

# WEB 2.0 tools in English Project Based Learning at Elementary and High Schools in Kabupaten Pinrang

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## Abstract

This research investigates the Web 2.0 tools utilized by teachers and students in English project-based learning (PBL) across elementary and high schools in Kabupaten Pinrang. The study aims to identify the types of digital tools utilized by teachers and students. A descriptive survey design was employed, involving 31 English teachers and 70 students from junior and senior high schools. Data were collected through online questionnaires and analyzed using descriptive statistics. The findings reveal that Canva (93.5%), YouTube (87.1%), and WhatsApp (77.4%) are the most commonly used tools by teachers, while students favor YouTube (60%), WhatsApp (51.4%), and Google Classroom (41.4%). Teachers primarily utilize Web 2.0 tools for content creation, communication, and assessment, while students use them for content exploration and project execution. Challenges identified include the limited adoption of collaborative platforms and synchronous communication tools due to digital literacy gaps and connectivity issues.

**Keywords:** *Web 2.0 Tools, Project-Based Learning, English Teaching and Learning*

## Introduction

Using information technology tools in foreign language education is making a new trend worldwide. (Liu, 2009) This spread also changed the role of language teacher. Teachers are expected to possess the ability to design interactive classes often by using digital tools. Today it is a general requirement for teachers to be able to use technology and to possess the know-how of implementing it in a way that fosters language learning. (Nagy, 2021) The same way goes to students; they are constantly exposed to technology. Internet and social media have significantly impacted children. The accessibility of smartphones, tablets, and gaming consoles, along with free Wi-Fi, has made technology a central aspect of modern life. (Carstens et.al, 2021)

Web 2.0 tools, the second generation of The World Wide Web, have gained popularity across several educational sectors as the result of the development of technology and internet. (Degimenci, 2021) These tools offer a wide array of opportunities for English language learners to engage in authentic, collaborative, and interactive activities that can enhance their language proficiency, digital literacy, and cross-cultural understanding. (Guillen et. al, 2020)

Recent studies have demonstrated the significant impact of Web 2.0 tools in English language learning environments. Research by (Michael, 2023) found that Web 2.0 is

seen as beneficial for language teaching, but teachers need more support and training to integrate it effectively into their teaching practices. Most teachers are open to using Web 2.0 but need time to implement it. Younger teachers are more familiar with social media and video platforms, while older teachers face challenges. Similarly, (Priyatmojo et al., 2022) revealed Web 2.0 technologies like wikis and blogs have a positive and moderate effect on academic performance. On other hand (Shahrokni et al., 2015) found Most teachers showed low familiarity and use of Web 2.0 tools despite recognizing their effectiveness. Teachers generally have positive attitudes towards the use of these technologies in language education. External factors like lack of training and inadequate equipment, poor internet connectivity, and reluctance from school managers to invest in new technologies were significance barriers faced by teachers.

Project Based Learning (PBL) has emerged as a pedagogical approach that aligns well with the affordances of Web 2.0 tools. Learning in the digital era now does not only emphasize individual abilities and skills but rather on how students are able to work together with other students in the form of group work based on the spirit of global education (global education) to solve common problems that are around them. (Priyatmojo, 2022) Web 2.0 tools amplify the benefit of PBL by providing students with a dynamic environment to communicate, co-create content, and present their work.

Furthermore, studies focusing specifically on project-based learning (PBL) with Web 2.0 integration have shown promising results. Integrating project-based learning with educational technology and Web 2.0 tools was an effective means of enhancing young learners' writing skills (Manidaki et al., 2021). Collaborative projects, supported by web 2.0 tools, can deliver worthwhile learning. Students reported that the project; was interesting and rewarding, improved their relationships with classmates, encouraged teamwork, improved English skills, facilitated positive attitudes and the development of ICT skills. Students experienced improved technical, collaborative, leadership, critical thinking and problem solving skills that enhanced knowledge and contributed to their personal 21st century skill set. (Beamish, 2014)

However, these studies have several limitations. Most research has been conducted in urban areas with adequate technological infrastructure. While rural and semi-urban regions like Kabupaten Pinrang remain understudied. Additionally, existing research primarily focuses on higher education level, with limited attention to elementary schools. While existing research has established the effectiveness of Web 2.0 tools in English language learning, there remains a significant gap in understanding both teachers' and students' familiarity of Web 2.0 tools in the specific context of Kabupaten Pinrang's. This research addresses the unique challenges and opportunities in a semi-urban Indonesian Elementary and high schools context.

