

## KAJIAN PENGGUNAAN APLIKASI INSTAGRAM SEBAGAI MEDIA PEMBELAJARAN

Sherly Herawati Amanda<sup>1</sup>, Anggi Tias Pratama<sup>2</sup>, dan Kartika Ratna Pertiwi<sup>3</sup>

[sherlyherawati.2022@student.uny.ac.id](mailto:sherlyherawati.2022@student.uny.ac.id)<sup>1</sup>, [anggitias@uny.ac.id](mailto:anggitias@uny.ac.id)<sup>2</sup>, [kartika.pertiwi@uny.ac.id](mailto:kartika.pertiwi@uny.ac.id)<sup>3</sup>

Universitas Negeri Yogyakarta, Indonesia<sup>1,2,3</sup>

**Abstrak:** Perkembangan teknologi media sosial saat ini seperti instagram seiring berjalannya waktu dapat membantu proses pembelajaran di luar maupun di dalam kelas. Tujuan dari kajian literatur ini adalah untuk mengkaji penggunaan aplikasi instagram pada pembelajaran di sekolah, ditinjau dari metode penelitian yang digunakan dan komponen fitur instagram yang dapat menarik untuk membantu siswa belajar. Metode yang digunakan yaitu kajian literatur sistematis (Systematic Literature Review/ SLR) naratif mengikuti model adaptasi Preferred Reporting Items for Systematic reviews and Meta-Analyses (PRISMA) yang meliputi tahap identifikasi, penyaringan dan penentuan literatur yang dikaji. Literatur yang dimasukkan dianalisis dengan melibatkan tahap-tahap mencari kesamaan, perbedaan dan memberikan pandangan atas kajian literatur. Terdapat 20 artikel yang dikaji. Hasil kajian ini menunjukkan bahwa setiap literatur memiliki metode penelitian yang berbeda-beda sesuai dengan atas dasar permasalahan yang ditemui, dengan metode pengembangan ADDIE sebagai metode yang paling banyak digunakan. Komponen media instagram yang diminati siswa dalam belajar yaitu filter instagram, feed, instastory dan sorotan cerita. Kesimpulan dari penelitian ini adalah berbagai metode penelitian dapat diadopsi untuk mengkaji penggunaan instagram dengan berbagai fitur yang menarik sebagai media pembelajaran. Semua guru dapat melibatkan instagram sebagai media kolaborasi pembelajaran dalam mencapai tujuan belajar. **Kata-kata Kunci:** instagram, teknologi pembelajaran, media pembelajaran, IPA, Biologi.

### THE USE OF INSTAGRAM AS LEARNING MEDIA

**Abstract:** The current development of social media technology such as Instagram over time can help the learning process outside and inside the classroom. The purpose of this literature review is to examine the use of the Instagram application in learning at school, in terms of the research methods used and the components of Instagram features that can be interesting to help students learn. The method used is a narrative systematic literature review (SLR) following the Preferred Reporting Items for Systematic reviews and Meta-Analyses (PRISMA) adaptation model which includes the stages of identification, filtering and determining the literature being studied. The included literature is analyzed by involving the stages of looking for similarities, differences and providing views on the literature review. There were 20 articles reviewed. The results of this study show that each literature has different research methods based on the problems encountered, with the ADDIE development method being the most widely used method. The Instagram media components that students are interested in learning are Instagram filters, feeds, Instagram stories and story highlights. The conclusion of this research is that various research methods can be adopted to study the use of Instagram with various interesting features as a learning medium. All teachers can involve Instagram as a learning collaboration medium in achieving learning goals.

## INTRODUCTION

Learning is a teaching and learning activity inside and outside the classroom that contains interactions between teachers and students and students with other students. Students have a major role in learning to achieve learning objectives and teachers as facilitators (Jayawardana 2017). Based on this phenomenon, in the 2013 curriculum there was a simplification of the curriculum. This is so that schools and teachers can develop learning strategies to achieve learning objectives (Argiyanti, Rochintaniawati, and Anggraeni 2022). The achievement of learning objectives can be seen from student learning outcomes based on student learning interests. Student learning interests can be influenced by creativity factors and internet use skills in the current era of developing technology and information (Jaya, Sumantoro, and Amnah 2023) from teachers to design fun learning.

