Strengthening Legal Literacy among Vocational School Students Through Education on Personal Data and OJK-Licensed Online Loans

Ira Safitri[*], Reni Setiansyah, Anisa Safitri, Sulanda, Permana Anggara, Dadang Sundawa, Dwi Iman Muthaqin

Civic Education, Faculty of Social Sciences Education, Universitas Pendidikan Indonesia
*Corresponding Author. Email: irasafitri229@upi.edu

Abstract: This community service program aims to enhance students' legal literacy regarding personal data protection and online lending services licensed by the Financial Services Authority (Otoritas Jasa Keuangan/OJK). The program was implemented through counseling sessions and interactive discussions involving 42 accounting students at SMK Muhammadiyah 2 Cibiru. Evaluation instruments consisted of pre-tests and post-tests, which were analyzed using descriptive quantitative and qualitative approaches. The results demonstrate significant improvements across all indicators of students' legal understanding. The average normalized gain (N-Gain) scores were 0.33 (moderate category) for basic legal knowledge, 0.46 (moderate category) for legal attitudes and awareness, and 0.43 (moderate category) for higher-order thinking skills (HOTS). Overall, the findings indicate that legal education on personal data protection and financial literacy is effective in enhancing students' awareness and critical thinking skills in addressing cybercrime risks in the digital era.

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Introduction

The development of information technology in the era of the Fourth Industrial Revolution has changed the way people interact, work, and access digital financial services. One tangible form of the negative impact of technology itself is cybercrime (Raffi et al., 2024). Many internet users are unaware that data theft is extremely dangerous. Leaked data can be misused for phishing, loan fraud, or hacking social media accounts to deceive people close to the victim. This situation is clearly detrimental and can cause material and non-material losses for victims (Marwati & Astofa, 2024). The Indonesian government, through Law No. 27 of 2022 concerning Personal Data Protection and POJK No. 76/POJK.07/2016 concerning the Improvement of Financial Literacy and Inclusion, has provided a clear legal basis for efforts to protect people's personal data and improving understanding of legal financial services.

The Financial Services Authority (OJK) plays an important role in supervising financial institutions and providing protection for consumers to avoid illegal online lending practices. However, the effectiveness of these regulations is still hampered by low public legal awareness, especially among the younger generation. Vocational high school students, as digital natives, do have high internet access, but they still have minimal understanding of the legal risks in digital activities, such as personal data security and the use of online financial services. In addition, to minimize these risks, students need to know the preventive

measures and increase their awareness of the importance of digital security (Syafuddin, 2023). This situation emphasizes the need for systematic legal education in schools to equip students with the ability to recognize, understand, and be critical of both licensed and illegal online loan services.

Personal data has become a valuable asset that is highly vulnerable to misuse. Various digital activities, ranging from social media, online banking transactions, to the use of online loan services, require individuals to submit a certain amount of personal information. Low legal awareness and understanding of data security have made many people, including teenagers, victims of identity theft, data dissemination, intimidation, and even extortion by illegal online loan applications. This phenomenon is exacerbated by low national financial literacy, as shown by the results of the National Survey of Financial Literacy and Inclusion (2025), which places most of the population in the sufficient and less literate categories. This condition has an impact on the low ability of the public to distinguish between legal and illegal financial services.

Previous literature reviews show that the issues of illegal online lending and personal data misuse are growing concerns. Research (Judijanto et al., 2024) emphasizes that technological advances increase the risk of personal data breaches, making regulatory understanding and legal literacy important for maintaining digital privacy security. Research (Rossa et al., 2024) confirms that illegal online lending and online gambling cause financial losses and high psychological stress, while (Saputra et al., 2023) emphasizes that low financial literacy is a dominant factor in people easily falling prey to illegal online lending. Research (Nurmawati, B., Herman, K., Widyanto, M. L., & Ferdiles, 2024) shows that although digital financial services facilitate transactions, the risk of cybercrime against personal data has increased significantly. An international study by (Yulu Jin, 2025) highlights the importance of strong data governance in the smart city era, while another study (Rohmansyah et al., 2023) shows that children and adolescents are vulnerable to personal data abuse, making data protection education in schools, including for vocational high school students, essential to strengthen digital legal literacy.

