

The Effectiveness of the Android-Assisted Information Service Model to Enhance Students' Understanding of Academic Resilience

Fikri Arif Gumelar [✉], Mungin Eddy Wibowo, Awalya Awalya

Universitas Negeri Semarang, Indonesia

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Abstract

Academic resilience is an individual's ability to survive and recover in difficult conditions. Many studies conclude that academic resilience assists students in dealing with learning difficulties, improving achievement, reducing anxiety at school, school fatigue and the habit of skipping school. Regarding these issues, the present study aimed at testing the effectiveness of the Android-assisted information service model to enhance students' understanding of academic resilience. It was a quasi-experimental study which used a non-equivalent control group design to determine the level of effectiveness of treatment in the control and experimental groups. The treatment was in the form of media and guides have been validated by experts with excellent and feasible results. Following the data collection, the analysis was carried out using a paired sample t-test. Subjects in the experimental group (59 students) and the control group (51 students) had relatively similar initial academic resilience scores. Based on the findings, the Android-assisted information service model has been effective in enhancing the understanding of academic resilience in students at SMP Negeri 19 Semarang. Further researchers are recommended to add game and data management features to the Android products being developed.

[✉] Correspondence address:
Ranjikulon, Kasokandel, Majalengka, Jawa Barat
E-mail: fikriag97@students.unnes.ac.id

INTRODUCTION

Resilience is explained as the process, capacity, or result of successful adaptation during challenging or threatening circumstances (Howard & Johnson, 2000). In the academic context, academic resilience is defined as a student's ability to deal effectively with academic setbacks, stress, and learning pressure (Martin & Marsh, 2003). The higher the academic resilience a student has, the lower school burnout they experience (Fiorilli et al., 2020).

According to the findings of the preliminary study at SMP Negeri 19 Semarang, the condition of understanding academic resilience among students was very diverse. As many as 32% or 53 students from the total respondents showed a low understanding of academic resilience. Meanwhile, the majority of students as many as 48% or 80 students, had a medium level of resilience understanding. In addition, around 20% or 34 students attained high academic resilience. These findings project significant variations in the academic resilience understanding at SMP Negeri 19 Semarang, where efforts were still needed to develop it.

Reivich & Shatte (2003) state four basic functions of resilience in human life, namely (1) overcoming difficulties that have been experienced; (2) overcome difficulties in daily life; (3) rising after experiencing trauma or great difficulty; and (4) achieving the best performance. Awalya et al., (2020) argue the level of resilience a person has also has a close relationship with his characters. Meanwhile, Aza et al. (2019) mention that resilience is not an inherited genetic factor, but individual potential to become resilient, even the ability to be resilient is something that can be changed, grown or even eliminated.

Regarding its function, Seçer & Ulaş (2020) in their study conclude that academic resilience has a protective role in reducing or even preventing the negative effects of school absenteeism and adolescent psychological problems. A study by Cengiz & Peker (2022) found that individuals with high resilience will be able to overcome various kinds of stressful situations and other obstacles related to the

academic process so that they are able to maintain optimal learning motivation and have good learning achievements.

In line with the previous statements, Kumpfer (2002) argues that individuals who have high self-resilience will have a tendency to have positive emotions. Then, Mavroveli et al., (2007); Ke & Barlas (2020) mention that individuals with good emotional intelligence tend to be able to overcome symptoms of depression and are better at overcoming difficult occurrences. It is so because academic resilience is an ability that enables individual to control himself to persist and focus on the desired goals and not get involved in things that disrupt the process of pursuing the goals.

There are numerous things that school counselors can do to help provide students with an understanding of academic resilience. As Hartinah & Wibowo (2015) argue, one of the positive supports that can be provided is by implementing information services.

Prior to the provision of information service, several things need to be considered. Afiah et al., (2021) state that information services will run smoothly if fun methods are used. It is also in line with Luahambowo, (2020) who states that guidance and counseling teachers who use the lecture method make students bored quickly and look are less attractive.

Some possible interesting methods can be utilized to attract students. Luahambowo (2020) mentions that information services implemented using a jigsaw technique in cooperative learning approach are more effective in improving learning skills. Using a team-based learning approach can improve collaboration skills such as identifying, researching, analyzing and formulating answers and solutions to problems found (Nurpratiwi et al., 2022).

Chuang (2014) in his study concludes that learning media with technology and information can create an interesting learning atmosphere and contribute a positive impact on academic performance in the form of learning motivation and student learning outcomes. Not only is the use of Android application-based learning media interesting, the media can also provide a new

atmosphere of fun and interest during the ongoing learning process (Valk et al., 2010).

