

Development of a Digital Self-Portrait Drawing Learning Resource Based on Ibis Paint X For Visual Journaling in Junior High School

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Abstract

This research aims to develop a digital character drawing learning medium based on the Ibis Paint X application for visual journal learning in junior high school students. The study employed a Research and Development (R&D) method using the Dick and Carey instructional design model, which consists of ten systematic stages. The resulting product is a digital learning medium comprising modules, video tutorials, and examples of visual artworks. Validation by content and media experts indicated that the developed medium is suitable for use. Trial results from individual, small group, and field tests demonstrated improvements in student creativity, learning motivation, and active engagement in visual arts learning. These findings suggest that contextually relevant digital learning media effectively support visual arts learning outcomes within the Merdeka Curriculum framework.

Keywords: Digital learning media, Ibis Paint X, Visual journal, Student creativity, Visual arts



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Introduction

The development of information technology over the past decade has not only changed the way humans communicate but also fundamentally shifted the learning paradigm in schools. Classrooms, which were once synonymous with blackboards and textbooks, now face the demand to respond to the digital reality experienced by students every day. This transformation is not merely a trend but a structural necessity that the education system must address seriously. (Adzan et al., 2021) emphasises that technology-based learning functions to provide ease for students in understanding concepts as well as increasing their enthusiasm for learning because the material delivered is able to attract attention visually and interactively.

In the context of visual arts education, the potential of digital technology has not yet been fully utilised, even though this field is actually the most relevant to the constantly evolving visual world. Visual arts as part of the Cultural Arts subject play a strategic role in developing students' abilities to express visually, their aesthetic imagination, and the formation of their personal identity. Through art education, students are encouraged to express ideas, emotions, and personal experiences into original and meaningful visual forms. (Munandar, 2012) refers to creativity as the ability to generate new ideas from the combination of thoughts and experiences possessed by an individual, and that creativity can only develop optimally if supported by the right media, freedom of expression, and a pleasant learning environment.

Findings from various contemporary studies reinforce this statement. (Rachmadtullah et al., 2020) In her study in the primary school environment, she found that the use of digital learning media

significantly increased students' creativity and intrinsic motivation. In line with this, (Crompton & Burke, 2020) concluding that the integration of mobile devices into the learning process, particularly through applications that are already familiar to students, produces a positive effect on cognitive and affective engagement. This means that it is not merely the presence or absence of technology in the classroom that matters, but rather how contextual and meaningful that technology is for the students.

The Merdeka Curriculum places Visual Arts learning in Phase D (Years VII–IX of secondary school) with Learning Outcomes that require students to explore and express personal ideas through two- and three-dimensional works using various techniques and media, to communicate meaning and self-reflection through visual works, and to demonstrate an appreciative and creative attitude in the creation process. One of the most suitable materials for achieving these outcomes is the visual journal, which involves documenting experiences, feelings, and ideas in a reflective and personal visual form. The visual journal is not merely a drawing exercise but a process of developing self-awareness and reflective skills that hold high pedagogical value (Moon, 2006); (Garvis & Prendergast, 2020).

However, the reality on the ground shows a significant gap between that potential and the actual learning practices. Based on initial observations conducted at SMP Negeri 1 Kepung, Kediri Regency, art education is still dominated by conventional approaches: students drawing on paper with pencils and watercolours, while teachers mostly act as task assigners rather than facilitators of creative exploration. This situation results in several concrete obstacles, ranging from limited media for experimenting with colour effects and textures, low motivation due to monotonous activities, to methods that do not align with the characteristics of the digital generation, who are accustomed to interacting with interactive visual interfaces every day. The initial survey results distributed to students reveal an interesting fact: most students are already familiar with, and have even tried, the digital drawing application Ibis Paint X outside of school, but have never used it in a formal learning context. Art teachers also admit that this application has untapped potential to support more creative and contextual learning.

Ibis Paint X is a digital drawing application designed for mobile devices (Android and iOS) and has over 300 million users worldwide. Its features include more than 10,000 types of brushes, a flexible layer system, blending modes, colour effect filters, and the ability to record the drawing process as an automatic video tutorial. (Dihyah, 2021) stating that these features make it easier for beginner users to create digital works that are both precise and aesthetically pleasing without the need for expensive hardware. Its accessibility through students' existing smartphones makes Ibis Paint X a strong candidate as a digital-based art learning medium.