Although general digital literacy has been widely implemented, approaches that simultaneously integrate aspects of personal data protection law (PDP Law) with financial literacy (POJK) for vocational high school students are still very limited. Previous studies have focused more on data security or financial literacy in general, without linking it to the development of legal awareness among vocational high school students. Thus, there is an important gap regarding how legal education can be applied as a preventive strategy for students in dealing with the risks of online loans and personal data misuse.

At the community service partner level, namely SMK Muhammadiyah 2 Cibiru. The main problems identified include: low student understanding. Preliminary survey results involving 30 students at SMK Muhammadiyah 2 Cibiru showed that 60% of students did not understand the types of legal and illegal online loans, and awareness of the importance of understanding the two types of loans was still minimal. Meanwhile, only 15% knew the basic knowledge related to the differences between the two types of online loans through the OJK official website. The differences between legal and illegal online loans, a lack of in-depth knowledge about personal data protection regulations, minimal awareness of the risks of providing data access to digital applications, and suboptimal legal literacy training in schools. Although students have high internet access, their ability to assess the legality of applications and understand their legal implications is still very limited, making them potential victims of digital crime. Based on these needs, the objective of this community service program is to

describe and analyze the strengthening of vocational school students' legal literacy through education on personal data protection and OJK-licensed online loans, as a strategic step to foster legal awareness, improve digital literacy, and develop students' critical thinking skills in facing the risks of cybercrime in the modern era.

Method

The community service program was implemented through an educational method consisting of a pre-test to assess students' basic understanding, counseling sessions delivered by speakers from the Financial Services Authority (OJK) using presentations and case-based discussions, interactive question and answer sessions to deepen students' understanding, and a post-test to measure knowledge improvement after the activity. The participants consisted of 42 students from SMK Muhammadiyah 2 Cibiru majoring in Accounting.

The data collection tools consisted of questionnaires in the form of structured pre-test and post-test surveys comprising three main sections. According to Riduwan, questionnaires are a data collection technique suitable for measuring respondents' attitudes, perceptions, and understanding of a social or educational phenomenon (Riduwan, 2015). The first section measures students' basic knowledge about online loans and personal data protection, the second section measures students' attitudes and awareness of the importance of personal data security and caution in the digital world, and the third section measures students' higher-order thinking skills related to online loans and personal data protection. Technically, this instrument consists of 15 statements, divided into: 10 knowledge statements in the form of a comprehension scale (scores 1–4) to measure students' cognitive aspects related to online loans and personal data protection, and 5 statements about attitudes and higher-order thinking skills (HOTS) using a 4-point Likert scale, namely Strongly Disagree (SD), Disagree (D), Agree (A), and Strongly Agree (SA).

According to Likert, the Likert scale is one of the most commonly used measurement techniques in social and educational research (Likert, 1932). This is in line with Azwar, who also states that the Likert scale is commonly used in social and educational research because it is able to measure attitudes and perceptions systematically (Azwar, 2016). Scoring is done as follows:

Answer Categories	Score
Strongly Disagree (STD)	1
Disagree (DS)	2
Agree (Y)	3
Strongly Agree (SS)	4

The score for each indicator is obtained by calculating the average score of student responses. The score is then converted into a percentage, making it easier to interpret the results and compare pre-test and post-test data.

Data collection was conducted in two stages, namely pre-test and post-test. The pre-test was administered before the educational activities to determine the students' initial level of understanding, while the post-test was administered after the educational activities to obtain an overview of the students' understanding after receiving the material. Data analysis was conducted using quantitative descriptive methods by presenting the average scores and percentages for each indicator of legal literacy. According to Sugiyono, descriptive analysis is used to describe data as it is without making excessive generalizations (Sugiyono, 2019). To see the relative level of improvement in student understanding, Normalized Gain (N-Gain) analysis was used. According to Hake, N-Gain is used to determine the amount of

improvement in learning outcomes based on a comparison between the initial score and the final score against the maximum possible score (Hake, 1998).

Result and Discussion

The information provided by OJK gave students a comprehensive understanding of the dangers of illegal online loans and the importance of personal data protection in the digital age. Through the presentation of the material, students learned about the characteristics of illegal online loans, the risks of data misuse such as data distribution and identity theft, and the psychological and legal impacts that can arise for victims. In addition, the OJK introduced preventive measures to maintain digital security, including the importance of reading application access permissions, recognizing OTP-based fraud methods, and utilizing official complaint channels when encountering digital financial cases. This outreach directly improved students' legal literacy and awareness in using digital financial services safely and responsibly.