The phenomenon of the COVID-19 pandemic that occurred in 2020 had an impact on education in Indonesia, so that the learning system at that time contributed to a new change to distance learning or called online. This is fortunately supported by the rapid development of technology and information. Thus, online learning can be supported by the development of learning media that we can take anywhere and packaged in the form of a social media application on a smartphone (Kamaruddin 2022). Smartphones can support our daily needs and desires as a means of communication in the near and far distances including as social media. Our desire to seek the interests of insight and knowledge widely can be by utilizing social media on the basis of our needs. However, social media is believed to be a site and application that utilizes internet-based technology. So if our smartphone does not have an active internet connection then we cannot skate on social media. Social media can connect us with the reach of many people. Examples of social media networks include whatsapp, instagram, facebook and others (Obar, J.A., Wildman 2015).

The use of social media such as Instagram is one of the well-known media used for a learning process. Instagram is believed to be used to share photos, videos, use hashtags, add location, use filters, respond to comments, and explore other Instagram users (Al-ali 2014). The use of hashtags relevant to posts can affect good content management in social publications. Instagram can be used as a learning resource in which there is an interesting, unique and widely explored learning process (Kirst 2016). Instagram can also be used as a tool to convey a meaning from related learning.

Instagram media users (Astari, Ruyadi, and Wilodati 2022) are mostly high school age. This age is quite an age and many use this Instagram social media application. The narrative (Andrea, Gabriella, and Tímea 2016) is not easy in dividing the age group of each generation specifically for generations. Judging from its characteristics, the generation is divided into six generations, namely the veteran generation (1925-1946), the baby boom generation (1946-1960), generation X (1960-1980), generation Y (1980-1995), generation Z (1995-2010), and generation alpha (2010-present). Someone born in generation X according to Jurkiewicz (Jurkiewicz 2000) is a generation that has been born in the development of technology and information. The alpha generation born is very familiar with digital technology (McCrindle 2014). Supported by (Laukkanen 2018) states that the Alpha generation is a generation that is difficult to break away from smartphones. This is in line with the development of Instagram media to overcome problems in learning.

Quality learning should be student-centered so that the learning atmosphere created is not passive and does not cause boredom owned by students (Jayawardana 2017). Based on some observations at school, students still have the assumption that biology lessons are material that is learned is difficult. In fact, basically learning biology is fun because we can study living things from the gene level to the ecosystem (Lemos, 2021). Biology has the characteristic of requiring methods, media, learning approaches to support concepts, phenomena or knowledge learned. This is because some parts of the material contain Latin, students tend to memorize and take notes and there are some biological objects that cannot be observed directly. So that it makes students feel afraid if they cannot understand the material presented. Of course, these factors have a low impact on student interest and learning (Imah Solikhatun", Slamet Santosa 2015).

Previous research revealed that learning using Instagram media has a positive impact (Sesriyani and Sukmawati 2019) and the use of the instastory feature can improve student learning outcomes (Fernandasyah et al. 2019). In addition, it is also supported by other research, namely Instagram media can increase student learning interest in a learning process (Fidian 2017). Similar to Nusantara (Nusantara 2017), learning to use Instagram social media can improve students to be able to express and create slowly and can bring up creative thinking ideas in the form of images or videos. Based on the background above, the author wants to examine studies on the use of the Instagram application as

