

## Research Article

# The Development of a *Webtoon*-Based Digital Comic Entitled “*Was machst du?*” for Enhancing A2-Level German Reading Skills

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**Abstract:** This study aims to develop an instructional medium in the form of a *Webtoon*-based digital comic entitled “*Was machst du?*”, adapted from the *Netzwerk neu A2* textbook, to enhance German reading comprehension at the A2 level. The development model used is ADDIE (Analysis, Design, Development, Implementation, Evaluation). Validation was conducted by two experts one in content and one in media with validation scores of 91% and 92%, respectively, indicating that the comic is highly suitable for instructional use. A limited trial was carried out among students of the German Language Education Program at Universitas Negeri Medan. The results showed that the comic supported students’ reading comprehension, increased motivation, and reduced reliance on online translators. This study concludes that integrating official textbook content into digital comic formats published through popular platforms such as *Webtoon* represents an effective and relevant innovation for digital-native learners.

**Keywords:** A2 reading; ADDIE; Digital Comic; German language learning; *Webtoon*.

## 1. Introduction

Language is a fundamental human tool for communication and mutual understanding. With the advancement of globalization, cross-border interactions have increasingly emphasized the importance of mastering foreign languages, particularly in the field of education [5]. One such language is German, which is taught in secondary schools and universities across Indonesia, including at Universitas Negeri Medan. In the German Language Education program, language proficiency is aimed at expanding students’ academic horizons within the global education context.

To achieve communicative competence, students must master the four core language skills: listening, speaking, reading, and writing. Among these, reading (*Lesen*) is a crucial skill, as it not only develops textual understanding but also enhances analytical thinking and contextual interpretation. At the A2 level, learners often encounter difficulties due to new vocabulary and more complex sentence structures that go beyond those introduced at previous levels.

To examine these challenges, a questionnaire was distributed to 20 students from Class B, cohort 2023, at the German Language Education program of Universitas Negeri Medan, all of whom had completed the A2 reading course. The results showed that 70% of students had difficulties comprehending texts due to unfamiliar vocabulary and grammar. Furthermore, 80% stated that the learning media used in class were monotonous, and 85% expressed the need for more engaging and contextualized instructional tools.

These findings are supported by Sukirman, Hasmawati, and Al-ilmul [4], who identified internal factors (such as difficulty memorizing vocabulary and understanding complex sentences) and external factors (lack of variety in instructional media) as significant barriers in A2-level reading. Consequently, students often rely on online translators like Google Translate, which reduces the effectiveness of reading comprehension.

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In response, the authors emphasize the need for innovative and engaging instructional media that are accessible and suited to modern learners. One promising alternative is the use of digital comics. Digital comics effectively convey ideas by combining images, text, and visual narratives that support comprehension and increase learner engagement [1].

This study presents the development of a digital comic titled “*Was machst du?*”, based on the *Netzwerk neu A2* textbook. The topic reflects daily-life conversations relevant to student experiences. The comic was created using *Ibis Paint X* and published on the *Webtoon* platform in vertical scroll format. This media allows students to access reading materials in an engaging and contextualized way without relying on online translation tools.

Given the lack of German-language instructional comics on *Webtoon* that align with A2-level content, this study aims to fill the gap and contribute to the advancement of adaptive, practical, and innovative foreign language learning media.

## 2. Literature Review

To strengthen the conceptual foundation and scholarly framework of this study, the literature review outlines several key theories and findings from previous research relevant to the development of digital comic-based instructional media in foreign language education, especially in German. The review addresses the research object, applied methods, and outcomes of prior studies whether supportive or contrasting to the present approach.

The purpose of this section is to identify the research gap in existing literature, thereby highlighting the original contribution of the study conducted by Zefonya Zuwi Sihombing and Hafniati. Through the examination of both theoretical and practical developments in digital media for education, the authors demonstrate that the innovation of a digital comic titled “*Was machst du?*”, published via the *Webtoon* platform, has not yet been systematically developed to support A2-level reading skills in German language learning among university students.

### 2.1. Digital Comics as Learning Media

The use of digital comics as learning media has grown rapidly alongside technological advancement. Digital comics enable the delivery of information through a compelling combination of text and images that is both flexible and accessible [3]. A study by Tondy Raja The digital comic Mastri to improve adolescents' time management via *Webtoon*, proving its educational effectiveness with a score of 88.9% [9].

### 2.2 Comic-Based Language Learning

Several studies have demonstrated the effectiveness of comics in language learning. Developed a digital comic titled “*Echt Spaß mit dem Thema Schule*” for 10th-grade students learning German [8]. Their findings indicated an 80% effectiveness score as a learning medium. However, that study focused on high school students and did not target university-level learners, nor did it specifically utilize *Webtoon* as a publication platform.