Based on Wibowo (2019) even though technology can never replace face-to-face counseling, professional counselors must also realize that the internet and technology are inseparable from everyday life. Also, Calimag et al., (2014) state that an android medium is one way to adapt to 21st century learning styles, so professional counselors need to be familiar with existing technology. This is strengthened by Wibowo (2018) that in the 21st century Indonesia faces various challenges from within and without due to globalization.

Regarding theoretical studies, an android-assisted information service was considered interesting to experiment as a means of increasing academic resilience understanding. In its implementation, the service was aided with a team-based learning model. It was hoped that the findings of this study can be an alternative for providing services through media to enhance student's resilience.

METHODS

The subjects in this study were 8th grade students at SMP Negeri 19 Semarang. In testing the effectiveness, they were divided into 2 groups, namely the experimental group and the control group. The experimental group consisted of 59 students, while the control group consisted of 51 students. Both group subjects were selected randomly since the classroom services apply to all students and all of them gained almost the same mean score.

In measuring students' resilience, an instrument developed based on the theory of Martin & Marsh (2003). was used. It covers all aspects of resilience, including self-confidence, self-control, composure (low anxiety/calmness) and commitment (perseverance). All statement items on the academic resilience scale were measured using 4 choices (1=strongly agree; 4=strongly disagree). Based on the results of the validity and reliability tests there obtained 31

valid statement items with a Cronbach's alpha value of 0.921.

This investigation done in this paper was in a form of a quasi experimental study with a non-equivalent control group design aiming at measuring the level of effectiveness of treatment in the control and experimental groups. With this approach, the effectiveness of the android-assisted information service model to increase students' understanding of academic resilience was estimated. Moreover, the treatment materials in this study were in the form of an application medium and guides for implementing information services that have been validated by experts with very good and feasible results. Its visualization is presented in the following figure 1.

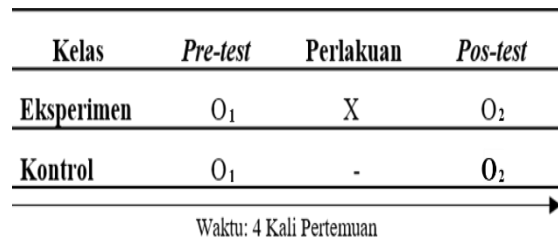


Figure 1. The Intervention Model Pattern

A pre-test was given to all groups before the intervention. After carrying out the pre-test, the experimental group received an information service intervention with a series of activities totaling 4 meetings. The following day after the pre-test, materials on academic resilience understanding were taught to the subjects. On the second day, the material delivery was focused on indicators and aspects of academic resilience. On the third day, there were film screenings, reviews and assignment to students. In the final meeting or after the implementation of the intervention, a post-test and evaluation of the series of activities took place. On the other hand, the control group was immediately given a post-test without any treatment intervention.

Visually, the android-assisted information service model to increase understanding of academic resilience given to the experimental group can be seen in Figure 2.

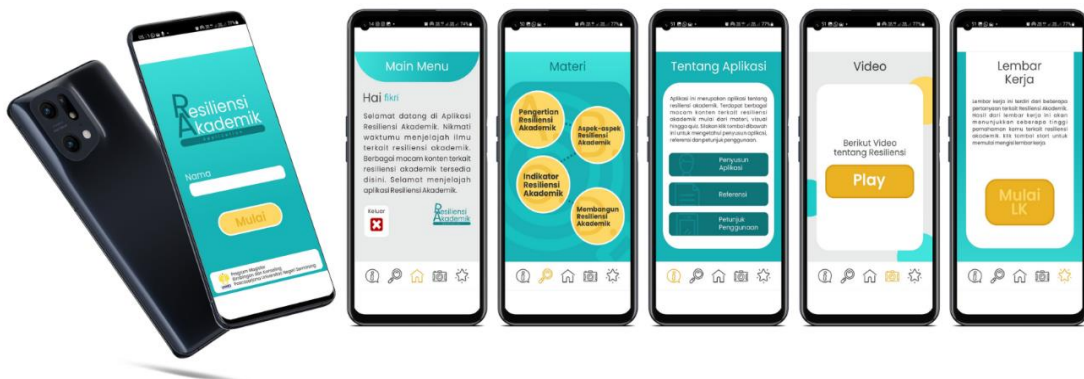


Figure 2. The Android Application Used during the Intervention

The data analysis to test the hypotheses in this study was carried out using parametric statistical tests, namely (1) within test using paired sample t-test; (2) between test using One-way ANCOVA. Another test, namely the assumption tests were in the form of normality and homogeneity of data. All those analyses were carried out with the help of statistical data processing application software.