Figure 1. Implementation of Community Service

Common Forms of Personal Data Misuse in Illegal Online Lending Practices

Illegal online lending practices operate outside the legal framework, positioning borrowers' personal data as the main instrument for unethical debt collection. Misuse generally begins at the application installation stage, as illegal pinjol operators request excessive access permissions, including contacts, gallery, call history, and SMS, which are irrelevant to credit verification needs. This differs from legal pinjol operators licensed by the OJK, which are only allowed to access the Camera, Microphone, and Location.

One of the most common forms of abuse is "data sharing," which involves distributing the borrower's personal information to all contacts on their cell phone with the aim of pressuring, humiliating, and intimidating the victim when there is a delay in payment. Access to the gallery also allows perpetrators to use personal photos and videos as a means of blackmail by threatening to distribute them to the public or to the victim's social network.

In addition, there is a risk of identity theft, where the victim's ID card data and selfies are sold on the black market or used to apply for other loans without the data owner's consent. In fact, address data is often used to send physical threats or make fictitious orders to cause psychological pressure. Access to SMS messages increases the risk of OTP code misuse, which can open up opportunities for social engineering and financial fraud. Overall, personal data in the illegal online loan ecosystem no longer functions as a means of verification, but has instead become a tool for intimidation, blackmail, and digital crime. Therefore, literacy about these risks is important to prevent young people, including vocational high school students, from being exposed to the impacts of illegal online loan services.

Fundamental Differences Between OJK-Licensed Online Loans and Illegal Online Loans

The fundamental difference between legal and illegal online loans lies in their legal status and supervisory mechanisms. Legal online loans must be registered and licensed by the OJK, thereby subject to regulations on consumer protection, governance, risk management, and transparency. In contrast, illegal online loans are unlicensed, unsupervised by authorities, and operate without legal accountability.

In terms of access to personal data, legal online loans are limited to the use of the camera, microphone, and location for e-KYC purposes. Illegal online loans, on the other hand, request full access to sensitive data, particularly contacts and galleries, which form the basis for terror and data dissemination practices. Another difference is transparency in interest rates and fees. Legal online lenders are required to apply a clear fee structure and comply with the daily interest rate limit set by the Indonesian Fintech Lenders Association (AFPI), which is 0.3–0.4% per day. Illegal loan sharks often charge very high interest rates, deduct funds up front, and hide additional fees, resulting in multiplied debt burdens.

In terms of debt collection, legal loan sharks are required to comply with a code of ethics, prohibiting threats and intimidation, and limiting the time frame for debt collection. Illegal loan sharks, on the other hand, use psychological terror, slander, verbal abuse, and "data sharing" as their main collection methods. Institutionally, legal loan sharks have a clear, verifiable company identity and are equipped with official complaint services. In contrast, illegal loan sharks do not have a fixed identity and are difficult to trace, making them impossible to hold accountable.

Improving Legal Understanding Among Students at SMK 3 Cibiru Through Education on Personal Data and Types of Online Loans Licensed by OJK

The following are the results of education on personal data and types of online loans licensed by OJK on improving legal understanding among students at SMK Muhammadiyah 2 Cibiru. This data was obtained through pre-tests and post-tests conducted before and after the educational activities.

Pre-test Results and Post-test Results

Table 2. Basic Knowledge (Online Loans & Personal Data)

Statement	Pre-test					Post-test				
	STS	TS	S	SS	Average	STS	TS	S	SS	Average
I understand the difference between legal (official) and illegal (unofficial) online loans.	0	5	27	10	3,12	0	0	22	20	3,48
I understand the risks of personal data misuse in online lending practices.	0	2	27	13	3,26	0	0	22	20	3,48
I can cite examples of common forms of personal data misuse.	2	5	25	10	3,02	0	0	28	14	3,33
I know that legal online loans must be registered with the	1	4	22	15	3,21	0	0	19	23	3,55

OJK.									
I understand the importance of reading the terms and conditions before using an online loan application.	0	2	21	19	3,40	0	0	20	22	3,52

Based on Table 1, the results of the pre-test and post-test comparison show an increase in respondents' knowledge regarding online loans and personal data protection after receiving education. All indicators experienced an increase in average scores, which indicates a strengthening of respondents' overall understanding.

