Al-Ishlah: Jurnal Pendidikan
Vol.16, 3 (September, 2024), pp. 3064-3072
ISSN: 2087-9490 EISSN: 2597-940X, DOI: 10.35445/alishlah.v16i3.4743

Development of Case Study-Based Learning Strategy Textbook to Improve Critical Thinking Ability of University Students

Mifta Rizka[1] , Silvia Permatasari[2], Filma Alia Sari[3] , M. Yogi Ryantama Isjoni[4]

[1] Universitas Riau, Pekanbaru, Indonesia; mifta.rizka@lecturer.unri.ac.id
[2] Universitas Riau, Pekanbaru, Indonesia; silvia.permatasari@lecturer.unri.ac.id
[3] Universitas Riau, Pekanbaru, Indonesia; filma.alia@lecturer.unri.ac.id
[4] Universitas Riau, Pekanbaru, Indonesia; myogi.ryantama@lecturer.unri.ac.id

ARTICLE INFO

Keywords:

textbook;
case study;
critical thinking

Article history:

Received 2023-11-15
Revised 2023-12-31
Accepted 2024-06-30

ABSTRACT

Critical thinking skills are essential to address future challenges. An effective way to improve these skills is through case study-based learning activities. This research aims to develop a specially designed textbook with a case study-based learning strategy to improve students' critical thinking skills. The development process is based on the Borg and Gall model which focuses on the creation of practical educational products. This research was conducted at the Economic Education Research Program, Faculty of Teacher Training and Education, Riau University. This research method follows the 4-D development model by Thiagarajan, Dorothy S. Semmel and Melvin I. Semmel. It includes four phases: definition, design, development, and dissemination. First, the need for a textbook based on the case study was assessed. Then a detailed and systematic design was made and the first product was compiled and validated through expert testing involving FETT material, media and language experts from Riau University. Through the verification process, the textbook was classified as a good textbook and suitable for use. The textbooks were distributed to instructors and practiced in class. This development produces practical and quality educational products that aim to improve students' critical thinking skills. The focus of this study is on the final stage of product development and includes recommendations for future research using educational or experimental methods. The qualitative descriptive analysis approach used in this study highlights the potential of the textbook to enrich teaching materials, broaden horizons, and increase students' sociocultural awareness. This study examines the effectiveness of the 4-D development model in creating an educational product that integrates case study-based learning strategies to enhance critical thinking skills and provide a valuable resource for instructors and students in business education courses.

Corresponding Author:
Mifta Rizka
Universitas Riau, Riau, Indonesia; mifta.rizka@lecturer.unri.ac.id

1. INTRODUCTION

Education plays an important role in improving the quality and potential of individuals. This improvement is very important in the current era of globalization. Higher education has an important role in improving the quality of human resources through the tridharma of higher education. However, higher education institutions face great challenges in this endeavor. In Indonesia, university education has not significantly changed students' academic views and behaviors. This can be seen from the fact that there are still similar views and thoughts between university graduates and those who did not receive a university education. Ideally, higher education should foster hard skills and soft skills in students. Currently, the focus of education is only on theoretical knowledge and hard skills, thus ignoring soft skills that are important to improve these skills. According to Wagner (2008), critical thinking and problem solving are important soft skills. Critical thinking involves processing information, observations, and problems to make logical decisions (Yohana et al).

Critical thinking in higher education involves not only mastery of material, but also analysis, understanding, and meaningful application of knowledge. Tinio (Wahuni, 2011) emphasizes the importance of critical thinking skills in facing future challenges. Therefore, it is imperative to incorporate critical thinking into the curriculum and learning process to improve students' skills in this area. The promotion of critical thinking should begin in primary school and continue through higher education. An effective way to enhance critical thinking is through case study-based learning. This approach includes problem-based activities that are an integral part of the learning process (Juliawan, 2012; Utomo et al, 2014; Fauziah et al. 2017). Case study-based lectures improve students' critical thinking skills by engaging them with real-world problems presented by the instructor. To achieve the desired results in critical thinking skills, such lectures must be supported by structured and systematic textbooks. Textbooks are essential in the educational process to encourage independent learning. Cahyadi (2019) emphasizes that well-designed educational materials support effective learning. As structured learning materials, textbooks have an important role in achieving educational goals and improving critical thinking skills.