### 2.3 Comics and A2 Reading Competence

Developed digital comics based on folk tales to improve reading skills [6], [4]. However, their approaches did not utilize specific curricular themes from A2-level textbooks such as *Netzwerk neu*, nor did they integrate interactive platforms like *Webtoon*. This study fills that gap by developing a digital comic themed “*Was machst du?*”, directly derived from A2-level textbook content and presented in an interactive scrolling digital format, ensuring highly relevant and authentic language use.

### 2.4 ADDIE Theory in Media Development

The ADDIE model (Analysis, Design, Development, Implementation, Evaluation) is a widely adopted framework in instructional media development. ADDIE's advantages in guiding a systematic process. This study adopts the ADDIE model to ensure that the developed media meets valid, effective, and applicable instructional design criteria [7].

### 3. Research Methode

To conduct this study, a descriptive-qualitative approach was applied using the ADDIE development model, which includes five major stages: Analysis, Design, Development, Implementation, and Evaluation. This model was chosen for its systematic and practical framework for developing technology-based instructional media, particularly digital comics.

1. **Analysis**  
This stage involved identifying students' difficulties in understanding A2-level German reading texts. Data were collected through a questionnaire distributed to 20 students. The analysis revealed a need for contextual, engaging, and digital-based learning media.
2. **Design**  
his step involved designing the learning content (from *Netzwerk neu A2*, "*Was machst du?*"), characters, comic storyline, and structure of each episode (title, dialogue, summary, glossary, exercises, and solutions). The vertical format was adapted to suit *Webtoon*'s style.
3. **Development**  
The comic was developed using *Ibis Paint X* and uploaded to *Webtoon*. Validation was carried out by content and media experts, receiving respective scores of 91 and 92.
4. **Implementation**  
The digital comic was implemented in the reading instruction of 2024 cohort students. They were asked to read and complete exercises from the comic as part of their course-work.
5. **Evaluation**  
Evaluation was conducted via questionnaires to assess student perceptions and how effectively the comic supported their reading comprehension.

#### 3.1. Algorithm/Pseudocode

To represent the systematic process of instructional media development, the researchers adopted an algorithmic approach based on the ADDIE model. The following algorithm outlines the key steps undertaken in the design, development, and evaluation of a *Webtoon*-based digital comic titled "*Was machst du?*". Presenting the method in algorithm form facilitates a clearer understanding of the procedural stages involved in this research.

**Table 1.** Development of a *Webtoon*-Based Digital Comic

<b>Algorithm 1.</b> Development of a <i>Webtoon</i> -Based Digital Comic
INPUT: Learning needs, Teaching material from <i>Netzwerk neu A2</i> , Theme " <i>Was machst du?</i> ", Validation data
OUTPUT: Validated <i>Webtoon</i> -based digital comic ready for A2-level language learning
1: Collect learning needs data through a questionnaire distributed to students
2: Analyze the questionnaire results to identify difficulties in reading comprehension
3: Design the comic structure (title, dialogue, summary, glossary, exercises, and solutions)
4: Create character designs, storyline, and dialogues based on <i>Netzwerk neu A2</i>
5: Illustrate the comic using <i>Ibis Paint X</i>
6: Validate the content and media with subject matter and media experts
7: Publish the digital comic on the <i>Webtoon</i> platform
8: Implement the comic in A2-level reading classes to assess media effectiveness
9: Gather evaluation data from student users
10: Analyze the evaluation results to measure the impact on reading comprehension improvement

### 4. Results and Discussion

This section presents the outcomes of each phase in the development of the *Webtoon*-based digital comic, including the tools and resources used, expert validation, as well as implementation and user feedback. The results are not only described, but also analyzed in direct relation to the research objectives and initial hypothesis. Visualizations in the form of charts and tables are provided to clarify key findings and to support the discussion in an objective and systematic manner.

#### 4.1 Hardware and Software

This study employed hardware including a laptop with Intel Core i5 processor, 8GB RAM, and a stable internet connection. The software used included:

1. *Ibis Paint X* for digital comic illustration,
2. *Webtoon Canvas* for media distribution,
3. *Google Form* for distributing validation and testing questionnaires.

#### 4.2 Dataset and Validation

Dataset sources included:

1. Needs assessment questionnaire completed by 20 students,
2. Media validation by two experts (one in content, one in media),
3. User testing conducted among students from class A (2024 cohort).