The pre-test data indicated that the level of students' academic resilience was in the low category. In details, the pre-test results of the experimental group showed ($M=76.07$, $SD=10.632$), while the control group showed ($M=77.53$, $SD=8.300$). After the experimental group receiving the treatment, there was an increase in the score on the post-test, namely ($M=82.10$, $SD=9.206$), while the control group obtained ($M=77.55$, $SD=9.661$).

RESULTS AND DISCUSSION

Table 1. Paired Sample T-Test Results for the Experimental and Control Groups

Groups	N	Pretest		Posttest		t	p
		M	SD	M	SD		
EMI	59	76.07	10.63	82.10	9.21	-10.15	< 0.01
KMI	51	77.53	8.30	77.55	9.66	-0.01	>0.05
<i>F</i> (df=1,107)				17.67			
<i>P</i>				<0.01			

Group Notes: EMI: Information Model Experiment, KMI: Information Model Control

Based on table 1, the results of the paired sample t-test in the experimental group indicated that the android-assisted information service model intervention was effective in enhancing students' understanding of academic resilience by ($t=-10.147$, $p<0.01$). Meanwhile, in the control group there was no increase in students' understanding of academic resilience ($t=-0.014$, $p>0.05$).

between the experimental and control groups was ($F=17.672$, $df=1,107$, $p<0.01$).

In terms of the one-way ANCOVA test, differences in results were found between both groups following the provision of the treatment. It was known that the comparison of the mean

The findings of this study provided a strong basis for confirming that the android-assisted information service model gave a significant positive impact on the development of academic resilience in students. It is in line with Leksana et al., (2013) who state in their study that guidance and counseling media can be alternatives that can support the process of implementing guidance and counseling services. Fitri et al., (2016) state that in implementing information services, various methods can ideally be used so that students' understanding of the service material

can be optimized. Learning media with technology and information can create an interesting learning atmosphere and have a positive impact as well as increasing student motivation and learning outcomes (Chuang, 2014). Not only is the use of learning media interesting during the android application-based learning process, it can provide a new atmosphere, a sense of enjoyment and interest during the ongoing learning process (Valk et al., 2010).

Increasing understanding of academic resilience can be better understood as the result of implementing structured and targeted interventions through the android-assisted information service. This innovation not only provided a practical solution to enhance students' understanding of academic resilience, but also emphasized the positive role of technology in supporting the development of psychological skills in the current educational context. Technological resources are clearly beneficial elements in secondary education teaching (Miravete, 2018; Montes & Vallejo, 2016; Vallejo & Roa, 2015).

The benefit of applications lies in their ability to present information in an interesting and accessible way, making learning more interactive and relevant for students. didik. Chuang (2014) mentions that learning media with technology can create an interesting learning atmosphere and have a positive impact on academic performance in the form of learning motivation and student learning outcomes.

In this study, the intervention was carried out over 4 meetings using a team-based learning approach. Team-based learning in its implementation has two objectives, namely to deepen student learning and encourage the development of learning teams. Student involvement is a characteristic of this method. Its effectiveness is source from the level of team cohesion and high trust between students in the activities to be undertaken (Michaelsen et al., 2007).

The android-assisted information service made a positive contribution to the development of a more holistic learning approach, not only

focusing on academic aspects, but also considering the psychological and social aspects of students. Increasing understanding of academic resilience can help students deal with academic pressure, manage stress, and be better prepared to face changes or difficulties in the educational environment. This is in accordance with Cengiz & Peker, (2022) who argue that students who have good academic resilience are able to overcome stressful conditions so that they are able to maintain optimal learning motivation and have good learning achievements.

The android intervention in this study could provide access to digital resources and tools that can help students build digital literacy skills. It somehow facilitated students in developing digital literacy skills. As a result, students can develop academic resilience and literacy at the same time effectively using this kind of service. Again, the goal was to help students adapt to current developments. It is in association with Calimag et al., (2014) who state that android-based media are ways to adapt to 21st century learning styles.

The resilience materials contained in the android application can help students in achieving psychological well-being. It is called the holistic approach. In this way, the android-assisted information service can be an effective tool in increasing students' understanding of academic resilience.

The android-assisted information service also allowed students to study outside of formal class hours, giving them the opportunity to continue to explore and deepen their understanding without being tied to a specific time and place. Squire, (2009) states the same thing that Android-based learning media provide opportunities for students to learn without being limited by place and time. Through Android applications students can turn learning into a more personal and customized experience. Empirically, the android-assisted information service model could be used as a media reference by counselors to enhance students' understanding of resilience. By using android applications, a more dynamic learning environment can be created in line with technological developments.

