UNIVERSITAS SEBELAS MARET
BIOEDUKASI: JURNAL PENDIDIKAN BIOLOGI
https://jurnal.uns.ac.id/bioedukasi
1693-265X (Print) |2549-0605 (Online)

Misconception Analysis of Upin and Ipin Movie in Biology Learning Class X SMA on Viruses, Ecosystems, and Environmental Pollution Material

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Submission : 28/11/2022
Revision : 12/07/2023
Accepted : 26/08/2023

ABSTRACT

Misconceptions often occur in education, especially in biology. Misconceptions can occur outside of school. In addition, there are preconceptions about other sources. Sources of these preconceptions include, for example, films with unorganized science-fiction themes. The most popular children's animation film in the community today is Upin and Ipin. This study aims to analyze the misconceptions contained in the Upin & Ipin film with the theme of biology learning material on viruses, ecosystems, and environmental pollution. The method used in this research is a descriptive method with a qualitative data approach. The data collection technique uses observation and documentation, while the tools for collecting data are observation sheets and movie video files for the films. Upin&Ipin: Season 11 with the Hapuskan Virus 1-3, Season 10 with the title Ecosystem Part 1-3, and Season 7 with the title Bahaya Jerebu Part 1-3. The analysis results of misconceptions about Upin and Ipin movie are the most common in Episode "Hapuskan Virus". There are 5 concepts that have misconceptions in the category of misidentification with the number 71.42% in the high-level category, and there are 2 concepts with a category oversimplification of 28.57% which is in the low-level category. In Upin and Ipin's movie episode, Ecosystem and Bahaya Jerebu, there are 9 concepts, but there were no misconceptions. Based on this research, it can be concluded that there were misconceptions in animated movie Upin & Ipin season 11, entitled Hapuskan Virus Parts 1–3.

Keywords: Upin&Ipin Film, Biology Learning, Misconceptions, Misconceptions Categories

Introduction

Learning media is an absolute necessity in the teaching and learning process. The use of appropriate media in biology learning is one solution to various problems related to student interest and motivation (Emda, 2011). The use of film media in learning provides a new and fun atmosphere for students. According to Nurwita (2019), the most popular animated children's movie today is Upin & Ipin. This show is presented in a simple but communicative and educational way. It's also educational and enlightening. However, the film is also one of the sources of preconceptions that lead to misconceptions.

According to Ritonga et al., (2018), Ritonga et al., (2017), Handoko et al., (2016), and Saputra (2018) misconceptions can occur outside of school. In addition, there are preconceptions that come from students' own minds because of their limited understanding of the surrounding nature or other sources that they think they know better but can't be justified. In other words, students generally come to class not with an empty mind but with a number of experiences or ideas that have been formed previously when they interact with their environment (Handayani et al., 2014). This is also referred to as a source of preconceptions. Other sources of preconceptions include technology-themed movies and disorganized science fiction shows.

Misconceptions can prevent students from learning more deeply about biological material. This is because misconceptions can hinder the process of accepting and integrating new knowledge into students' thinking. In addition, concepts in biology are interconnected and serve as the key to understanding other concepts, so if misconceptions of one concept are not immediately addressed, it can lead to misconceptions of other concepts (Khairaty et al, 2018; Yulianti, 2017).

Based on the above problems and the absence of research on misconceptions that exist in films about learning biology, the researchers are interested in conducting research with the title "Analysis of Misconceptions of Upin and Ipin Movie in Learning Biology Class X SMA on the Material of Viruses, Ecosystems, and Environmental Pollution." This study aims to analyze the misconceptions that exist in the Upin & Ipin film which is based on learning the biology of viruses, ecosystems, and environmental pollution.

Methods

This research uses a qualitative approach. Data collection techniques in this study used document analysis and documentation techniques. Document analysis is a technique of retrieving data from written sources carried out by researchers in order to obtain support for analysis. Data collection through this document analysis technique is carried out by reading, recording, and collecting data from various written sources and literature. Researchers also use documentation techniques, which are data collection techniques for collecting and analyzing documents, both written, pictorial, and electronic. Data collection in this study was carried out by watching Upin & Ipin films entitled Hapuskan Virus Parts 1–3, Ecosystem Parts 1–3, and Bahaya Jerebu Parts 1–3. This activity aims to analyze the misconceptions that exist in Upin & Ipin episodes entitled Hapuskan Virus Parts 1–3, Ekosistem Parts 1–3, and Bahaya Jerebu Parts 1–3.