Validation results showed excellent scores:

1. Content validation: 91%
2. Media validation: 92%

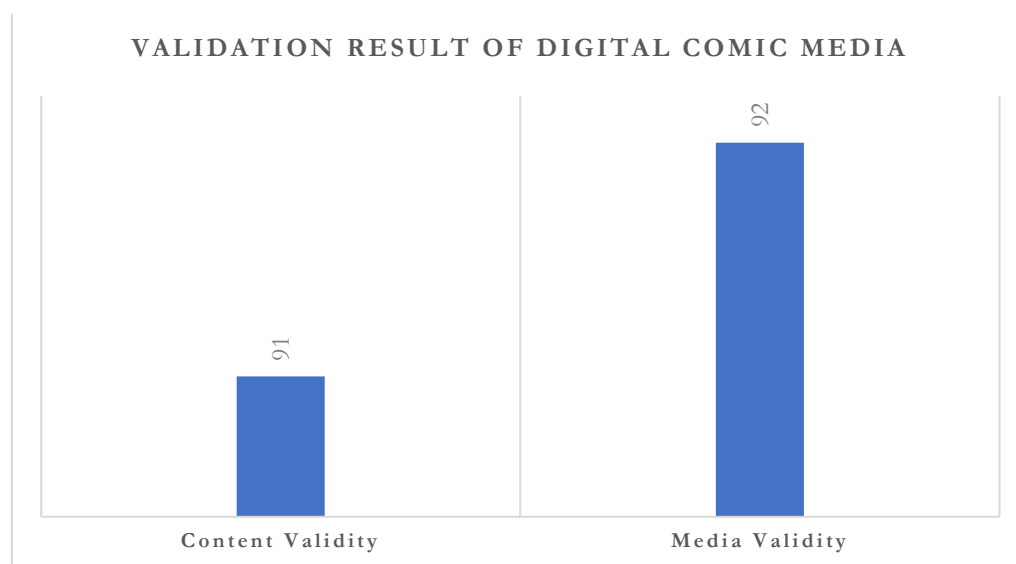


Figure 1. Validation Result of Digital Comic Media

#### 4.3 Discussion of Results

The validation results indicate that the developed digital comic meets the criteria as a viable instructional medium. The high content validity score (91%) confirms that the comic aligns with the expected A2-level competencies, including sentence structure, vocabulary, and contextual relevance. The media expert's evaluation (92%) highlights the visual appeal, layout, and storyline as supporting students' comprehension effectively.

User feedback revealed that the media:

1. Helped students understand reading content without relying on translators,
2. Provided exercises integrated within the storyline,
3. Made learning more engaging and enjoyable.

These findings support the initial hypothesis that a digital comic with a visual-conversational approach can enhance A2-level German reading comprehension, consistent, but offering added value in interactivity and thematic relevance [8], [9].

#### 5. Comparison with State-of-the-Art

When compared to previous studies that also developed digital comic-based learning media, this research demonstrates a more contextual and applicable approach. For instance, [8] created a digital comic on the topic of "Schule" but did not utilize interactive distribution platforms like *Webtoon* [8]. *Webtoon* to convey moral messages through non-instructional stories, rather than as a foreign language learning tool [9].

Furthermore, most previous studies focused on secondary or primary school students, while this research targets university students in the German language education program, using content directly sourced from the *Netzwerk neu A2* textbook. This makes the developed media more aligned with the needs and competencies of adult learners.

In terms of evaluation, the media and content validation scores in this study (91% and 92%) show performance comparable to or exceeding that of similar studies, which typically range between 80–88%. Therefore, this study not only reinforces previous findings but also contributes new insights in terms of visual integration, curriculum-based thematic content, and the use of a popular digital platform.

## 6. Conclusion

This study has produced a *Webtoon*-based digital comic titled “*Was machst du?*”, developed using the ADDIE model. Expert validation results indicated that the media is feasible as a reading aid for A2-level German learners, with a content validity score of 91% and media validity score of 92%. User testing revealed that the comic helped students understand conversational contexts and increased their learning motivation.

These findings support the initial hypothesis that visual and contextual media can enhance students' reading comprehension in foreign language learning. The study also shows that integrating instructional media with popular digital platforms like *Webtoon* can make learning more engaging and relevant, particularly for the digital-native generation.

The main contribution of this study is the provision of a development model for learning media that integrates official teaching materials (*Netzwerk neu A2*) and adopts a digital-native visual approach. Additionally, this study expands the scope of visual comic media development within higher education, a relatively underexplored area in the literature.

The limitations of this study lie in the restricted test group, which consisted of only one class, and in the descriptive-qualitative nature of the learning outcome evaluation. Further research is recommended to test the effectiveness of this comic on a broader scale and using quantitative or controlled experimental approaches.

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**Conflict of Interest:** The authors declare no conflicts of interest

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