As a supporting tool, the android application not only enriches students' learning experiences with interactive and relevant information, but also creates an interesting learning atmosphere that matches the needs of a generation of students who are adapting to technology. Another reason android can improve learning is because it is more efficient in the classroom has characteristics such as portability and mobility (Gómez-García et al., 2020).

In terms of characteristics, most of today's students are a generation that is familiar with technology and has high motivation for things related to technology. Thus, the android-assisted information service model not only brought a practical dimension to the delivery of information, but also opened up opportunities for counselors to design learning experiences in accordance with the current technological context. Besides becoming an experience, learning with technology is a process of getting used to staying updated with technological developments. (Moreira et al., 2018). Thus, the android-assisted information service model not only brought a practical dimension to the delivery of information, but also opened up opportunities for counselors to design learning experiences in accordance with the current technological context. Besides becoming an experience, learning with technology is a process of getting used to staying updated with technological developments.

CONCLUSION

This study was conducted to test the effectiveness of the android-assisted information service to enhance students' understanding of academic resilience at SMP Negeri 19 Semarang. From the findings, it can be concluded that this intervention model is effective in enhancing students' academic resilience and understanding.

Some suggestions are given regarding the findings. First, school counselors are suggested to implement information services assisted by the model that has been developed. Second, schools as educational institutions are expected to provide opportunities, support and facilitate the

implementation of the android-assisted information services to enhance students' academic resilience. Third, future researchers may add game features and data management to the android media being developed.

REFERENCES

- Afiah, N., Nisa, A., & Wulansari, L. (2021). Layanan informasi dalam meningkatkan pemahaman cyberbullying di media sosial. *Orien: Cakrawala Ilmiah Mahasiswa, 1*(1), 67–72. <https://doi.org/DOI:10.30998/ocim.v1i1.4574>
- Awalya, A., Nugroho, I. S., Anggraini, W., & Susilawati, S. (2020). *Relationship between inspiration characters and the resilience of prospective educators in facing the disruption*. <https://doi.org/10.4108/eai.29-6-2019.2290237>
- Aza, I. N., Atmoko, A., & Hitipeuw, I. (2019). Kontribusi dukungan sosial, self-esteem, dan resiliensi terhadap stres akademik siswa SMA. *Jurnal Pendidikan: Teori, Penelitian, Dan Pengembangan, 4*(4), 491–498. <http://dx.doi.org/10.17977/jptpp.v4i4.12285>
- Calimag, J. N., Mugel, P. A., Conde, R. S., & Aquino, L. B. (2014). Ubiquitous learning environment using android mobile application. *International Journal of Research in Engineering & Technology, Vol. 2, Issue 2, Feb 2014, 119-128*(2). <https://www.impactjournals.us/index.php/download/archives/2-77-1392383105-14.%20Eng-Ubiquitous%20Learning%20Environment%20Using%20Android-Luisa%20B.%20Aquino.pdf>
- Cengiz, S., & Peker, A. (2022). Adaptation of the academic resilience scale (ARS-30): Turkish version validity and reliability study. *Turkish Psychological Counseling and Guidance Journal, 12*(65), 215–228. <https://doi.org/10.17066/tpdrd.1138267>
- Chuang, Y.-T. (2014). Increasing learning motivation and student engagement