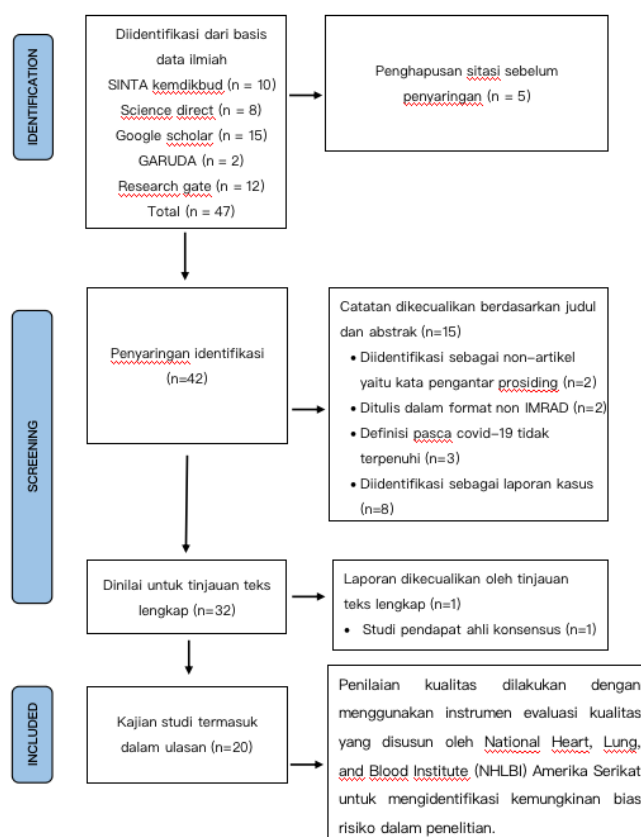
a learning medium in terms of the research methods used and then examine the components in Instagram that can be used as interesting things for students to learn.

## RESEARCH METHODOLOGY

The research used in this study is the research and development (R&D) method (Sugiyono, 2020). This research is devoted to research that aims to produce an educational product that can be accounted for. In this study using the ASSURE development model. which consists of Analyze learners, State Objectives, Select Strategies, methods, materials, Utilize Technology and Media, Require Learner Participation, Evaluate and Revise (Darllis et al., 2020).

This study is designed as a narrative systematic review following a model adapted from Preferred Reporting Items for Systematic review and Meta-Analyses (PRISMA), which consists of the stages of identification, screening and selection of literature (as shown in Figure 1). To facilitate the formulation of keyword terms and facilitate literature search, PICO is determined as follows, namely P (population) is students, junior high, high school; I (intervention) is instagram development, online learning, Biology learning; C (comparison) is a control group and experiments with other learning media; O (result) is a model or development method applied with the use of Instagram and the purpose of developing Instagram as a learning medium. Based on this PICO, keywords are formulated as a combination of: 1) "Instagram media OR Biology learning OR online learning" AND "Junior high school students OR high school students OR experimental group OR control group"; and 2) "development model OR development method" AND "ADDIE". The selected articles are then reviewed and analyzed in a qualitative descriptive manner.

**Figure 1.** Flowchart of this literature review procedure



## RESULTS AND DISCUSSION

### Result

Article searches are carried out in five academic databases, namely SINTA Ministry of Education and Culture, Science direct, Google scholar, GARUDA and Research gate using a combination of keywords, citation traces and snow balling methods to find articles published within the last 10 years (2013-2023). At the identification stage, a total of 47 articles were found plus 5 articles based on citation notes. At the screening stage, the removal of duplicate articles and assessment using titles and abstracts is carried out. In the end, 20 articles were entered as study material.

The results of the analysis of this literature review begin with data reduction from reading scientific journal articles which are divided into journal codes, titles, authors, methods and results obtained. Below is the result of reducing previous research data to be used as a reference for discussion related to the topic of Instagram media phenomena in learning.