The urgency of developing this media is supported by the findings. (Annifa'ari et al., 2024) which shows that the use of digital media in art learning has a positive and significant effect on students' creativity. Furthermore, the research (Saputra & Ekawati, 2021) to prove that mobile application-based learning media enhances students' motivation and learning outcomes more effectively than conventional media, especially in practical and visual subjects. Based on this argument, the development of digital character drawing learning media based on Ibis Paint X within the context of visual journals becomes relevant, urgent, and scientifically justifiable.

This research aims to: (1) develop a digital character drawing learning media based on Ibis Paint X that is theoretically and practically feasible for use in secondary schools; (2) test the effectiveness of the media in improving students' creativity, motivation, and engagement; and (3) provide empirical contributions to the development of art education pedagogy based on digital technology within the framework of the Merdeka Curriculum.

Methods

This research uses a Research and Development (R&D) approach, which is a type of study specifically designed to produce a particular product while also testing its effectiveness in real-world situations. (Borg & Gall, 2003) defines R&D as a process used to develop and validate educational products through a series of systematic and structured stages, including needs analysis, design, development, testing, and

revision. This approach was chosen because the main goal of the research is to produce a learning media product that is not only theoretically designed but also tested for feasibility and effectiveness in the field.

The development model used is the Dick and Carey Instructional Design Model. (Dick et al., 2015), which is known as a system-oriented design approach. This model views learning as a system consisting of components that interact dynamically. The choice of this model is based on its suitability for research objectives that not only produce a product but also ensure its relevance, consistency, and accountability through phased evaluation.

Dick et al. (2015) stating that this model functions to identify learning objectives, analyse the characteristics of learners, develop instructional strategies, and conduct ongoing formative evaluation to refine the product before widespread use. The advantage of this model lies in its comprehensive and iterative approach, allowing any weaknesses in the product to be detected and corrected prior to full implementation. This makes Dick and Carey one of the most widely used models in the development of media and learning tools (Branch & Dousay, 2015); (Gustafson & Branch, 2002).

The research procedure adopts a ten-step model by Dick and Carey, adapted to the context of developing digital visual arts learning media. The first stage is the identification of learning objectives, which involves formulating the competencies that students should achieve after using the media. In this case, the objectives are set based on the gap between students' initial abilities and the learning outcomes specified in the Merdeka Curriculum. The second stage is learning analysis, where the researcher maps out the prerequisite skills needed, ranging from basic sketching abilities, digital colouring techniques, to operating the main features of Ibis Paint X.

The third stage includes analysing student characteristics and context. This analysis cannot be overlooked because the design of targeted media must be based on a deep understanding of who the users are: the age and cognitive development stage of secondary school students (11–15 years), digital literacy levels, availability of smartphones, and the real conditions of art learning in the classroom. Data are collected through classroom observations, teacher interviews, and student questionnaires. The fourth stage involves formulating specific and measurable performance objectives. These objectives include the ability to use brush, layer, and colour palette features; create a self-character sketch with correct proportions; and complete a work using digital colouring techniques.

In the fifth stage, assessment instruments are developed, including a work assessment rubric, expert validation sheets, and student response questionnaires. Validation is carried out by two validators: one subject matter expert (an experienced art education lecturer) and one media expert (a learning technology specialist). The sixth stage involves the development of learning strategies, which include staged material presentation, visual examples at each step, feature demonstrations, and progressive exercises from sketches to line art and colouring. These strategies are formulated based on the principles of the Multimedia Learning Theory (Mayer, 2009), which states that humans learn more effectively from a combination of words and images than from words alone. The seventh stage is the development of the learning materials themselves. The researcher designs storyboards, produces written content, creates step-by-step tutorial videos, designs character drawing modules, integrates sample works, and performs editing and finalisation of the product. The entire product then enters the eighth stage, namely gradual formative evaluation: individual testing (one-to-one) with three students to check the clarity of the media, small group testing with 8 students to measure initial effectiveness, and field testing with 28 students to assess implementation in real conditions. Data obtained from each evaluation stage serve as the basis for revisions in the ninth stage. Revisions include improving appearance, simplifying instructions, adding examples, and enhancing visual quality. The tenth stage, summative evaluation, was not conducted in this study because the main focus was on formative validation, as is customary in limited-scale development research.