Textbooks typically encompass learning objectives, content, illustrations, exercises, summaries, formative assessments, and references, making them integral to the learning process (Taufiqi, Sulthoni, & Kuswandi, 2016; Perwitasari & Wahjoedi, 2018). As reference books for specific subjects, textbooks serve as a critical source of information for both teachers and students (Akbar, 2013). They play a key role in the educational process by identifying and conveying essential concepts that contribute to students' interest, motivation, and learning abilities (Dina et al., 2017). The textbook discussed here is based on a case study from the Learning Strategy course at Riau University, designed for teacher education students. This course emphasizes the use of specific methods and procedures to achieve educational goals (Dick & Carey, 2014; Gustiawati et al., 2014). Beyond assisting students in achieving a high Grade Point Average at Riau University, this textbook aims to enhance critical thinking, a vital skill for the 21st century.

Integrating real-world problems into the Learning Strategy course ensures that education goes beyond mere knowledge acquisition to foster critical thinking. In higher education, critical thinking encompasses not only mastering content but also analyzing, understanding, and applying knowledge in meaningful ways. Tinio (in Wahyuni, 2011) underscores the importance of critical thinking in meeting future challenges. Consequently, embedding critical thinking into the curriculum is crucial to developing students' abilities in this area. The cultivation of critical thinking should begin in primary education and continue through higher education. One effective approach to fostering critical thinking is case study-based learning, which involves problem-based activities as a core component of the educational process (Juliawan, 2012; Utomo et al., 2014; Fauziah et al., 2017). Lectures that incorporate case studies enhance students' critical thinking by engaging them with real-world challenges presented by instructors. To achieve the desired outcomes in critical thinking, these lectures must be supported by well-structured and systematic textbooks. In the educational process, such textbooks are

essential for facilitating independent learning. As Cahyadi (2019) asserts, well-designed teaching materials are fundamental to effective learning. Textbooks, as organized learning resources, play a crucial role in achieving educational objectives and fostering critical thinking skills.

In recent years, a number of related studies have shown that case study learning is very effective when actually applied in lectures, including: (a) improving students' creative thinking (Erawanto et al., 2016; Rodi'ah et al., 2021); (b) improving students' creative thinking (Erawanto et al., 2016; Rodi'ah et al., 2021); (c) improving problem solving skills (Aji et al., 2017; Febriana et al., 2020); (d) improving students' critical thinking skills (Suarsana, 2013; Pahriah et al., 2020), (d) improving students' concept understanding and learning outcomes (Marlina et al., 2019), etc. The purpose of developing a case study-based learning strategies textbook is to provide a comprehensive understanding of learning strategies through practical examples and improve students' critical thinking skills. This innovative approach aims to support the quality and outcomes of higher education. Previous research shows that problem-solving-based electronic modules are effective in developing critical thinking (Dila, Mitya, & Hurriyah, 2020).

This research aims to build on this by creating a versatile textbook available in both print and digital formats so as to encourage educational innovation and improve critical thinking skills in higher education. Case study-based lectures improve students' critical thinking skills by engaging them with real-world problems presented by the instructor. To achieve the desired results in critical thinking skills, such lectures must be supported by structured and systematic textbooks. Textbooks are essential in the educational process to encourage independent learning. Cahyadi (2019) emphasizes that well-designed educational materials support effective learning. As structured learning materials, textbooks have an important role in achieving educational goals and improving critical thinking skills.

2. METHODS

The Model used in this development research is the 4D development model (Four D Models) developed by Thiagarajan, Dorothy S.Semmel and Melvyn I. Semmel.The 4-D development Model includes 4 main steps, namely: (1) Identification, covering the identification and definition of textbook development needs based on case studies in the learning process.This step is a Needs Analysis Step.In developing products need to refer to the development requirements, analyze and collect information about the scope of development that needs to be done (2) design, for the purposes of designing or designing a handicraft product that contains instructions for the implementation of the design or learning strategy system for making handicraft products based on case studies will be written in detail at this design stage.testing standards, media selection, format selection and initial design (Thiagarajan, et.al.1974) (3) development, especially by making the first draft of the product by carrying out the validation stage and the actual stage.