**Table 1.**  
Literature Study Data Reduction

Code	Title	Method	Result
J1	Pengembangan Microblog Berbantuan <i>Instagram</i> pada Materi Sel Kelas XI IPA di MAN 3 Jember (Veygid, Ahmad., Setyawati 2022)	ADDIE development model.	Use the feed upload tool. Shows the validation results of 95% material experts, 92% media experts, 96% linguistic experts, each obtained excellent, good and legitimate criteria. Showing student response 89% obtained very interesting criteria.
J2	Pengembangan Planteogram (Plantae On <i>Instagram</i> ) Angiospermae Sebagai Sumber Belajar (Salsabila, Wisanti, and Bashri 2021)	Fenrich instructional development model.	Use photo posts and story highlights. Theoretical qualifications are worth 3,67 (highly valid), empirical qualifications worth 98% (highly qualified).
J3	Penggunaan <i>Instagram</i> dalam Pembelajaran: Apa Pengaruhnya Terhadap Kreativitas Siswa? (Astari, Ruyadi, and Wilodati 2022)	Explanatory sequential mixed method.	High school students in the city of Bandung are included in the category of being in the ability to think creatively.
J4	Memfaatkan teknologi media sosial <i>instagram</i> pada kegiatan pembelajaran dengan menggunakan metode poster <i>in instagram</i> (postingan terbaik) (Hidayat, Nugraha, and Firmansyah 2021)	Qualitative approach descriptive method.	Using photos / videos in <i>feeds</i> . Students are invited to post positive and wise things as a result of their work.
J5	Aplikasi <i>Tiktok</i> dan <i>Instagram</i> Sebagai Salah Satu Alternatif Dalam Media Pembelajaran IPA (Hidayat, Nugraha, and Firmansyah 2021)	Literature study.	<i>TikTok</i> and <i>Instagram applications</i> are effective in learning in terms of meeting student needs, attracting interest in learning, and equivalent to the millennial generation.
J6	Pengaruh Penerapan Metode Pembelajaran E-Learning Berbantuan Media Sosial <i>Instagram</i> Terhadap Hasil Belajar (Alifani and Sumpono 2023)	Experiment with pre-test and post-test control group designs.	Learning outcomes 70.40% (high). Student response to <i>Instagram</i> usage 89% (very good).
J7	Ketertarikan Peserta Didik SMA Terhadap Penggunaan Platform <i>Instagram</i> Sebagai Platform Penyampaian Materi Pembelajaran Biologi Pasca Pandemi Covid-19 (Argiyanti, Rochintaniawati, dan Anggraeni 2022)	Descriptive qualitative.	Online learning has been going well but there are constraints on the limited learning facilities owned by the students themselves.