The data analysis technique in this study consists of three steps: (1) Data reduction is the process of selecting or simplifying rough data information. Data reduction in this study is to select every scene or conversation from the Upin & Ipin movie entitled Hapuskan Virus, Ecosystems, and Bahaya Jerebu related to biology learning, such as virus material, ecosystems, and environmental pollution. After that, the data were analyzed and categorized based on the types of misconceptions that exist. (2) Data presentation: The data is presented in tabular form. The data presented contains scenes or conversations in the Upin & Ipin movie related to learning biology, i.e. virus material, ecosystems, and environmental pollution. The results of

data from films that are considered to experience misconceptions are then compared with scientific articles. After comparison, the appropriate type of misconception is categorized. Then calculate the number of misconceptions in some category with the formula (Supardi, 2013).

$$Fr = \frac{nKi}{nKs} x100\%$$

Description:
Fr = Frequency
nKi = Number of misconceptions in each category
nKs = Total number of misconceptions

Table 1. Categorization of Misconception Level

No	Percentage	Misconception Level
1	0 - 30%	Low level of misconception
2	31 – 60%	Medium level of misconception
3	61 – 100%	High level of misconception

Source: (Didik et al., 2020)

(3) Data verification Before drawing conclusions, the results of the observations were verified by the verificators. Each material was validated by three verificators, so the total number of validators was nine. Among them were four lecturers from the Faculty of Fisheries and Marine Science at Muhammadyah University Pontianak and two biology teachers from Taman Mulia Senior High School Sungai Raya who validated the environmental pollution and ecosystem materials. Furthermore, two lecturers from the Faculty of Engineering Environmental Engineering Study Program and one lecturer from the Faculty of Agriculture validated the virus material. All validators involved are in accordance with the scientific fields related to the material. This aims to avoid bias. After validation by nine validators, the researcher checks and equates the answers of each validator. If there are inequalities in the answers from the validators, the researcher chooses the most common answer.

Results And Discussion

The misconceptions analyzed in the Upin & Ipin film consisted of three episodes, namely Hapuskan Virus, Ecosystem, and Bahaya Jerebu, Each of them has the potential to be a biology learning media. The misconception categories used are misidentification (errors in identifying a concept), oversimplification (a form of oversimplifying the concept from the actual concept, so that the concept presented is incomplete or even wrong), overgeneralization (the concept expressed is too general), undergeneralization (a concept that is applied more specifically than it actually is), and obsolete concepts and terms (a concept and term that is outdated, so it is no longer relevant to the results of recent research) (Afriliska, 2021). The analysis of Upin and Ipin's movies that there are still misconceptions. A concept is categorized if two or all panellists agree. Concepts that are only stated by one panellist will not be used in concept categorization (Nugroho, 2016). The results of misconception research on the Upin and Ipin movie are shown in Table 2.

Table 2. Misconception Results for the Upin&Ipin Movie

Film Title	Category Misconceptions				
	MI	OS	OG	UG	OCT
Hapuskan Virus	5	2	-	-	-
Ecosystem	-	-	-	-	-
Bahaya Jerebu	-	-	-	-	-

Description :

MI = Misidentification
OS = Oversimplification
OG = Overgeneralization
UG = Undergeneralization
OCT = Obsolete Concept and Term

Table 2. shows that there are misconceptions in the Upin & Ipin movie with the title Hapuskan Virus. The highest misconception in Upin & Ipin's movie titled Hapuskan Virus is in the misidentification category, with as many as 7 concepts. The lowest misconception in the Upin & Ipin movie titled Hapuskan Virus is in the oversimplification category of as many as 2 concepts.