Understanding of the differences between legal and illegal online loans increased from an average score of 3.12 to 3.48. A similar increase was also seen in the understanding of the risks of personal data misuse, with the score rising from 3.26 to 3.48. In addition, the respondents' ability to identify forms of personal data misuse increased in score from 3.02 in the pre-test to 3.33 in the post-test.

In terms of regulation, knowledge that legal online loans must be registered with the OJK showed a significant increase, with the average score rising from 3.21 to 3.55. Respondents' awareness of the importance of reading the terms and conditions before using online loan applications also increased, from 3.40 to 3.52. In general, the shift in answers from the STS and TS categories to the S and SS categories in the post-test confirms the effectiveness of online loan & personal data education activities in increasing respondents' knowledge and awareness.

N-Gain Pre-test and Post-test Table

Indicator	Average Pre-test (X)	Average Post-test (Y)	N-Gain	Category
Understanding the difference between legal and illegal online lending	3,12	3,48	0,41	Moderate
Understanding the risks of personal data misuse	3,26	3,48	0,30	Moderate
Citing examples of personal data misuse	3,02	3,33	0,32	Moderate
Knowing that legal online lenders must be registered with the Financial Services Authority	3,21	3,55	0,43	Moderate
Understanding the importance of reading terms and conditions	3,40	3,52	0,20	Low

Overall Average N-Gain

$$\frac{0,41 + 0,30 + 0,32 + 0,43 + 0,20}{5} = 0,33$$

Based on the N-Gain calculation results, an average score of 0.33 was obtained, which falls into the **"Moderate"** category. This shows that the personal data and legal online lending education program was able to improve students' legal understanding quite effectively, although further reinforcement is still needed to achieve optimal improvement. Overall, the results of the pre-test and post-test comparison analysis, reinforced by the N-Gain calculation, show that the counseling provided was effective in increasing respondents' knowledge about online loans and personal data protection. The increase in the average score on all indicators

and the shift in answers from the STS and TS categories to the S and SS categories reflect a strengthening of conceptual understanding. The overall N-Gain value of 0.33, which is in the moderate category, indicates an improvement, particularly in the aspects of the legality of online loans and the risk of personal data misuse.

Pre-test Results and Post-test Results

Table 2. Attitudes & Awareness

Statement	Pre-test						Post-test			
	STS	TS	S	SS	Average	STS	TS	S	SS	Average
I feel it is important to protect personal data security in the digital world.	0	0	16	26	3,62	0	0	7	35	3,83
I am more careful about giving my personal data to third parties.	0	0	22	20	3,48	0	0	12	30	3,71
I believe that legal education can improve the digital literacy of the younger generation.	0	0	27	15	3,36	0	0	15	27	3,64
I am willing to share my knowledge about online loans and personal data protection with friends or family.	1	4	19	18	3,29	0	0	18	24	3,57
I feel better prepared to deal with the dangers of illegal online loans after attending this seminar.	4	6	17	15	3,02	0	0	21	21	3,50

Based on Table 2, the results of the pre-test and post-test comparison show an increase in respondents' attitudes and awareness regarding personal data protection and the threats of online loans after receiving education. All indicators experienced an increase in average scores, which indicates a strengthening of respondents' overall perceptions and readiness in facing risks in the digital world.

The increase in awareness of the importance of maintaining personal data security can be seen from the increase in the average score from 3.62 to 3.83. The attitude of caution in providing data to third parties also shows a positive trend with an increase in score from 3.48 to 3.71. In addition, respondents' belief that legal education can improve the digital literacy of the younger generation strengthened from a score of 3.36 in the pre-test to 3.64 in the post-test.

In terms of knowledge sharing, there was an increase in respondents' commitment to sharing knowledge about data protection with those closest to them, with a score increase from 3.29 to 3.57. Mental readiness and attitude in dealing with the dangers of illegal online loans also experienced a significant increase, from an average score of 3.02 to 3.50. In general, the shift in respondents' answers from the STS and TS categories to the S and SS categories in the post-test confirms the effectiveness of legal education activities in internalizing the values of digital awareness in respondents.