Code	Title	Method	Result
J8	Efektivitas Model Pembelajaran <i>Flipped Classroom</i> Daring Menggunakan Media Sosial <i>Instagram</i> di Kelas X SMK (Sinatrya and Aji 2020)	Quantitative and descriptive qualitative.	Use <i>the feed tool</i> . There is an increase in learning outcomes as a sign of a flipped classroom learning model with <i>Instagram</i> effectively used on learning.
J9	Pengembangan Media Pembelajaran Berbasis Aplikasi <i>Instagram</i> Untuk Optimalisasi Hasil Belajar Mahasiswa Jurusan Pendidikan IPA UNIMA (Mokalu, Wowor, and Tumewu 2022)	Research and development by Borg & Gall.	Use stories and <i>feed tools</i> . The <i>Instagram</i> application developed is suitable for use in optimizing student learning outcomes.
J10	<i>Instagram</i> Sebagai Media Substitusi Papan Bimbingan Untuk Generasi Z (Adyastari, Yekti Sukma., Hartini, Sri., Agungbudiprabowo 2022)	Literature study.	The use of <i>Instagram</i> for counseling guidance services as a new touch in order to serve well.
J11	Model Latent Dirichlet Allocation Pada Perilaku Siswa Menggunakan Media Pembelajaran Daring (Prakerti et al. 2020)	Observation and literature study.	Use <i>the feed tool</i> . <i>Instagram</i> is a social media platform that can also be used for the benefit of schools in terms of assignments using <i>data crawling techniques</i> .
J12	Pengembangan Infografis Melalui <i>Instagram</i> Sebagai Penguatan Pemahaman Pokok Bahasan Sistem Pencernaan Manusia (Dewi, Adi, and Abidin 2021)	Research and development of the Sadiman model.	Use <i>the feed tool</i> . The development of infographic media through <i>Instagram</i> is worthy of being applied in learning.
J13	Pengembangan e-Modul Sistem Pertahanan Tubuh Dengan <i>Instagram</i> Untuk Meningkatkan Keterampilan Argumentasi Siswa Kelas XI SMA (Efrialdia and Subiantoro 2022)	Research and development of the ADDIE model.	Use <i>feed tools</i> and story highlights. E-module assessment of material experts 92%, media experts 81.5%, biology teachers 77.5% (fit for use) Effectively improve argumentation skills 0.54 (medium)
J14	Pengembangan Media Pembelajaran PAI Berbasis Reels <i>Instagram</i> Untuk Meningkatkan Minat Belajar Siswa (Akbar, Salminawati, and Rakhmawati 2022)	Research and development by Borg & Gall.	Media notability material expert 98%, media expert 90%, and linguist 97% (very decent) Practicality 75.48% (very practical) Effectiveness 0.58% (effective)
J15	Pengaruh Penerapan Model Pembelajaran Project Based Learning (PjBL) Berbantu <i>Instagram</i> (IG) Terhadap Hasil Belajar Peserta Didik Pada Materi Sistem Respirasi Kelas XI MIA SMA Negeri 2 Majene (Ibrahim, Amaliah, and Hasan 2022)	Pseudo-experiments.	Significant differences 77.5 (experimental, high category), 55.39 (control, medium). There is an influence of the application of the <i>Instagram</i> -assisted PjBL learning model on learning outcomes.
J16	Pengembangan Media Filter <i>Instagram</i> Berbasis Augmented Reality Sebagai Media Pembelajaran IPA untuk Meningkatkan Hasil Belajar Siswa Sekolah Dasar (Susetya and Harjono 2022)	ADDIE development model.	Using <i>feed tools</i> , story highlights, <i>instagram filters</i> . Media filter validity <i>instagram</i> media expert 80% (very high), material expert 76% (high). The effectiveness of the student response is 93% (very high), the teacher response is 91% (very high). Learning outcomes improved 63.67 to 82.33.
J17	Persepsi dan Sikap Calon Guru Biologi Terhadap Potensi <i>Instagram</i> Sebagai Sarana <i>Edutainment</i> dalam Pembelajaran Biologi (Utami and Kurniasiih 2022)	Qualitative and quantitative research.	Prospective biology teachers have a very positive perception of <i>Instagram</i> as a means of <i>edutainment</i> in learning biology in terms of motivation, interaction and creativity.

Code	Title	Method	Result
J18	Penggunaan media instagram: instastory sebagai pemberdaya hasil belajar kognitif mahasiswa biologi universitas negeri malang (Fernandasyah et al. 2019)	<i>Pre-experimental with one shot experimental case study.</i>	Cognitive learning outcomes 64.13%. It reduces the use of paper and is very attractive to the younger generation.
J19	Pengaruh pemanfaatan media sosial instagram terhadap kreativitas belajar pada remaja kelas VII (Rubiyati, Muhamad Asrori 2018)	Descriptive research	There is a significant positive influence on the use of Instagram social media with student learning creativity.
J20	Analisis Potensi Penggunaan Media Sosial Instagram untuk Pembelajaran Biologi di SMAN 2 Padang (S and Yogica 2023)	Quantitative descriptive research.	Instagram social media has the potential to support Biology learning with a value of 76.13%, this percentage is included in the potential category.