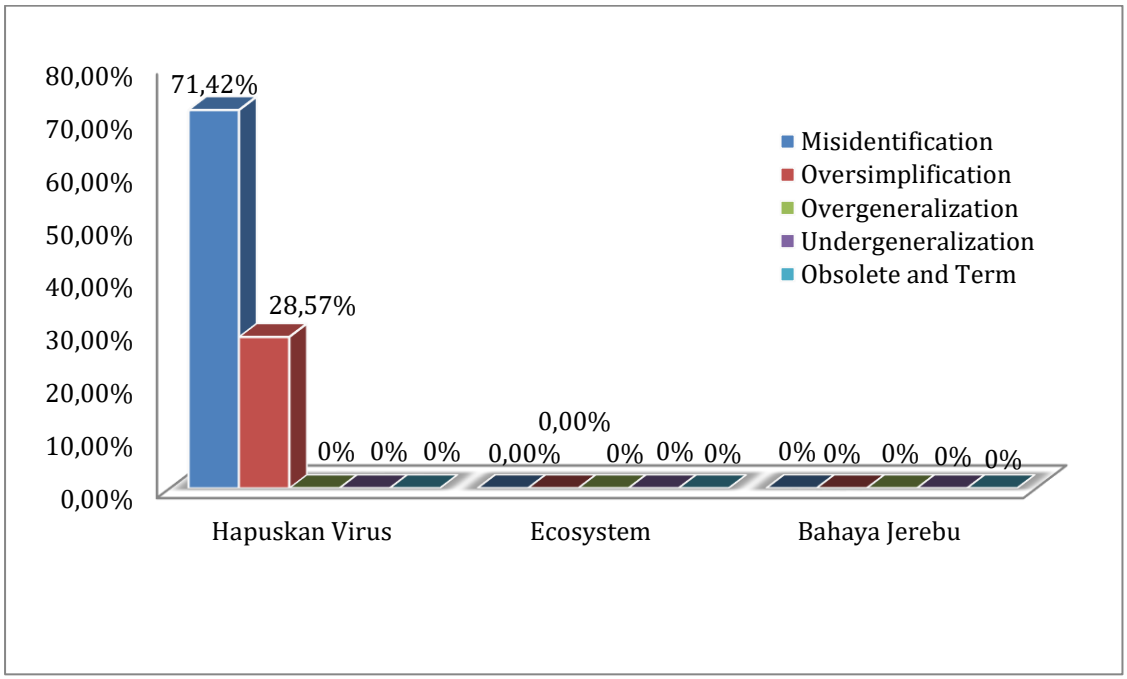


Figure 1. Percentage of Misconceptions in Upin & Upin Movie

Overall, there are 28 concepts in Upin and Ipin. In the Hapuskan Virus episode, there are 10 concepts; the Ecosystem episode has 9 concepts; and Bahaya Jerebu episode has 9 concepts. Based on Figure 1, it can be seen that the Upin & Ipin movie that has misconceptions is in the Hapuskan Virus episode. Misconceptions found in the Hapuskan Virus episode are in the range of 28.57%–71.4%. According to Istighfarin (2015), misconceptions are said to be low if the percentage is 0%–30%, moderate if the percentage is 31%–60%, and high if the percentage

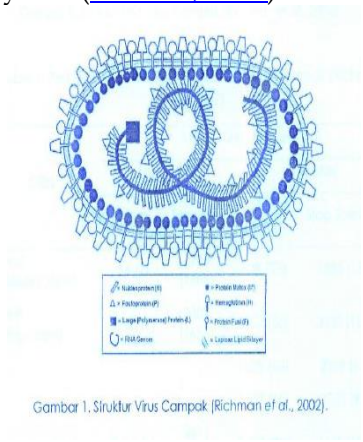
is 61%–100%. For the episode of Hapuskan Virus, the lowest category of oversimplification was 28.57%, and the highest category of misidentification was 71.42. For the Upin & Ipin episode of Ecosystems and the Bahaya Jerebu, no misconceptions occurred, meaning that this film can still be used as a learning media with teacher assistance.