This stage includes two stages, namely testing and professional development. Expert review is carried out to obtain suggestions for improvement and modification of hardware as suggested by experts, while development testing is carried out to obtain direct input in the form of feedback, feedback, and user feedback and (4) Dissemination, socialization steps carried out externally to promote the product being developed so that it can be adopted by individual users, groups or systems the diffusion phase has three main stages, namely validation testing, packaging, dissemination, and purchase. At this stage, the results of product development can be used by teachers in the classroom with the aim of enriching the material, increasing understanding, and improving the socio-economic level of students. cultural sensitivity the R&D method is suitable for research that applies innovation and finds results to handmade products and measures their efficiency, productivity and quality.this R&D model is used with the aim of creating innovative educational products in learning strategies, including Case Study-based textbooks to improve students ' reflective thinking skills. This research was conducted at the Faculty of Teacher Training and Education, University of Riau, especially in the Economic Education Study program. The implementation of the main steps of this development study does not necessarily follow the original version but is adjusted to the characteristics of the course and

the place of origin of the test participants. In addition, the model to be followed will be adapted to the development of needs in the field. At the development stage, the final product is validated by experts including material experts, communication experts, and linguists from other FKIP lecturers at the University of Riau. This research is limited to the final product development stage so that further research can be carried out through class action methods or experimental methods. Technical analysis used in this study based on descriptive qualitative analysis methods with a focus on the development of craft products that can be used in teaching activities.

3. FINDINGS AND DISCUSSION

In learning activities, textbooks occupy an important position because they help students learn independently. Cahyadi (2019) states that in developing teaching materials, the developed designs used can be considered to produce quality teaching materials and can support the effectiveness of the learning process because it is essentially about a 'linear process with learning activities'. One form of teaching material is textbooks. Textbooks are materials or learning documents that are arranged and used systematically by teachers and students in the learning process (Pannen and Purwanto, 2001). In general, textbooks are usually equipped with learning objectives or outcomes, subject matter, illustrations, exercises, summaries, formative tests, and references. The development of this research consists of four stages. This step aims to produce a product in the form of a learning strategy guide based on case studies.Improving students ' abilities cannot be done through simple lectures or explanations, but requires efforts to train and practice their abilities, including helping students get used to analyzing and researching solutions to surrounding problems with the case study method (Anggraini, 2020).In addition, the design to be made will be adjusted to the needs of the land. Here are the steps in the development of case study-based learning strategy textbooks

3.1 Defining Step

This identification step is carried out to identify and determine the need for textbook development in This phase involves designing a textbook product that is developed based on case studies. The first step is to create a test standard. At this stage, the author analyzes the learning and student goals. Once the exam standards have been prepared, the next step is to select the material for the modules. Generally material selection is done to determine which case to include depending on the nature of the material. After selecting the material, we determine the format of the case study module and formulate the design of the study module. After this stage is completed, the first draft of the case study-based learning strategy learning module will be created. The initial design is the overall design of the learning tool that needs to be done before running the experiment. This design includes a variety of structured learning activities (Thiagarajan et al.1974). At this stage begins the detailed preparation of the draft textbook or systematic design based on case studies. Although the content of this textbook is related to the RPS lecture theme, the discussion and discussion process should integrate the case study learning model and the value education approach. This affects the lecture process and makes the learning process more meaningful than just discussing theory in lectures.Learning that connects theory and the real world makes the lecture process more meaningful and improves student learning outcomes (Oktaviyanti & Novitasari, 2019; Misnah, 2020)

3.2 Design Step

This phase involves designing a textbook product that is developed based on case studies. The first step is to create a test standard. At this stage, the author analyzes the learning and student goals. Once the exam standards have been prepared, the next step is to select the material for the modules. Generally material selection is done to determine which case to include depending on the nature of the material. After selecting the material, we determine the format of the case study module and formulate the design of the study module. After this stage is completed, the first draft of the case study-based learning strategy learning module will be created. The initial design is the overall design

of the learning tool that needs to be done before running the experiment. This design includes a variety of structured learning activities (Thiagarajan et al.1974). At this stage begins the detailed preparation of the draft textbook or systematic design based on case studies. Although the content of this textbook is related to the RPS lecture theme, the discussion and discussion process should integrate the case study learning model and the value education approach. This affects the lecture process and makes the learning process more meaningful than just discussing theory in lectures.Learning that connects theory and the real world makes the lecture process more meaningful and improves student learning outcomes (Oktaviyanti & Novitasari, 2019; Misnah, 2020).:

Table 1. Distribution of teaching materials

Chapter	Teaching Material
I	**Concepts of Learning and Teaching**
	A. Definition of Learning and Teaching
	B. Factors Influencing Learning
	C. Principles of Learning
	D. Summary
	E. Formative Test
II	**Learning Theories in Teaching**
	A. Learning Principles for Goal Achievement
	B. Classification of Learning Theories in Teaching
	C. Learning Paradigms
	D. Summary
	E. Formative Test
III	**Basic Concepts of 21st Century Teaching Strategies**
	A. Definition of Teaching Strategies
	B. Models, Approaches, Methods, and Techniques in Teaching
	C. Components of Teaching Strategies
	D. Classification of Teaching Strategies
	E. Principles of Teaching Strategies
	F. Summary
	G. Formative Test
IV	**Teaching Models**
	A. Definition of Teaching Approaches
	B. Types of Teaching Approaches
	C. Effective Teaching Approaches
	D. Summary
	E. Formative Test
V	**Teaching Methods and Techniques**
	A. Definition of Teaching Models
	B. Types of Teaching Models
	C. Effective Teaching Models
	D. Summary
	E. Formative Test
VI	**Teaching Methods and Techniques**
	A. Definition of Teaching Methods and Techniques
	B. Factors Determining Teaching Methods
	C. Types of Teaching Methods
	D. Summary
	E. Formative Test

Sources: Researcher (2023)

3.3 Development Step

The development stage is the stage to produce development products in the form of teaching modules based on case study learning strategies. The steps that must be passed in this stage are expert assessment and development trials. Already designed modules are discussed for validation by experts. In this study, namely material experts, media experts, and linguists) who are lecturers at FKIP Riau University. The results of the assessment of the validity of textbook products by experts are described in Table 2 below:

Table 2. Results of Textbook Validation by Experts

Validator	Validation	Qualification
Material Expert	87%	Valid and can be used without revision
LInguist	82%	Valid and can be used without revision
Media Expert	80%	Valid and can be used with minor revisions
Total		249%
Average product validity		83%

After the product is verified by experts, the next step is a revision based on suggestions and input from the verifier. Based on the effectiveness test above, it can be concluded that case study-based learning strategy textbooks that have been validated are generally included in the category of good and feasible to use. With the appropriate categories, the final product is a textbook that instructors can use as a learning strategy during lectures. The developed product has a good value on the readability test means it can be used without modification (Prayitno, 2017).Based on the data obtained, this learning strategy's teaching module is effective and feasible to use at the dissemination stage. The next step in this phase is the development experiment. This experiment was conducted to obtain direct input in the form of answers, reactions, and comments from students and observers regarding the modules that had been prepared.

3.4 Dissemination Step

The dissemination phase is used to promote the product under development to be accepted by an individual, group or system.At this stage of dissemination, the textbooks developed by the researcher are distributed and can be used by teachers and students in their lectures. The use of this textbook is intended to enrich the material, insight, and student repertoire in lecture learning strategies. This learning strategy course is a core course for teacher education students. Problem-oriented lectures provide students with meaningful experiences. Case study based textbooks do more than just present cases to students for discussion. But it must be organized systematically so that students can actively and independently learn important concepts that are at the heart of their learning. The order of presentation of case-based textbook content is: (1) identify cases, (2) analyze cases in group discussions, (3) identify information, data, and literature, and (4) solve problems. This is to determine the steps to be taken. Considering, (5) draw conclusions from the case, (6) present the conclusions reached in the group discussion, and (7) approve the conclusions of the given case (Safitri & Purbaningrum, 2020)

Discussion

The use of case study-based textbooks extends beyond merely presenting cases for students to discuss. It is essential that these textbooks are systematically structured to facilitate active and independent learning of core concepts, which lies at the heart of educational objectives. The structured sequence for presenting content in case study-based textbooks typically involves the following steps: (1) identifying a relevant case, (2) engaging in group discussions to analyze the case, (3) gathering and determining necessary information, data, and literature, (4) outlining the steps required to solve the case, (5) formulating conclusions based on the analysis, (6) presenting these conclusions in group

discussions, and (7) reaching a consensus on the conclusions drawn from the case (Safitri & Purbaningrum, 2020).

Case study-based learning is shown to significantly enhance students' critical thinking abilities as they work through real-world problems presented in textbooks. This finding is supported by previous research that demonstrates the effectiveness of problem-solving E-modules in developing students' critical thinking skills (Dila, Mitya, & Hurriyah, 2020). The innovative aspect of the present study lies in the development of textbooks that can be utilized in both print and digital formats, distinguishing it from earlier studies. This innovation aligns with research by Mashud and Fifit (2022), which underscores the need for developing case study-based modules to support academic instruction.

