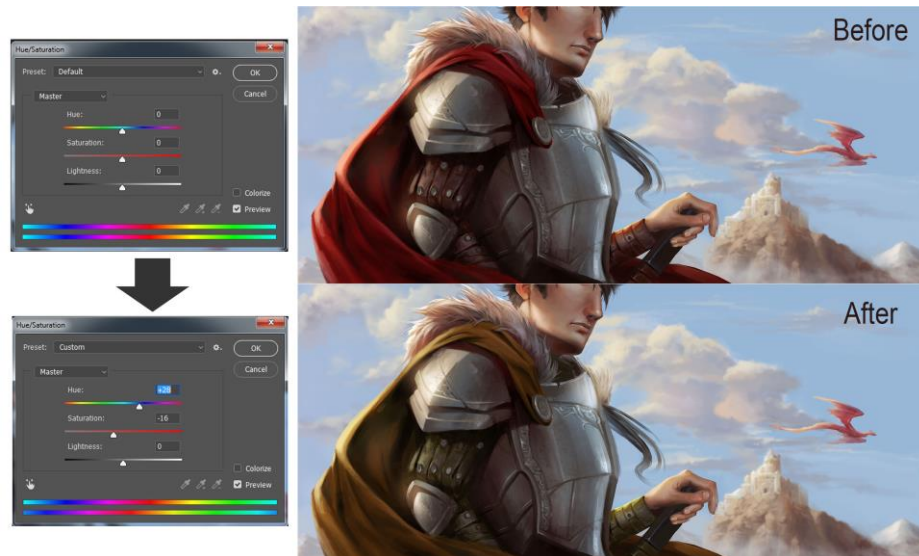


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Figure 5 Edit part of the image in adobe photoshop program.

249 Another nonlinearity in digital painting is editing and adjustment features in
250 Adobe Photoshop. This feature allows the artist to change color or shape with
251 the help of a computer. By simply adjusting the sliders on the adjustment tool,
252 the artist can change the hue, saturation or light of the color without having to
253 paint it over again.



254

255 **Figure 6** Color change in part of the image (cape part) using image adjustment
256 in adobe photoshop program

257

258 9 Conclusion

259 There are many diverse techniques in digital paintings by Indonesian digital
260 painter, but it can group into two, namely conventional technique and grayscale
261 to color technique. This two technique has its challenges to master it. The
262 conventional techniques require artists to master the fundamentals of art fully.
263 Due to a large number of shade colors on a virtual palette, artists can feel
264 overwhelming and difficult in choosing colors. The grayscale technique
265 requires artists to understand the relationship between value and color. Also,

266 the artist must also understand how to work on the layer blend mode to
267 correctly colorize their grayscale image.

268 In addition, the process of making a digital painting is not always linear as
269 traditional painting. Most nonlinearities are the impact of digital features in
270 software computer graphic. Advantage features in Adobe Photoshop like undo,
271 layers, adjustment, and editing tools are influence on how a digital artist paint.

272 This diversity and non-linearity will provide challenges for a lecturer to
273 determine the right techniques and the best process of making a digital painting.
274 Based on observation, it was found a link between demand in the creative
275 industry and an artist digital painting style. Therefor, the lecturer should
276 consider a digital painting technique that matches the trends and needs that
277 circulated in the creative industries.

278 **References**

- 279 [1] Cui, J (ed), *Research on Digital Painting Art and its Diversified*
280 *Performance*, Advances in Social Science, Arts, Education and
281 Management Engineering, pp. 1429-1432, 2017.
- 282 [2] Morse, S., *Introduction*, Digital Painting Techniques volumes 2, 3D Total
283 team, ed. 2, 3DTotal.com Ltd, pp. ix, 2011.
- 284 [3] Samah, A.A., Putih, A.T. & Hussin, Z., *Digital Tools: Enhancing*
285 *Painting Skills among Malaysian Secondary School Students*, TOJET,
286 **15**(3), pp. 58-67, July. 2016.
- 287 [4] Shamsuddin, A.K., Islam, M.B. & Islam, M.K., *Evaluating Content Based*
288 *Animation through Concept Art*, International Journal of Trends in
289 Computer Science, **2**(11), pp. 818-830, 2013.
- 290 [5] Hang, C.S., *Making Digital Painting Organic*, PhD dissertation,
291 Departemen of Science and Engineering, The Hong Kong University of
292 Science and Technology, Hongkong, 2007. (Thesis or Dissertation)
- 293 [6] Shamsuddin, A.K., *Digital Painting; The Trouble-Free Appearance of*
294 *Virtual Thought and Pretends*, Journal Modern Science an Technology,
295 **2**(2), pp. 51-58, Dec. 2014.
- 296 [7] Morse, S., *Introduction*, Digital Painting Techniques volumes 2, 3D Total
297 team, ed. 2, 3DTotal.com Ltd, pp. ix, 2011.

- 298 [8] Robertson, S. & Bertling, T., *How to Render*, ed. 1, Design Studio Press,
299 2014.
- 300 [9] Mokhtar, M., *A conceptual and Technical Discussion on Digital Painting*
301 *as New Media Art: Introducing Some Malaysian Works*, Journal of Visual
302 Art and Design, **4**(1), pp. 67-83, 2013.
- 303 [10] Annum, G.Y., *Digital Painting Evolution: A Multimedia Technology*
304 *Platform for Expressivity in Fine Art Painting*, Journal of Fine and Studio
305 Art, **4**(1), pp. 1-8, 2014.
- 306 [11] Shen, J., Chen, L., Qin, Z. & He, W., *Natural User Interface Design for*
307 *Digital Painting Based on User Behavior Patterns*, International
308 Conference on Artificial Intelligence and Computer Science, pp. 183-187,
309 2016.