Based on the identified research gaps, this study aims to identify Web 2.0 tools in English Project Based Learning at elementary and high schools in Kabupaten Pinrang. While previous studies have documented the integration of technology in Indonesian education broadly, little attention has been paid to understanding Web 2.0 tools utilized by teachers and students in semi-urban areas like Kabupaten Pinrang their English Project-Based Learning activities. This research focus on documenting the existing Web 2.0 tools that were used by teachers and students within a PBL framework across different educational levels in Kabupaten Pinrang.

## Method

The research was conducted in Kabupaten Pinrang, South Sulawesi, Indonesia. Schools in this area has growing interest in integrating digital tools and technology in education especially in Project-Based Learning framework. This research used purposive sampling as it was required participants with specific characteristic – teachers and students engaged in English Project Based Learning using Web 2.0 tools. There were 31 Teachers (Elementary, Junior and Senior High Schools) and 70 students (Junior and High Schools) who agreed to participate in the study. Elementary students were not included as participants due to the developmental stage of the learners.

This research employed descriptive survey research design. Through survey researcher obtained a large amount of data on Web 2.0 tools utilized by teachers and students in English Project-Based Learning. Questionnaire are distributed to teachers and students with Online Survey Tools: Google Forms. It included two sections with questions about respondents' demographic background, and comprehensive list of Web 2.0 tools that they have utilized in English PBL Classroom. Descriptive statistic then was used to analyze and interpret the collected data. The researcher analyzed questionnaire by finding out the percentage of response of the respondents.

## Results

There were 31 English teachers participated in this study. The majority of respondents were under 30 years old (67.7%), followed by those aged 31–40 years (25.8%), and only a small proportion were aged 41–50 years (6.5%). In terms of gender distribution, the respondents were predominantly female (83.9%), with male teachers accounting for only 16.1%. Regarding teaching experience, most respondents had less than 6 years of teaching experience (67.7%), while 19.4% had between 6 and 10 years, and 6.5% had 11–15 years and 16–20 years of teaching experience, respectively. Additionally, a significant majority of the respondents held a bachelor's degree (87.1%), with 12.9% holding a master's degree. When categorized by the level of teaching, 16 respondents (51.6%) were elementary school teachers, 8 respondents (25.8%) were junior high school teachers, and 7 respondents (22.6%) were senior high school teachers.

Table 1. Demographic information of Teachers

| Demographic Details        | Responses |      |
|----------------------------|-----------|------|
|                            | F         | %    |
| <b>Age</b>                 |           |      |
| <30 years                  | 21        | 67.7 |
| 31-40 years                | 8         | 25.8 |
| 41-50 years                | 2         | 6.5  |
| <b>Gender</b>              |           |      |
| Male                       | 5         | 16.1 |
| Female                     | 26        | 83.9 |
| <b>Years of Experience</b> |           |      |
| <6 years                   | 21        | 67.7 |
| 6-10 years                 | 6         | 19.4 |
| 11-15 years                | 2         | 6.5  |
| 16-20 years                | 2         | 6.5  |
| <b>Education Level</b>     |           |      |
| Bachelor's Degree (S1)     | 27        | 87.1 |
| Master's Degree (S2)       | 4         | 12.9 |

|                          |           |            |
|--------------------------|-----------|------------|
| <b>Level of Teaching</b> |           |            |
| Elementary Schools       | 16        | 51.6       |
| Junior High Schools      | 8         | 25.8       |
| Senior High Schools      | 7         | 22.6       |
| <b>Total</b>             | <b>31</b> | <b>100</b> |