Table 3. Result of the analysis of misconceptions in the Upin & Ipin film episode Hapuskan Virus

NO	Concept Film	ScientificConcept	Category	Description
1	 Minutes 03:07 Fizi coughs, then May wants to give a vaccine and says "You should be given an injection vaccine to prevent infection to other friends".	There are several criteria for individuals or groups who can't immunize themselves, including people who are sick. Sick people can't survive vaccination. If sick, the participant must recover first before being vaccinated. (Menkes, 2020).	Misidentification	As reported by Very Well Health, people who are sick can't get any vaccinations.
2	 Minutes 11:21, in this scene, Ipin takes out the tube containing the liquid vaccine, and then Upin say the vaccine contains good viruses to fight the bad viruses that spread the disease	Vaccines are harmless variants or pathogenic derivatives that stimulate the system's immunity to awaken awareness against dangerous pathogens. Vaccines stimulate the immune system to maintain a host of specific viruses, (Champbell et al., 2010).	Misidentification	This scene has two misconceptions. First, as mentioned by Upin, the vaccine contains a good virus, and the definition of the vaccine is explained in regulation by the Minister of Health number 42 Years 2013. Vaccines are antigens in the form of microorganisms that are dead, alive but weakened, still intact or part-processed, in the form of toxins from microorganisms

NO	Concept Film	ScientificConcept	Category	Description
				that have been processed, such as toxoid, and protein recombinant. When a vaccine is given to some person's body, it will give rise to immunity by being specifically active against certain infectious diseases. Second, mention that vaccines can fight evil viruses while drafting vaccine science to awaken the body's defense against disease. Saying fight the virus and awaken defense body has different meanings and the virus that is weakened can't fight active viruses.

3	 Minutes 13:00 and 17:16; Some of these scenes show a child who has been injected with the vaccine touching the virus, and then the virus is gone or destroyed.	The vaccine mechanism of action is influencing immune response memory cells that are protective and have formed in the past. Antibodies will be formed when the cells producing antibodies, lymphocytes (cell-B), have worked well. Antibody specific will be formed if there is any stimulation of specific-antigen (infectious) that goes inside the body (Setiawan et al., 2012). Vaccination will improve a specific response against pathogens via the formation of antibodies that will bind and neutralize pathogens (Sajuni, 2020). Although vaccines can prevent certain viral diseases, current medical technology can't do much to partially heal large viral infections that have already happened. Antibodies kill bacteria by inhibiting enzymes that are specific for bacteria but not eukaryotes or viruses, (Champbell et al., 2010).	Misidentification	When the body is given the vaccine, it will react with its immune system antibody. If the body is infected with a virus or bacteria, it will actually shape the immunity type of virus or bacteria to that type of virus or bacteria (Magdalena et al., 2018).
4	 13:26 minutes into the scene, it shows Upin and Ipin as doctors fighting viruses by shooting vaccine liquid against the virus.	Vaccination is available in several ways; for example, the BCG vaccine is given as 0.5 ml intracutaneously in the upper left arm area using 0.05 ml ADS. Polio vaccine is given orally (by mouth) in one dose (two drops) four times. Inactivated polio vaccine is injected intramuscularly, muscularly, or deeply subcutaneously at a dose of 0.5 ml. The measles	Misidentification	There are two ways to vaccinate: the first is injection, and the second is oral (through the mouth) (Magdalena et al., 2018).

		vaccine is 0.5 ml by injection in the upper left arm or inner thigh. Follow-up immunizations include DT and Td vaccines. injection intramuscularly or deep subcutaneously, with a dose of 0.5 ml for children under 8 years of age. while the Td vaccine is the same as DT. The dose and method of administration of the Td vaccine are the same, except that Td is indicated for individuals starting at the age of 7 years (Purwati, 2018).		
5	 09:50 minutes in this scene mention that he (the character shown) is the measles viruses	 Gambar 1. Struktur Virus Campak (Richman et al., 2002). Measles viruses have a size of 100–250 nm and contain a single strand of single RNA covered with a lipid protective layer. The measles virus has six main protein structures. H protein (Hemagglutinin) plays an important role in virus attachment to cells. F protein (Fusion) enhances the spread of viruses from cells. M protein (the matrix) on the inner surface virus protection layer plays an important role in viral union. The inside of the virus contains L protein (Large), NP (Nucleoprotein), and P (polymerase	Oversim-plifica-tion	This is because the shape and structure of the measles virus are different.