N-Gain Pre-test and Post-test Table

Indicator	Average Pre-test (X)	Average Post-test (Y)	N-Gain	Category
It is important to protect personal data in the digital world.	3,62	3,83	0,55	Moderate
Be careful when providing personal data to third parties.	3,48	3,71	0,44	Moderate
Legal education improves the digital literacy of the younger generation.	3,36	3,64	0,44	Moderate
Be willing to share knowledge about online loans and personal data protection.	3,29	3,57	0,40	Moderate
Feel more prepared to deal with the dangers of illegal online loans.	3,02	3,50	0,49	Moderate

Overall Average N-Gain

$$\frac{0,55 + 0,44 + 0,44 + 0,40 + 0,49}{5} = 0,46$$

Based on the N-Gain calculation results above, an average value of 0.46 was obtained, which falls into the **"Moderate"** category. This shows that legal counseling activities regarding personal data protection and online loans can effectively improve respondents' attitudes and awareness. This improvement reflects a positive change in participants' readiness to protect personal data and deal with the risks of illegal online loans in the digital world.

Overall, the results of the pre-test and post-test comparison analysis, reinforced by the N-Gain calculation, show that the legal education provided was effective in improving respondents' attitudes and awareness regarding personal data protection and the threat of illegal online loans. The increase in the average score on all indicators and the shift in respondents' answers from the STS and TS categories to the S and SS categories reflect a strengthening of commitment and awareness. The overall average N-Gain value of 0.46, which is in the moderate category, indicates a significant increase in awareness, particularly in terms of preparedness to deal with the dangers of illegal online loans and increased caution in sharing personal data with third parties.

Pre-test Results and Post-test Results

Table 3. Results of completing HOTs (Higher Order Thinking Skills) questions

Statement	Pre-test					Post-test				
	STS	TS	S	SS	Average	STS	TS	S	SS	Average
If any of my friends want to apply for an online loan, I can advise them to choose a legal and secure loan application.	1	3	25	13	3,20	0	0	18	24	3,57
I can devise simple strategies to protect my personal data from	0	3	31	8	3,12	0	0	22	20	3,48

potential misuse by irresponsible parties.										
I am able to analyze online loan advertisements to determine whether they are legal or illegal.	0	8	27	7	2,98	0	0	26	16	3,38
I can provide alternative solutions besides using online loans if there is an urgent need.	0	4	27	11	3,17	0	0	21	21	3,50
I can assess whether the personal data protection policy offered by an application is secure or not.	0	3	31	8	3,12	0	0	19	23	3,55

Based on Table 3, the results of the pre-test and post-test comparison show an increase in the respondents' higher order thinking skills related to online loan risk mitigation and personal data protection after receiving education. All indicators experienced an increase in average scores, which indicates a strengthening of the respondents' conceptual and practical understanding as a whole.

Understanding of the ability to recommend legal and safe online loans increased from an average score of 3.20 to 3.57. A similar increase was also seen in the respondents' ability to develop simple strategies to protect personal data, with scores rising from 3.12 to 3.48. In addition, respondents' ability to analyze online loan advertisements to determine their legality increased from a score of 2.98 in the pre-test to 3.38 in the post-test.

In terms of solutions and assessment, the ability to provide alternative solutions to online loans in urgent situations showed an increase from a score of 3.17 to 3.50. Respondents also became more adept at assessing the security of data protection policies on an application, as seen from the increase in scores from 3.12 to 3.55. In general, the shift in respondents' answers from the STS and TS categories to the S and SS categories in the post-test confirms the effectiveness of educational activities in improving respondents' analytical and evaluative abilities regarding the phenomenon of online loans and personal data security.

N-Gain Pre-test and Post-test Table

Indicator	Average Pre-test (X)	Average Post-test (Y)	N-Gain	Category
Recommending legal and secure online loans to others	3,20	3,57	0,46	Moderate
Developing personal data protection strategies	3,12	3,48	0,41	Moderate
Analyzing the legality of online loan advertisements	2,98	3,38	0,39	Moderate
Providing alternative solutions for urgent needs	3,17	3,50	0,40	Moderate
Assessing the security of data policies on applications	3,12	3,55	0,49	Low

Overall Average N-Gain

$$\frac{0,46 + 0,41 + 0,39 + 0,40 + 0,49}{5} = 0,43$$

Based on the N-Gain calculation results, an average score of 0.43 was obtained, which falls into the **"Moderate"** category. This shows that the personal data and legal online lending education program was quite effective in improving students' higher order thinking skills.