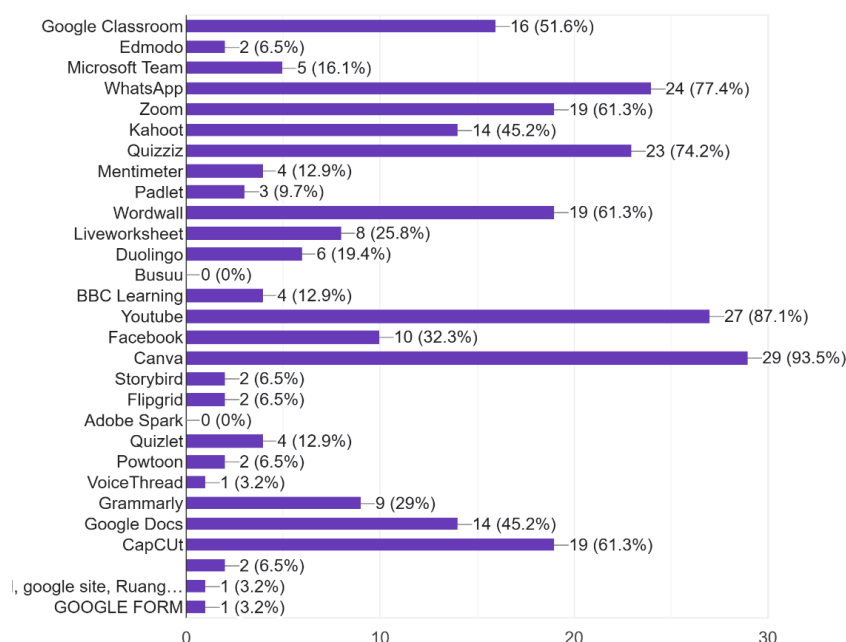
For students, the total was 70. The majority of the student respondents are female, comprising 80% (56 individuals) of the total sample, while male students represent 20% (14 individuals). Regarding the educational level, 74.3% (52 students) are from Senior High Schools, and the remaining 25.7% (18 students) are from Junior High Schools.

Table 2. Demographic information of Students

| Demographic Details    | Responses |            |
|------------------------|-----------|------------|
|                        | F         | %          |
| <b>Gender</b>          |           |            |
| Female                 | 56        | 80         |
| Male                   | 14        | 20         |
| <b>Education Level</b> |           |            |
| Senior High Schools    | 52        | 74.3       |
| Junior High Schools    | 18        | 25.7       |
| <b>Total</b>           | <b>70</b> | <b>100</b> |