		phosphoprotein). L proteins and P proteins play a role in polymerase activity in viral RNA, while NP proteins play a role as protein structures in nucleocapsids, (Halim, 2016).		
6	 Minute 10:48 on the image above shows assorted scenes in viral shape, almost as big as humans.	The smallest virus diameter is only 20 nm smaller than ribosomes. Millions of viruses can easily be inserted into the needle. The biggest virus known, with a diameter of several hundred nanometers, is barely seen below a light microscope. (Champbell et al., 2010).	Oversim plificatio n	Megavirus chilensis is the largest virus strain discovered in 2011 off the coast of Chile. This genomic virus is 6.5% larger than the DNA code of the previous largest virus, Mimivirus, which was isolated in 2003. Because of its large size, it does not need an electron microscope to be seen; just use an ordinary light microscope.

One of the fields of science that contains many concepts is biology. Biology learning is a subject that has many concepts and requires correct understanding (Afriliska, 2021). In addition, the difficulties experienced by students in biology subjects are at the level of understanding. Understanding biological concepts between one concept and another is interrelated because this ability greatly determines the success of student's mastery of concepts for further learning material (Aseptianova et al., 2019). The number of concepts in biological material and the different ways of presenting material by each book author are factors that trigger the emergence of misconceptions (Irani et al., 2020).

According to (Wijiningsih et al., 2016), misconceptions are grouped into 5 categories according to Hersey, including: (1) Misidentifications are the most severe category of misconceptions because the concepts included in this category are completely different from the concepts stated by scientists, or in other words, the concept is completely wrong. The characteristic that refers to this category is that the concept expressed is contrary to scientific texts in general. (2) Oversimplifications are a form of over-simplifying of the actual concept so that the concept expressed is incomplete or even wrong. Characteristics that point to this category are the use of analogies for a misstated concept; the concept is not conveyed in its entirety, and some of the content of the concept is omitted, resulting in an incomplete or false

statement. (3) Overgeneralizations are generalizations of concepts that are too general. The characteristic that refers to this category is that the concept expressed does not pay attention to the limitations of exceptions. (4) Undergeneralizations are generalizations of a concept that are applied more narrowly than they actually are. The characteristics of this category are that the concepts expressed only refer to some objects or biological problems, and the concepts expressed can only be used to formulate some concepts or problems. This feature will apply if the concept has a broader scope than stated. (5) Obsolete concepts and terms are concepts and terms thathave been outdated, so they are no longer relevant to the latest research. The characteristics that refer to this category are that the concepts expressed are wrong because there are already new concepts based on the results of research, and the concepts expressed are not valid in this year but were valid in the previous year.

This misconception has a negative impact on students. Students will have difficulty understanding the concepts conveyed by the teacher, so the new knowledge that they will receive is hampered. The misconceptions experienced by each student in one class can be different from one another and have different causes. Therefore, the role of the teacher is very important in recognizing misconceptions and the causes of misconceptions that occur in students. In addition, teachers must be able to find ways to overcome these misconceptions (Utami, 2017). Paul Suparno (2013) reveals that to overcome misconceptions, there are three steps that must be taken: looking for or finding forms of misconceptions; looking for the causes of misconceptions; and choosing appropriate methods to overcome these misconceptions.

There are several factors that cause the Upin & Ipin movie's Hapuskan Virus episode to have misconceptions. This happens because of the simplified language. The scenes are made as simple as possible with the aim of being easy to understand but have fatal consequences so that the initial message that wants to educate about the importance of vaccines turns into misconceptions. As is known, the Upin & Ipin film is one of the foreign children's television programs originating from Malaysia, so the language used is also Malaysian, namely Malay. Language serves to unravel uncertainty. The greater the differences between cultures, the greater the uncertainty and ambiguity in communication. In addition, communication will also be more difficult. This difficulty can lead to, for example, more communication errors, more sentence errors, more possibilities to be misunderstood, and the possibility of many misperceptions (Dewi, 2012).