The data analysis used is qualitative descriptive analysis for interview and observation data, as well as descriptive statistical analysis (percentage and average) for quantitative data from questionnaires and assessment rubrics. Validation scores are interpreted using a four-level Likert scale,

with categories: very feasible ($\geq 81\%$), feasible (61–80%), less feasible (41–60%), and not feasible ($< 40\%$). A data triangulation approach is employed to ensure the validity of the research findings (Creswell, 2012); (Sugiyono, 2017).

Results and Discussions

1. Results

This developmental research produces a digital learning media that is designed in an integrated and systematic manner to support learning how to draw self-characters through the Ibis Paint X application within the context of visual journals at the secondary school level. The final product consists of three main components that complement each other: a step-by-step illustrated text module, tutorial videos recording the drawing process in real-time, and a collection of self-character artwork examples created by students as expressive references. These three components are designed not as separate entities, but as a cohesive learning system, following the principles of system-based instructional design. (Dick et al., 2015).

The product produced is a digital learning media based on Ibis Paint, consisting of modules, tutorial videos, and sample works. The media is designed gradually to facilitate students in understanding the digital drawing process.



Figure 1. Ibis Paint X Usage Module



Figure 1. Video tutorial Ibis Paint X

Conceptually, the design of this media is based on the Multimedia Learning Theory. (Mayer, 2009), which emphasises that humans learn more effectively through simultaneous verbal and visual representations rather than through just one of them. The application of this theory is evident in how the modules are organised: each technical drawing step is accompanied by a screenshot of the Ibis Paint X interface with visual annotations, so students not only read the instructions but also see directly how the instructions are applied. With this approach, students' cognitive load can be minimised, and the transfer of knowledge from media to practice becomes smoother (Sweller, 2020)

The validation results from subject matter experts showed an average score of 84.2%, which falls into the very feasible category. Validators assessed that the content of the material was in accordance with the Learning Outcomes of Phase D in the Merdeka Curriculum, with a logical and progressive presentation structure, and the included work examples were able to stimulate students' expressive ideas. Media validation yielded a score of 81.7%, categorised as feasible. Appreciated points included the consistency of the interface design, text readability, and the visual quality of the tutorial videos. These validation scores align with the feasibility standards outlined by (Arsyad, 2017), which states that media is considered suitable if it meets the aspects of content, presentation, language, and graphics proportionally.

The individual trial phase involving three students yielded an important initial finding: the students were able to follow the steps in the module independently without intensive guidance, although there were some sections considered too text-heavy. This feedback was directly used as the basis for the first revision, which involved trimming the text and adding supporting illustrations. These adjustments are in line with the principles of segmenting and signalling in multimedia design that are recommended (Mayer & Fiorella, 2021), which proves that presenting information gradually and with clear visual markers significantly improves understanding.

A small group test with eight seventh-grade students showed a significant increase in their interest in learning. Based on the response questionnaires distributed, 87.5% of students stated they were more enthusiastic about learning visual arts using this media compared to conventional methods, and 100% of students stated that the tutorial videos helped them understand digital drawing techniques more easily. These findings are consistent with the research results (Crompton & Burke, 2020) who found that mobile application-based learning media consistently results in higher cognitive and motivational engagement compared to print media, especially among adolescent age groups familiar with digital technology.

Field tests involving 28 seventh-grade students produced richer and more comprehensive data. In terms of creativity, the assessment of works using a rubric developed together with the validation team showed an increase in the average score from 62.4 (before using the media) to 78.9 (after) in the dimensions of originality and visual elaboration. This increase aligns with the definition of creativity that was proposed (Munandar, 2012), which is the ability to generate new, different, and elaborative ideas. More specifically, students who previously tended to imitate their friends' work or direct references are beginning to show stronger variations of personal expression in their choices of colour, line style, and character composition.



Gambar 3. Hasil Karya Siswa

From a motivation perspective, survey data shows that 89.3% of students feel more encouraged to complete their work thoroughly when using Ibis Paint X compared to drawing manually. The most frequently mentioned factor is the freedom to experiment without fear of 'permanent mistakes', as the undo and layer features allow students to try various visual options without the risk of damaging the overall work (Freedman, 2010) refers to the aspect of reversibility

as one of the fundamental advantages of digital media in art education: students become more daring to experiment because the risk of failure is temporary and can be corrected.