## Discussion

Each journal with the code J1-J20 uses research methods to take data to conclude a problem. The first thing we will discuss about research methods using the ADDIE development model design (Analyze, Design, Development, Implementation, and Evaluation). Journal articles that use the ADDIE development model (Analyze, Design, Development, Implementation, and Evaluation) are marked with J1, J13, and J16 codes. According to Rayanto (Rayanto and Sugianti, n.d.), the ADDIE model (Analyze, Design, Development, Implementation, and Evaluation) is an approach that interacts with each other in each phase. The phase includes analysis, design, development, implementation, and evaluation. Development of Instagram-assisted microblogs on class XI science cell material at MAN 3 Jember, development of electronic body defense system modules with Instagram to improve argumentation skills of grade XI high school students and development of augmented reality-based Instagram filter media as a science learning medium to improve the learning outcomes of elementary school students contains elements of similar titles from the three journal codes J1, J13, and J16. Judging from the title, there are researchers who develop a media and teaching materials, in accordance with the implementation of ADDIE (Analyze, Design, Development, Implementation, and Evaluation) itself this development research is based on the needs to be obtained.

According to the author of the J1 code journal, it has followed the complete ADDIE model procedure (Analyze, Design, Development, Implementation, and Evaluation) so that it can produce microblog products assisted by Instagram media obtaining an average percentage of validation from material experts 94% with very valid product criteria, media experts 92% of product criteria are very valid, and linguists 83.3% of product criteria are sufficient valid. The results of the implementation resulted in student response to the media by 89% of the product criteria were very interesting. The J13 journal code according to the author in its discussion emphasizes more on the feasibility analysis of electronic modules, analysis of students' scientific argumentation skills, analysis of effectiveness in improving students' scientific argumentation skills. So for ordinary readers will have difficulty because the researcher in the discussion does not include the main points of discussion in a structured manner from the ADDIE model (Analyze, Design, Development, Implementation, and Evaluation) itself. But the J13 code can already conclude that the research and development is feasible based on the assessment of media experts and material experts and is classified as worthy of assessment from teachers. The increase in students' scientific argumentation skills also increased by 0.535 including the medium category. The main research and development of ADDIE (Analyze, Design, Development, Implementation, and Evaluation) in J16 code is complicated in the process of retrieving data. According to the authors, the J16 code uses research methods that are not concise and can be confusing for readers. The research and development method initially took procedures from the Sukmadinata model, which has simplified the research and development of the Borg & Gall model into three subjects. These three main steps derive the stages of the preliminary study, the design and development stage, and the testing phase. The preliminary study stage is further divided into literature study, preliminary field study and preparation of design drafts. The new design and development phase uses the ADDIE model (Analyze, Design, Development, Implementation, and Evaluation). The discussion carried out in the J16 code describes how to obtain and process data using the ADDIE model (Analyze, Design, Development, Implementation, and

Evaluation). Research using the model method resulted in an increase in the average learning outcomes of students from 63.67 to 82.33. The suggestion from the author is that researchers should be able to directly describe using one model method what and how, so there is no need for derivatives of certain models. Overall, the journal codes J1, J13, and J16 can provide a view to readers that using the ADDIE model research method (Analyze, Design, Development, Implementation, and Evaluation) can also be considered in the advice section if you have suggestions for carrying out further research activities.

The next discussion in the J9 and J14 code journals each uses the research and development method of the Borg & Gall model. According to Borg & Gall (Amil, Setyawan, and Dellia, 2021), this Borg & Gall model can be interpreted as a process to develop a new product or perfect an existing product. The research and development steps start from preliminary studies, research planning, initial product development, initial field trials, revision of initial field trial results, wider field trials, revision of wider field trial results, feasibility tests, revision of feasibility test results, and dissemination and socialization of the final product. In accordance with the title published by the journal with the code J9, only four stages of data collection are carried out, the pre-development stage, the initial development stage, the development stage, and the final development stage. According to the authors, researchers are not precise in using this research method and are incomplete. As a result, the research obtained only concluded about the Instagram application-based learning media that was developed suitable for use in learning, without a clear percentage.