Conclusion

Based on the research results, it can be concluded that the Upin and Ipin movie contains misconceptions. The misconceptions identified in the Upin & Ipin movie are 7 concepts in the Hapuskan Virus episode, with 5 misidentification categories and 2 oversimplification categories. The percentage of misidentification in the Upin & Ipin film Hapuskan Virus episode is 71.42% with a high-level category, and the percentage of oversimplification is 28.57% with a low-level category. Although there are misconceptions, the Upin & Ipin movie is still feasible to use as learning media, provided that the teacher explains every scene in the movie. A clear indicator of the misconception category is needed to facilitate further research.

References

Afriliska, N., & Zulyusri, Z. (2012). Meta-analisis Miskonsepsi Buku Teks pada Materi Biologi SMA . *Jurnal Metaedukasi*, 3(1), 21–31. https://jurnal.unsil.ac.id/index.php/metaedukasi/article/view/3069

Aseptianova, Nawawi, S., & Pesisa, L. (2019). Analisis Pemahaman Konsep Siswa pada Materi Pencemaran Lingkungan Di SMA Negeri 4 Palembang. *Bioilmi: Jurnal Pendidikan*, 5(1), 59-65. https://doi.org/10.19109/bioilmi.v5i1.3540

Champbell, N. A., Reecee, J.B., & Mischell, L.G. (2010a). *Biologi Jilid 1 (5th ed.)*. Erlangga.

Dewi, R. S. (2012). Representation of Communication Between Cultures and Moral Messages in Animation Film (Study Analysis of Animation Film "Upin Ipin" In Mnc Tv). *Jurnal Komunikasi Pembangunan, 10*(1), 9–26. https://doi.org/10.46937/1020129055

Didik, L. A.., Wahyudi, M., & Kafrawi, M. (2020). Identifikasi Miskonsepsi dan Tingkat Pemahaman Mahasiswa Tadris Fisika pada Materi Listrik Dinamis Menggunakan3-Tier Diagnostic Test. *Jurnal of Natural Science and Integration, 3*(2), 128-137. http://dx.doi.org/10.24014/jnsi.v3i2.9911

Emda, A. (2011). Pemanfaatan Media DalamPmbelajaranBiologi Di Sekolah. *Jurnal Ilmiah DIDAKTIKA, XII*(I), 149–162. http://dx.doi.org/10.22373/jid.v12i1.444

Halim, R. G, (2016). Campak Pada Anak. *Cermin Dunia Kedokteran, 43*(3), 186–189. https://dx.doi.org/10.55175/cdk.v43i3.31

Handayani, R.A.. (2014). Profil Prakonsepsi Siswa SMP Kelas VIII pada Materi Cahaya. *Jurnal Pendidikan Fisika 2*(2). 25-29. https://jurnal.fkip.uns.ac.id/index.php/pfisika/article/view/4673

Handoko, R., & Sipahuntar, H. (2016). Analisis Miskonsepsi pada Buku Teks Biologi SMA Kelas X Berbasis Kurikulum Tingkat Satuan Pendidikan 2006 dan Kurikulum 2013 di Kota Tebing Tinggi. *Jurnal Pelita Pendidikan 4*(1). 039-047. https://doi.org/10.24114/jpp.v4i1.3681

Irani, N. V., Zulyusri, & Darussyamsu, R. (2020.). Miskonsepsi Materi Biologi SMA dan Hubungannya Dengan Pemahaman Siswa. *Jurnal Biolokus: Penelitian Pendidikan Biologi dan Biologi 3*(2), 348-355. http://dx.doi.org/10.30821/biolokus.v3i2.823

Istighfarin, L. (2015). Profil Miskonsepsi Siswa pada Materi Struktur dan Fungsi Jaringan Tumbuhan. *Berkala Ilmiah Pendidikan Biologi, 4*(3), 991–995. http://ejournal.unesa.ac.id/index.php/bioedu

Khairaty, I. N., Taiyeb, A. M., & Hartati. (2018). Identifikasi Miskonsepsi Siswa Pada Materi Sistem Peredaran Darah dengan Mengunnakan Three-Tier Test di Kelas XI IPA 1 SMA Negeri 1 Bontonompo. *Jurnal Nalar Pendidikan, 6*(1), 7–13. https://doi.org/10.26858/jnp.v6i1.6037