2. Discussions

From the aspect of engagement, classroom observations during field testing showed an increase in the average duration of active student engagement from 22 minutes (conventional learning) to 41 minutes per session (using Ibis Paint X media). Students who were usually passive and waiting for the teacher's instructions began to initiate independent exploration, ask friends about specific techniques, and voluntarily show their work progress to the class. This social dynamic reflects what Vygotsky referred to as the active zone of proximal development, where students mutually encourage each other's cognitive development through meaningful social interactions (Lantolf & Thorne, 2006).

From the perspective of visual journals as a learning genre, the utilisation of Ibis Paint X has proven to expand the range of expression available to students. While in conventional mediums students are limited to the available colours of paint or pencils, in a digital environment they have access to thousands of colour options, textures, and effects that can be combined freely. Moon, (2006) argues that visual journals are most effective when the medium used provides users with the freedom to experiment without external aesthetic pressure, and this is precisely what Ibis Paint X offers. The findings Garvis & Prendergast, (2020) it also shows that digital-based visual journals enhance students' depth of self-reflection because the easy revision process encourages them to continuously evaluate and refine their visual expressions.

Another interesting finding is the emergence of a stronger dimension of self-identity in the works produced. The character of the self depicted by students is not merely a physical representation of the face or body, but reflects values, hobbies, aspirations, and the emotional atmosphere that are unique to each individual. This indicates that visual journals have served as an authentic reflective medium (Bullock & Galambos, 2019) It is noted that self-reflection-based art activities among adolescents are positively correlated with emotional maturity and the formation of a more stable identity.

The obstacles encountered during the trial process also need to be honestly recorded. The digital skills among students vary significantly, with some students already skilled in operating Ibis Paint X, while others require more time just to get accustomed to the application's interface. Additionally, some students use smartphones with screens smaller than optimal, making it more difficult to achieve precision when drawing facial details. Such digital divide issues are not new in educational technology literature Warschauer & Matuchniak, (2010), And the solution is not enough just by providing good media, but also requires adaptive and structured teacher guidance. In this study, teacher guidance has proven to effectively bridge the differences in ability, so that all students are ultimately able to produce work in accordance with the learning objectives.

Overall, this learning media successfully addresses the gap identified at the beginning of the study: the absence of digital-based media that are contextual, pedagogically viable, and capable of facilitating the development of students' creativity as well as self-reflection in visual journal learning. Compared to similar previous research, such as the use of Adobe Illustrator or Procreate in secondary art education. (Shin & Bickel, 2021) Ibis Paint X offers the advantage of accessibility because it does not require a subscription fee and can be run on a regular smartphone. This combination of high accessibility with rich features makes Ibis Paint X a more inclusive and democratic choice in the context of visual arts education in Indonesian junior high schools.

Conclusion

The digital character drawing learning media based on Ibis Paint X developed in this study is declared feasible and effective for use in visual journal learning at junior high school. This feasibility is confirmed through expert validation processes that yield scores above the minimum feasibility threshold ($\geq 61\%$), and reinforced by phased trial results that consistently show positive responses from students. The

effectiveness of the media is demonstrated through three main indicators. First, students' creativity increased measurably, particularly in the dimensions of originality and visual elaboration of their work, as reflected in rubric assessments showing an average score increase of 16.5 points. Second, students' motivation to learn increased significantly, with more than 89% of respondents reporting higher enthusiasm compared to conventional learning. Third, students' active engagement during lessons nearly doubled, from an average of 22 minutes to 41 minutes per session, indicating deeper cognitive and affective involvement. This study also shows that integrating digital applications familiar to students into a systematically designed formal learning framework produces a more effective impact than merely introducing new technology. It is important to note that the success of this media depends on the role of teachers as adaptive facilitators, especially in bridging digital skill gaps among students. Recommendations for future research include: (1) expanding the trial scale to multiple schools with different socio-economic backgrounds to assess the generalisability of the findings; (2) developing portfolio-based digital assessment features directly integrated into the media; and (3) exploring the use of similar applications for other visual arts materials such as poster design, comics, or simple animations. At the policy level, these findings provide strong arguments for schools and education offices to encourage the integration of accessible digital applications into art education as part of the authentic and meaningful implementation of the Merdeka Curriculum.

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