The J14 code journal in its research method also only applies four stages, namely the defining stage, the design stage, the development stage, and the revised product implementation stage. Although it is incomplete, this journal can conclude that Instagram media in PAI learning can be said to be feasible because it gets scores from media material experts 98%, media experts 90%, and linguists 97% very feasible, practicality 75.48% very practical, and effectiveness 0.58% effective. According to the author's point of view, as a researcher may simplify the research and development process but do not replace the original stage name points. Research methods are needed in every research that takes place, in order to obtain data that is relevant to existing problems. If a model of research methods applied is not carried out sequentially, there will be a bias so that research and development must be carried out from scratch or repeated.

J4 code journals use descriptive research methods using a qualitative approach. The J4 journal code produces about the use of Instagram social media for student assignments to make the best posts in the form of short duration photos and videos, inviting them to be able to do activities positively. The J7 code journal uses qualitative research methods where data is collected using google forms and direct interviews are conducted to students. Everything has been done well but the obstacle found is that some students do not have smartphones. J8 code journals also use qualitative and quantitative methods. Shows the results that Instagram media has the power to improve the quality of integrated learning using a flipped classroom model. Having similarities with the J8 code, J17 also uses qualitative and quantitative methods. The research resulted that prospective biology teachers have a very positive perception of Instagram as a means of edutainment. J19 and J20 code journals use quantitative descriptive research methods, where both journals produce research on the potential use of Instagram media in learning Biology by 76.13% and increase student learning creativity.

According to Zakariah (Zakariah, Afriani, and Zakariah 2020), qualitative research produces qualitative research activities in the form of in-depth descriptions studied from a comprehensive point of view. While quantitative research is the result of findings achieved using measurement data and using certain variables. According to the author, the J4 code uses this method but does not include the extent to which the limitations of the problem will be discussed. Thus, the results and conclusions in the J4 code are still inaccurate and credible. J7 code journals should be separated from discussions so that there is no confusion and there is no need to embed subchapters in the results and discussion section. The J8 journal code has a good level of discussion and is organized, but in conclusion the author does not affix the result part of the calculation data obtained. Similar to the J8 and J17 codes, it is less quantitative to write data at the end of the conclusion, the rest is good. Journals with the code J19 in the background have incorrect writing rules. At the end of the background paragraph, the researcher has written about the conclusion of creativity. In the research methods section, researchers still include the understanding of the type of research to be used, it should not need to be included. The conclusion chapter section, researchers also do not include the results of the data obtained. Finally, according to the author of the J20 code journal, the components of writing this journal are inadequate. Judging from the results and conclusions, researchers should also be able to use mixed methods, namely quantitative and qualitative.

Journals with the code J5 using literature study methods that produce Instagram media can increase student

interest in learning, especially in the millennial generation. The J10 code journal also uses a literature study method that produces Instagram media that can be an intermediary between students and BK teacher activities. Journals with the code J11 also use research methods, literature studies and produce Instagram media can be used for school assignments using data crawling techniques.

The literature study method according to Trygu (Trygu 2020), is a way for researchers to conduct research by reading books, magazines, journals, and other data sources in libraries or other places. The data analysis stages used in the literature method are organize, synthesize, and identify. The J5 code journal in the background section does not explain clearly what the purpose of this research is. According to the author of this journal, it has not explained that the Instagram application can increase students' interest in learning in certain cognitive things. According to the author of the journal, the J10 code is good because there are new innovations in the subject of Guidance and Counseling using Instagram media intermediaries. This is so that students can consult with teachers with problems they have anywhere and anytime. On the Instagram media, students also have new knowledge to overcome the problems that are being faced from Instagram posts. In the J11 code journal, according to the author, in the era of online learning during the Covid-19 pandemic, many teachers use Instagram media as learning. This data is obtained through data crawling techniques. The use of hashtags that are relevant to the rules of posting certain subjects, makes it easier for teachers to find student posts.