Magdalena, S. E., Maharani, H., & Gunawan, E. (2018). Pengembangan Reminder System ImunisasiBerbasis SMS Gateway. *Jurnal Telematika, 13*(2), 127–133. https://journal.ithb.ac.id/telematika/article/view/213

Nugroho, F. A. (2016). Identifikasi Miskonsepsi Sistem Pencernaan Manusia pada Buku Teks Bilogi SMA Kurikulum 2013 Di Kota Yogyakarta. *Jurnal Pendidikan Bilogi 5*(5), 13–22. https://www.researchgate.net/publication/342656527

Nurwita, S. (2019). Analisis Nilai-Nilai Agama dan Moral Anak Usia Dini dalamTayangan Film Kartun Upin dan Ipin. Jurnal Obsesi: *Jurnal Pendidikan Anak Usia Dini 3*(2), 506–517. https://doi.org/10.31004/obsesi.v3i2.252

Purwati, A., & Putri, M. N. (2018). Pemanfaatan Imunisasi sebagai Upaya Pencegahan Difteri. *J Kesehatan dan Agromedicine 5*(1), 418–426. https://juke.kedokteran.unila.ac.id/index.php/agro/article/view/1976

Ricman, D. D., Whiteley,R.J. & Hayden, F.G. (2002). Clinical Virology (2nd ed.). ASM Press. https://doi.org/10.1086/344824

Ritonga, N., Sakdiah B. G. H., & Fitriandika, S. N. (2017). Miskonsepsi Guru Biologi Pada Materi Sistem Ekskresi di SMA Negeri Se-Kabupaten Labuhanbatu. *Jurnal SIMBIOSA* 6(2), 104–110. https://DOI:10.33373/SIM-BIO.V6I2.1157

Ritonga, N., Sakdiah B. G. H., & Fitriandika, S. N. (2018). Miskonsepsi Siswa Biologi Tentang Materi Sistem Respirasi Pada SMA Negeri Se-Kabupaten Labuhanbatu. *Jurnal Pelita Pendidikan 6*(1), 042–046.

Sajuni. (2020). Vaksinasi Measles, Mumps, dan Rubella (MMR) Sebagai Prophylaxis Terhadap COVID-19. KELUWIH: Jurnal Kesehatan Dan Kedokteran, 1(2), 25–28. https://doi.org/10.24123/kesdok.v1i2.2570

Saputra, H. (2018). AnalisisKonsepsiSiswaKonsepDinamikaGerak di SMAN Kabupaten Aceh Barat Daya. *GRAVITASI Jurnal Pendidikan Fisika dan Sains 1*(1), 21-31. https://ejurnalunsam.id/index.php/JPFS

Setiawan, R. B., Iriana, D., & Rosidah. (2012). Efektivitas Vaksin dari Bakteri Mycobacterium fortuitum yang Diinaktivasi dengan Pemanasan untuk Pencegahan Penyakit Mycobacteriosis pada Ikan Gurami (Osphronemus gouramy). *Jurnal Perikanan dan Kelautan 3*(1), 25–40. https://jurnal.unpad.ac.id/jpk/article/view/3528

Supardi. (2013). Aplikasi Statistika Dalam Penelitian Yang Lebih Komprehensif. PT Gramedia Widiasarana Indonesia.

Utami, R. (2017). Analisis Miskonsepsi Siswa Dan Cara Mengatasinya Pada Materi Bentuk Aljabar Kelas Vii-C SMP Negeri 13 Malang. 3(1), 37–44. *Jurnal Pendidikan Matematika*. https://doi.org/10.33474/jpm.v3i1.2606

Wijiningsih, A., T., Triharjana, & Sukiya. (2016). Analisis Miskonsepsi Materi Struktur-Fungsi Jaringan Hewan dalam Buku Biologi SMA Kelas XI. *Jurnal Pendidikan Biologi 5*(7), 70-79. https://doi.org/10.21831/edubio.v5i7.4637

Yulianti, Y. (2017). MiskonsepsiSiswa Pada Pembelajaran IPA Serta Remediasinya. *Jurnal Bio Education 2*(2), 50-58. http://dx.doi.org/10.31949/be.v2i2.1197