Overall, the results of the pre-test and post-test comparison analysis, reinforced by the N-Gain calculation, show that the counseling provided was effective in increasing the respondents' knowledge and analytical skills regarding online loans and personal data protection. The increase in the average score on all indicators and the shift in answers to the S and SS categories reflect a significant strengthening of conceptual understanding. The overall N-Gain value of 0.43 indicates an improvement, particularly in the aspects of assessing application policies and suggesting safe financial options.

Discussion

The misuse of personal data in illegal online lending practices is a serious issue that occurs due to weak data protection in society. Personal data protection is important to prevent misuse and privacy violations (Fira & Pratama, 2025). According to Law No. 27 of 2022 concerning Personal Data Protection, information such as names, contact details, ID card numbers, and biometric data must be processed legally, limited, and transparently. However, illegal loan applications often violate these principles by collecting excessive data without clear consent, then using it for intimidation, extortion, and data dissemination. This situation contradicts the data protection principles in the PDP Law and the electronic system security provisions in the ITE Law (2016), thereby eroding public trust in the fintech ecosystem and reducing financial inclusion. This challenge is exacerbated by low digital literacy among the public and weak oversight, allowing perpetrators to easily change identities and continue operating. Therefore, synergy between the OJK, Kominfo, law enforcement agencies, and the public is needed to strengthen technology-based oversight and build an ethical and secure digital culture.

The difference between legal and illegal online loans lies mainly in aspects of legality, supervision, data security, and consumer protection. OJK-licensed online loans operate in accordance with POJK No. 10/POJK.05/2022, which covers cost transparency, data access restrictions, collection ethics, and periodic audits. In contrast, illegal online loans lack clear legal standing, employ intimidating collection methods, and misuse users' personal data. Socially, legal online loans support financial inclusion, while illegal ones contribute to debt burdens, psychological stress, and erode public trust in digital services. Therefore, understanding these fundamental differences is crucial to prevent the public from falling into risky and unlawful financial practices.

Legal education provided to students at SMK Muhammadiyah 2 Cibiru has been proven to improve their understanding of the legality of online loans and the importance of personal data protection. Referring to regulations such as the 2022 PDP Law and POJK 10/2022, students are encouraged to understand the legal consequences of data access, the risks of misuse by illegal applications, and the importance of choosing services registered with the OJK. This improvement not only builds legal literacy but also fosters a critical and protective attitude towards risky digital practices. Through a good understanding of legal principles, students can develop into agents of change who are able to use financial technology safely, responsibly, and in accordance with regulations.

Conclusion

Through legal education activities conducted at SMK Muhammadiyah 2 Cibiru, it has been proven that students' legal literacy can be significantly strengthened. The analysis results show an increase in students' understanding in all aspects, ranging from basic knowledge of OJK regulations to higher-order thinking skills in analyzing the legality of digital financial services. Quantitatively, this improvement is reflected in N-Gain scores that fall into the "Moderate" category for cognitive aspects (0.33), attitudes and awareness (0.46), and HOTS analytical skills (0.43). Thus, systematic legal education can transform students into more critical agents of change, protective of personal data, and prepared to face the risks of cybercrime in the digital age.

Recommendation

Recommendations from this community service activity emphasize the importance of strengthening government supervision through the OJK and Kominfo by utilizing Artificial Intelligence-based early detection technology and imposing strict sanctions on perpetrators of personal data misuse. At the educational level, schools need to continue developing legal and digital literacy programs through regular training and cooperation with official institutions, despite obstacles such as limited teaching resources and facilities. The public also needs to increase awareness in protecting personal data and always check the legality of online lending platforms through the OJK's official website. These efforts still face obstacles in the form of low digital literacy and the prevalence of hoaxes. Continuous collaboration between the government, educational institutions, and the public is expected to create a safe and ethical digital ecosystem.

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