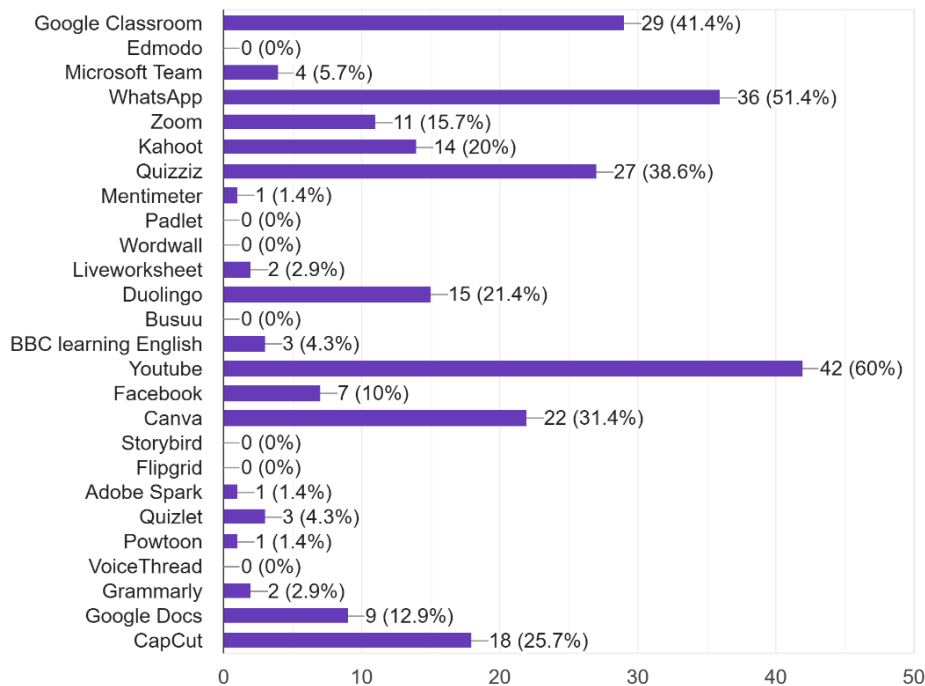
The graph 1 illustrates the usage of various Web 2.0 tools by teachers to support project-based learning activities. Among the tools, Canva emerges as the most utilized platform, with 93.5% of teachers adopting it, followed by YouTube at 87.1%. WhatsApp and Quizziz also enjoy high usage rates of 77.4% and 74.2%, respectively, showcasing their popularity for communication and interactive learning. Tools like Zoom, Wordwall, and Google Docs are moderately utilized, with around 45-61% of teachers incorporating them into their teaching practices. Platforms such as Mentimeter, Liveworksheet, and Quizlet have relatively lower usage rates, ranging from 12.9% to 29%. While others like VoiceThread, Storybird, and Flipgrid are minimally adopted (3.2%-6.5%).

Graph 1 Web 2.0 tools used by teachers



The graph 2 illustrates various Web 2.0 tools used by students to support their project-based learning activities. Among the tools, Youtube emerges as the most utilized, with 60% of students incorporating it into their learning processes. WhatsApp follows with 51.4% usage. Google Classroom was used by 41.4% of students. Quizizz (38.6%) and Canva (31.4%) are also prominently used. Other notable tools include CapCut, utilized by 25.7% of students, and Duolingo used by 21.4%. Kahoot, Zoom, and Google Docs are employed by 20%, 15.7%, and 12.9% of students. Less commonly used tools like BBC Learning English (4.3%), Grammarly (2.9%), and Liveworksheet (2.9%).

Graph 2. Web 2.0 tools used by students



## Discussion

The data reveals notable differences in the usage patterns of Web 2.0 tools by teachers and students for supporting project-based learning (PBL) activities. These differences highlight the distinct roles and priorities between educators and learners in the PBL process, as well as the varying levels of familiarity and purpose behind tool usage.

Teachers predominantly use platforms like Canva (93.5%) and YouTube (87.1%) due to their versatility in designing instructional content and providing multimedia resources. Canva allows educators to create visually engaging materials, project guidelines, infographics, and presentations that support creative project tasks. YouTube serves as a key resource for supplementary video materials, tutorials, and explanations that align well with PBL's emphasis on real-world learning and independent exploration. Communication tools like WhatsApp (77.4%) facilitate timely communication between teachers and students, enabling file sharing, quick feedback, and more collaborative discussions. It can also imply teachers favor WhatsApp due to its simplicity and widespread accessibility. Its asynchronous nature allows for flexible communication with students, which can be crucial in rural settings with connectivity challenges. Similarly, Quizizz (74.2%) and Wordwall (54.8%) support formative assessment and gamified learning, which aligns with PBL's need for frequent knowledge checks. Moderate adoption of tools like Zoom (61.3%), and Google Docs (45.2%) suggests that

while synchronous discussions and collaborative document creation are valued, they are not the primary methods employed by teachers in PBL settings.