- through the technology-supported learning environment. *Creative Education*, Vol.05 No.23(2014) (23). https://www.scirp.org/html/2-6302320_52028.htm
- Fiorilli, C., Farina, E., Buonomo, I., Costa, S., Romano, L., Larcán, R., & Petrides, K. V. (2020). Trait emotional intelligence and school burnout: The mediating role of resilience and academic anxiety in high school. *International Journal of Environmental Research and Public Health*, 17(9), 3058. <https://doi.org/10.3390/ijerph17093058>
- Fitri, E., Ifdil, I., & Neviyarni, S. (2016). Efektivitas layanan informasi dengan menggunakan metode blended learning untuk meningkatkan motivasi belajar. *Jurnal Psikologi Pendidikan Dan Konseling: Jurnal Kajian Psikologi Pendidikan Dan Bimbingan Konseling*, 2(2), 84–92.
- Gómez-García, M., Soto-Varela, R., Morón-Marchena, J. A., & del Pino-Espejo, M. J. (2020). Using mobile devices for educational purposes in compulsory secondary education to improve student's learning achievements. *Sustainability*, 12(9), 3724.
- Hartinah, G., & Wibowo, M. E. (2015). Pengembangan model layanan informasi karir berbasis life skills untuk meningkatkan pemahaman dalam perencanaan karir siswa sma. *Jurnal Bimbingan Konseling*. <https://journal.unnes.ac.id/sju/index.php/jubk/article/view/6874>
- Howard, S., & Johnson, B. (2000). What Makes the Difference? Children and teachers talk about resilient outcomes for children "at risk." *Educational Studies*, 26(3), 321–337. <https://doi.org/10.1080/03055690050137132>
- Ke, T., & Barlas, J. (2020). Thinking about feeling: Using trait emotional intelligence in understanding the associations between early maladaptive schemas and coping styles. *Psychology and Psychotherapy: Theory, Research and Practice*, 93(1), 1–20. <https://doi.org/10.1111/papt.12202>
- Kumpfer, K. L. (2002). Factors and processes contributing to resilience. In M. D. Glantz & J. L. Johnson (Eds.), *Resilience and Development* (pp. 179–224). Kluwer Academic Publishers. https://doi.org/10.1007/0-306-47167-1_9
- Leksana, D. M., Wibowo, M. E., & Tadjri, I. (2013). Pengembangan modul bimbingan karir berbasis multimedia interaktif untuk meningkatkan kematangan karir siswa. *Jurnal Bimbingan Konseling*. <https://journal.unnes.ac.id/sju/index.php/jubk/article/view/1230>
- Luahambowo, B. (2020). Efektivitas layanan informasi menggunakan pendekatan cooperative learning tipe jigsaw untuk meningkatkan keterampilan belajar siswa. *Jurnal Education and Development*, 8(2), 236–236.
- Martin, A. J., & Marsh, H. W. (2003). *Academic resilience and the four Cs: Confidence, control, composure, and commitment*.
- Mavroveli, S., Petrides, K. V., Rieffe, C., & Bakker, F. (2007). Trait emotional intelligence, psychological well-being and peer-rated social competence in adolescence. *British Journal of Developmental Psychology*, 25(2), 263–275. <https://doi.org/10.1348/026151006X118577>
- Michaelsen, L. K., Parmelee, D. X., McMahon, K. K., & Levine, R. E. (2007). *Team-based learning for health professions education: A guide to using small groups*. Stylus Publishing LLC, Sterling, USA. <https://pdfs.semanticscholar.org/2c29/ced2c01d701d39fdf116adad073b20a7be99.pdf>
- Miravete, Á. D. F. (2018). La competencia digital del alumnado de Educación Secundaria en el marco de un proyecto educativo TIC (1: 1). *EduTec. Revista Electrónica de Tecnología Educativa*, 63, 60–72.
- Montes, A. H., & Vallejo, A. P. (2016). Efectos de un programa educativo basado en el uso de las TIC sobre el rendimiento académico

- y la motivación del alumnado en la asignatura de tecnología de educación secundaria. *Educación Xx1*, 19(2), 229–250.
- Moreira, M. A., Romero, O. C., & García, L. F. (2018). El uso escolar de las TIC desde la visión del alumnado de Educación Primaria, ESO y Bachillerato. *Educatio Siglo XXI*, 36(2 Jul-Oct), 229–254.
- Nurpratiwi, S., Amaliyah, A., & Romli, N. A. (2022). Learning by project: develop students' self-reflection and collaboration skills using team-based project. *Hayula: Indonesian Journal of Multidisciplinary Islamic Studies*, 6(2), 267–284.
- Reivich, K., & Shatte, A. (2003). *The resilience factor: 7 keys to finding your inner strength and overcoming life's hurdles*. Harmony.
- Seçer, İ., & Ulaş, S. (2020). The mediator role of academic resilience in the relationship of anxiety sensitivity, social and adaptive functioning, and school refusal with school attachment in high school students. *Frontiers in Psychology*, 11, 557. <https://doi.org/10.3389/fpsyg.2020.00557>
- Squire, K. (2009). Mobile media learning: Multiplicities of place. *On the Horizon*. <https://doi.org/10.1108/10748120910936162>
- Valk, J.-H., Rashid, A. T., & Elder, L. (2010). Using mobile phones to improve educational outcomes: An analysis of evidence from Asia. *International Review of Research in Open and Distributed Learning*, 11(1), 117–140. <https://doi.org/10.19173/irrodl.v11i1.794>
- Vallejo, A. P., & Roa, C. V. (2015). Mejoras del conocimiento de la cultura propia y del otro tras la aplicación de un programa basado en las TIC. *Revista de Investigación Educativa*, 33(1), 133–148.
- Wibowo, M. E. (2018). *Profesi konseling abad 21*. UNNES PRESS.
- Wibowo, M. E. (2019). *Konselor profesional Abad 21*. Universitas Negeri Semarang.