Another significant advantage of case study-based textbooks is their potential to increase student engagement and motivation. By requiring students to actively explore and solve problems drawn from real-world scenarios, these textbooks foster a deeper understanding of the material. This, in turn, can lead to substantial improvements in academic performance. The interactive nature of case study learning encourages students to take ownership of their learning process, thereby reinforcing the skills needed for independent inquiry and problem-solving.

However, it is important to note that this study focused solely on the development of printed case study-based textbooks. For future research, there is a clear opportunity to explore the development of internet-based, interactive textbooks that leverage technology to further enhance the learning experience. Such advancements could support more dynamic and accessible learning environments, catering to the evolving needs of students in the digital age. The integration of technology in case study-based learning would not only enhance accessibility but also provide opportunities for richer, more interactive educational experiences that are essential for the modern learner.

4. CONCLUSION

The development of case study-based learning strategy textbooks has proven to be highly supportive of learning strategy lectures. Initial analysis revealed that while current lectures align with the curriculum, there is a shortage of case study-based resources, which are essential for developing 21st-century skills like critical thinking. The textbook was systematically designed, aligned with semester learning plans, and underwent expert validation, receiving high marks for material quality, language, and media presentation. Following validation and minor revisions, the textbook was deemed effective and ready for use. It was then disseminated for use by lecturers and students, incorporating Case-Based Learning to enhance students' critical thinking skills. This study's outcomes are expected to significantly contribute to the improvement of learning strategy courses, particularly at the University of Riau. The textbook has been well-received, noted for its engaging content and its ability to improve students' critical thinking in a way that is easy for them to understand. Future research should continue to innovate in the development of case study-based learning resources.

REFERENCES

Aji, S., Hudha, M. N., & Rismawati, A. (2017). Pengembangan modul pembelajaran fisika berbasis problem-based learning untuk meningkatkan kemampuan pemecahan masalah fisika. *SEJ (Science Educatioan Jurnal)*, Vol 1(No.1), 36-51

Born, W.R. & Gall, M.D. Gall. (1983). *Educational Research: An Introduction., Fifth Edition*. New York: Longman

Cahyadi, R.A.H. (2019). Pengembangan bahan ajar berbasis ADDIE model. *Halaqa: Islamic Education Journal*, 3(1), 35-42

Dila, Wahyuni. Milya, Sari. Hurriyah. (2020). Efektifitas e- Modul Berbasis Problem Solving Terhadap Keterampilan Berpikir Kritis Peserta Didik. Natural Science*: Jurnal Pendidikan Bidang IPA dan Pendidikan IPA*, 6(2), 180-189

Dina, F.R., Hariyono., Sudarmiatin (2017). Pengembangan Buku Ajar IPS SD Berbasis Kontekstual. *Jurnal Pendidikan: Teori, Penelitian, dan Pengembangan* Volume: 2 Nomor: 5 Bulan Mei Tahun 2017 Halaman 719-723.

Erawanto, U., & Santoso, E. (2016). Pengembangan modul pembelajaran berbasis masalah untuk membantu meningkatkan berpikir kreatif mahasiswa. *JINoP (Jurnal Inovasi Pembelajaran),* 2(2), 427-436

Fauziah, R., Abdullah, A.G., &Hakim, D. L. (2017). Pembelajaran saintifik elektronika dasar berorientasi pembelajaran berbasis masalah. *Inoovation of Vocational Tecnologi Education*, 9(2)

Febriana, R., Yusri, R., & Delyana, H. (2020). Modul Geometri Ruang Berbasis Problem Based Learning Terhadap Kreativitas Pemecahan Masalah. AKSIOMA: Jurnal Program Studi Pendidikan Matematika, 9(1),93

Gustiawati, Resty, Fahrudin, dan Muhamad Mury Syafei. (2014). Implementasi Model-Model Pembelajaran Penjas Dalam Meningkatkan Kemampuan Guru Memilih dan Mengembangkan Strategi Pembelajaran Penjasorkes. *Jurnal Ilmiah Solusi* 1(3) 33-40

Juliawan, D. (2012). Pengaruh Model Pembelajaran Berbasis Masalah Terhadap Pemahaman Konsep dan Keterampilan Proses Sains siswa Kelas XI IPA SMA Negeri 2 Kuta Tahun Pelajaran 2011/2012. *Jurnal Pendidikan dan Pembelajaran* IPA Indonesia, 2(1)

Mashud, Syahroni. Fifit, Firmadani. (2022). Pengembangan Modul Mata Kuliah Profesi Kependidikan Berbasis Case Study. *Jurnal Penelitian, Pendidikan dan Pengajaran*, 3(3), 236-243

Misnah, M. (2020). Desain Pembelajaran Problem Based Learning Untuk Meningkatkan Hasil Belajar Mahasiswa Pada Mata Kuliah Pendidikan IPS Di Universitas Tadulako. Nosarara: *Jurnal Pendidikan Dan Ilmu Sosial*, 8(1), 15– 22.