Students show a preference for tools that support self-directed learning and content exploration. YouTube (60%) and WhatsApp (51.4%) dominate their usage patterns, reflecting their reliance on video resources and real-time communication for project work. Students also utilize WhatsApp (51.4%) heavily, though the lower percentage indicates that their communication needs may be met through other collaborative platforms or face-to-face interactions. Google Classroom (41.4%) is heavily used for task management and assignment submission, highlighting its role as an organizational tool. Interactive platforms like Quizizz (38.6%) and design-centric tools such as Canva (31.4%) also see significant use, though at lower rates than among teachers. Students' adoption of tools such as CapCut (25.7%) and Duolingo (21.4%) underscores their focus on content creation and language skill development, which are often integral to project deliverables. However, the lower usage rates for tools like BBC Learning English (4.3%), Grammarly (2.9%), and Liveworksheet (2.9%) suggest that students may prioritize tools they find more engaging or directly relevant to completing creative tasks.

The divergence in tool usage between teachers and students can be attributed to their distinct roles in the PBL framework. Educators primarily seek tools that help organize, present, and communicate project requirements effectively while ensuring ongoing assessment and support. Meanwhile, learners prefer tools that enable content creation, facilitate collaboration, and support their understanding of project topics. In other word, Teachers focus on Facilitating and Students' on Executing. Additionally, these patterns reflect the digital literacy levels and preferences of each group. Teachers may gravitate toward structured and proven educational tools, while students lean towards flexible, intuitive platforms that align with their technological habits outside the classroom.

Differences in digital literacy may contribute to the varying adoption rates. Teachers' more frequent use of Canva, YouTube, and other content creation tools suggests that they have developed digital skills aligned with instructional design. Conversely, students may still be in the process of building digital fluency, leading to lower adoption of certain advanced tools like Google Docs (12.9%) and Zoom (15.7%). Local factors, such as internet connectivity issues and limited device availability, likely influence tool usage. The preference for lightweight, mobile-accessible tools like WhatsApp over bandwidth-intensive platforms like Zoom reflects these practical constraints. Additionally, the cultural emphasis on face-to-face communication may reduce the perceived necessity for extensive online collaboration tools.

## **Conclusion**

This study explored the usage of Web 2.0 tools by teachers and students to support project-based learning (PBL) in elementary and high schools in Kabupaten Pinrang. The findings highlight distinct preferences in tool adoption, reflecting differences in roles, technological literacy, and learning objectives. Teachers predominantly use tools like Canva, YouTube, and WhatsApp for content creation, instructional delivery, and communication, while students favor YouTube, Quizizz, and CapCut for learning engagement and project execution. These insights underscore the critical role of digital tools in enhancing collaboration, creativity, and communication in PBL environments. However, there are still challenges remain. particularly in the limited adoption of collaborative platforms such as Google Docs and synchronous communication tools like Zoom. This suggests a need to address barriers such as digital literacy, infrastructure limitations, and alignment of tool usage with PBL principles. Schools should provide

targeted training for teachers and students to improve their proficiency and expand their digital literacy. Addressing digital technology Infrastructure and internet connectivity issues is also essential to support broader adoption of Web 2.0 tools in English PBL Classroom.

The research contributes to the growing body of knowledge by providing localized insights into how digital tools are adopted in rural educational contexts for PBL, adding depth to the understanding of technology integration in diverse learning environments. However, several limitations should be acknowledged. The study is limited to a single region (Kabupaten Pinrang), which may affect the generalizability of findings to other areas with different educational environments or technological infrastructure. The data also relies on teacher and student self-reports, which may be influenced by subjective perceptions and recall bias. Future research should examine the adoption of Web 2.0 tools across different regions to identify broader trends and challenges. The study does not comprehensively explore how each tool is specifically used during various phases of PBL, limiting insights into their functional effectiveness. Variability in Respondent Demographic and digital literacy was not deeply analyzed, which could impact findings on tool preferences and effectiveness. Investigating the direct impact of specific tools on learning outcomes and project success in PBL environment, and exploring how demographic variability influence tool preferences could offer more valuable and actionable insight.

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