The J2 code journal in its research uses Fenrich's instructional research and development methods. The Fenrich instructional method (Salsabila, Wisanti, and Bashri 2021) is a development cycle consisting of the stages of analysis, planning, design, development, implementation, evaluation, and revision. The results of the study have explained that this planteogram media is worth developing. However, for the advanced stage, the results of the development stage have not been implemented, evaluated and revised. According to the author, if this stage of research and development can be carried out systematically, it will produce a perfect product and useful for education.

In the J3 code journal, the research method uses an explanatory sequential mixture method. According to Dwiastuti (Dwiastuti 2017) The mixed method of explanatory sequential design can be started with quantitative then qualitative stages. Researchers can start research according to quantitative design and utilize the findings of the first phase as a data base The second research is carried out with a qualitative approach, and vice versa. According to the author, J3 code has a discussion style of quantitative design, then there is a qualitative explanation. At the conclusion stage, researchers do not explain the results of the quantitative that has been done. Another journal on the J15 code of the study used pseudo-experimental research methods. Experimental research design is divided into two, namely pure experiments and pseudo-experiments. Pseudo-experimental design according to Agustianti (Agustianti et al. 2022), involves taking advantage of natural settings and subjects are not randomly assigned. Then in the J6 code journal here using experimental research methods with pre-test and post-test group control designs. Pre test and post test design forms according to Agustianti (Agustianti et al. 2022), is the most common form of experimental design with an intergroup approach when used. Journals with the code J6 are in accordance with the rules of the research stage of group control experiments, with the aim of wanting to know the difference in learning outcomes before and after treatment. According to the authors, using pre-test and post-test group control designs is very good in experimental treatment because it avoids selection bias in participants. The journal with the code J18 uses pre-experimental research methods with one shot experimental case study. According to Ismail (Ismail 2018), The research design is a class that is given treatment and then measurements are made. Usually, this study only uses descriptive data explanations. The J12 code journal uses the research and development method of the Sadiman model. Journals with the code J12 have produced research that Instagram media with infographic exposure is worth developing. Systematics of the development model by Sadiman according to Sadiman (Nurrita 2018) It consists of four stages, namely drafting, script writing, media production, and media program evaluation. According to the author, the research is good but in the discussion it has not been clearly written how the data obtained can be processed. In addition, using quantitative data analysis is also not clearly explained how data calculations are obtained.

As a social media platform that teenagers are interested in, Instagram is used intensively, especially in distance learning situations like now. The variety of features, such as photo and video uploads, live streaming, Instagram stories, feeds, and video calls, makes Instagram a good example for other social media. The Instagram application is very suitable to be used as an online learning platform because of its easy usability and popularity among millennials. The features available in this application support the learning process, such as a post feed that provides an initial overview of the material, Instagram TV for material explanation, and Instagram Live for student

and teacher interaction and the question and answer process regarding learning material. The diversity of features owned by Instagram should be fully utilized in the context of learning.

## CLOSING

### Conclusion

There are various research methods to collect data and formulate conclusions related to certain problems adopted in research on the development and application of Instagram as a learning medium. Some of them use the ADDIE development model (Analyze, esign, Development, Implementation and Evaluation) as a foundation. Instagram has potential as a learning tool, with a well-planned and creative approach. With the support of various features owned, Instagram can be an effective tool in improving the quality of learning in the context of online or online learning. Thus, teachers and learners should be able to adopt and utilize existing features to create an engaging and interactive learning experience.

### Suggestion

The use of Instagram stories, IGTV, and live streaming can provide variety in material delivery, provoke students' learning interest, and increase their involvement in Biology learning, so, teachers and researchers need to explore Instagram features more creatively. Training for teachers on how to effectively use Instagram in learning is also absolutely necessary to be able to help teachers be more confident and proficient in implementing this platform in an educational context. In addition, if choosing a research method, recommend including both quantitative and qualitative measurements. This will provide a more comprehensive picture of the impact of using Instagram in learning. Special emphasis on the evaluation and implementation phases in the ADDIE model (Analyze, esign, Development, Implementation and Evaluation) also needs to be done.

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