Oktaviyanti, I., & Novitasari, S. (2019). Analisis Penerapan Problem Based Learning pada Mata Kuliah Pendidikan IPS. *Musamus Journal of Primary Education, 50– 58.*

Panen dan Purwanti. (2001). *Panduan Menyusun Bahan Ajar Berbasis Kompetensi*. Jakarta: PT Elex Media Komputindo

Prayitno, S.H., & L. adyawati, E. (2017). Pengembangan Modul Matematika Diskrit Untuk Meningkatkan Multiple Intelligences Mahasiswa Universitas PGRI Adi Buana Surabaya. *Seminar Nasional Matematika dan Aplikasinya*. 28 Oktober 2017. Universitas Airlangga Surabaya.

Perwitasari, S., & Wahjoedi, W. (2018). Pengembangan Bahan Ajar Tematik Berbasisi Kontekstual. *Jurnal Pendidikan: Teori, Penelitian dan Pengembangan*, 3(3), 278-285.

Rodi'ah, S., &Hasanah, I. (2021). Eksplorasi Pembelajaran Matematika Berbasis Proyek Berbantu E-Modul Ditinjau dari Berpikir Kreatif Siswa. Ideas: Jurnal Pendidikan, Sosial dan Budaya, 7(3), 107-114)

Safitri, P. T., & Purbaningrum, K. A. (2020). Pengembangan Buku Ajar Berbasis Kasus (Case Based) Pada Mata Kuliah Statistika Pendidikan. *Jurnal Penelitian Pembelajaran Matematika*, 13 (1), 256–267

Suarsana, I. M (2013). Pengembangan e-module berorientasi pemecahan masalah untuk meningkatkan keterampilan berpikir kritis mahasiswa. *JPI (Jurnal Pendidikan Indonesia*), 2(2)

Tanjung, R., Dalimunthe, E. M., Ramadhini, F., & Sari, D. M (2022). Penerapan Model Pembelajaran Berbasis Proyek Untuk Meningkatkan Kepedulian Siswa Terhadap Lingkungan Pada Pembelajaran IPS Kelas IV B MI Model Penyabungan. *ITTIhad, 5(1)*

Taufiqy, I.R, Sulthoni, & Kuswandi, D. 2016. Pengembangan Bahan Ajar Digital Berdasarkan Model Guidde Project Based Learning. *Jurnal Pendidikan*, 1 (4): 705-711

Thiagarajan, S., Semmel, D. S., & Semmel, M. I. (1974*). Instructional development for training teachers of exceptional children. In A sourcebo*k. Indiana University, Bloomington, Indiana.

Utomo, T., Wahyuni, D., &Hariyadi, S. (2014). Pengaruh Model Pembelajaran Berbasis Masalah (Problem Based Learning) Terhadap Pemahaman Konsep dan Kemampuan Berpikir Kreatif Siswa (Siswa Kelas VIII Semester Gasal SMPN 1 Sumber Malang Kabupaten Situbondo Tahun Ajaran 2012/2013). *Jurnal Edukasi*,1(1)5-9

Wagner, T. (2008). *The Global Achievement Gap: Why Even Our Best School Don't Teach The New Survival Skills Our Children Need, and What We Can Do about It*. New York: Basic Book

Wahyuni, Sri. 2011. *Mengembangkan Keterampilan Berpikir Kritis Siswa Melalui Pembelajaran IPA Berbasis Problem Based Learning*. Diakses melalui http://ebookbrowsee.net/40-sri-wahyuni-pdf-d243266722

Yohana, Wuri, Santika, Hermien, Laksmiwati, Riza, Noviana Khoirunnisa (2018). Penerapan Model Problem Base Learning Untuk Meningkatkan Kemampuan Berpikir Kritis Mahasiswa. *Jurnal Pendidikan (Teori dan Praktik)* 3(1)