

The development of an inventory to measure high school students' academic resilience in online learning

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Abstract: *This study aims to develop an inventory to measure the academic resilience of high school students in online learning. The research and development framework by Borg and Gall was employed to conduct this study. Results showed that: (1) the development of this inventory is highly needed by school counselors and students due to their lack of knowledge about the classifications of academic resilience that students may exhibit during online learning; (2) the inventory prototype is designed as a systematic guide in digital format, which includes discussions on academic resilience and online learning, as well as guidance on analyzing inventory data and delivering test results; and (3) the inventory has been rated highly for its validity and practicality by expert validators. The academic resilience indicator has a Cronbach's alpha value of 0.821 for 41 items, and the online learning indicator has a Cronbach's alpha value of 0.845 for 33 items. Both values are greater than 0.70, indicating high reliability. Therefore, this inventory can be used as a testing instrument for guidance and counseling.*

Keywords: *inventory; academic resilience; online learning.*

Abstrak: Tujuan penelitian adalah membuat produk berupa inventori resiliensi akademik siswa SMA dalam mengikuti pembelajaran online. Metode yang digunakan yakni metode penelitian dan pengembangan oleh Borg dan Gall. Hasil penelitian menunjukkan bahwa (1) pengembangan inventori ini sangatlah dibutuhkan oleh guru BK dan siswa, hal tersebut ditunjukkan dengan ketidaktahuan siswa mengenai klasifikasi resiliensi akademik yang dimiliki dalam mengikuti pembelajaran online, (2) prototype inventori yang di rancang dalam bentuk sistematika panduan dan inventori ini dalam bentuk soft-file yang berisi pembahasan resiliensi akademik, pembelajaran online dan panduan hasil analisis pengolahan data inventori serta penyampaian hasil tes, (3) inventori ini memiliki nilai uji validasi ahli yang tinggi, uji kepraktisan berada pada kategori sangat praktis. Pada indikator resiliensi akademik terdapat 41 nilai alpha cornbach sebesar $0.821 > 0.70$ dan 33 item dan pada indikator pembelajaran online nilai alpha cornbach $0.845 > 0.70$ yakni reliable, maka inventori ini dapat digunakan sebagai alat tes BK.

Kata kunci: inventori; resiliensi akademik; pembelajaran online.

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INTRODUCTION

The COVID-19 pandemic is a non-natural disaster that has created numerous challenges for people from all walks of life. The Presidential Decree No. 12 Year 2020 declared the COVID-19 outbreak as a national disaster (Kumalasari & Akmal, 2020). Disasters typically have both physical and psychological impacts on individuals. During the COVID-19 pandemic, significant changes occurred in the habits of Indonesian people (Harahap, 2020). They were required to maintain physical distance, avoid crowds, wear masks, and wash their hands more frequently. The pandemic has also posed considerable challenges for the education system and all stakeholders, including educational institutions, teachers, and students (Carolan et al., 2020; Daniel, 2020).

Online learning, a new routine in education during the pandemic, faces implementation challenges in developing countries due to limited facilities and a lack of preparedness among both teachers and students (Issa & Jaaron, 2017). They need to be resilience to handle academic tasks effectively; in other words, they need academic resilience (Nisa & Muis, 2016). Academic resilience is a student's capacity for rising and recovering from, as well as adapting to difficulties. It also refers to a student's ability to develop their social and academic skills to cope with stress (Rini, 2016). Academic resilience is also defined as the ability to deal with setbacks, stress, or pressure effectively in the academic setting. In reality, however, many students are unaware of the pressure and stress they are experiencing due to their poor academic resilience (Septiani & Fitria, 2016).

The subjects of the study, students at SMA (Senior High School) Al-Azhar Mandiri Palu, are stressed about the current learning situation. They reported experiencing network-related problems, which have led to poor understanding of school lessons and resignation over the low scores they have obtained despite optimal efforts in online learning. Additionally, they feel bored due to the overwhelming sense of failure in completing their schoolwork effectively. The students find it difficult to increase their capability to meet academic demands and to be resilient in dealing with online learning challenges. The interviews with the school counselors, subject teachers, and students provided the researchers with insights into students' academic resilience (Sholih, Khairun,

& Alhakim, 2017; Uyun, 2012). According to Reivich and Shatte (Sari & Indrawati, 2016), the aspects of academic resilience are emotional regulation, impulse control, optimism, causal analysis, empathy, self-efficacy, and reaching out. However, according to Martin and Marsh (Hendriani, 2022), academic resilience consists of four dimensions, namely confidence, control, composure, and commitment (Keye & Pidgeon, 2013; Septiani & Fitria, 2016).

The advantage of inventories is their ability to identify individual characteristics across various aspects, including resilience, particularly academic resilience. The academic resilience inventory can be used to assess students' academic resilience in online learning and to serve as a testing instrument to collect comprehensive information or data alongside interviews (Afriyeni & Rahayuningsih, 2020; Zuhdi, 2019).

The inventory construct in this study is adopted from (Anwar & Saman, 2018; Cassidy, 2016), which emphasizes that academic resilience is a person's ability to increase success in education despite challenging circumstances. There are three aspects of academic resilience: (1) perseverance, (2) reflecting and adaptive help-seeking, and (3) negative affect and emotional response. Resilient individuals avoid negative responses and experience peace (low anxiety and a sense of meaning, with confidence in the purpose of life and their actions).

Based on the aforementioned phenomenon and objective conditions, the researchers were interested in developing an inventory to measure high school students' academic resilience in online learning.

METHOD

This study was conducted at SMA Al-Azhar Mandiri Palu from January to February 2022, within the framework of research and development. The primary focus of this study consisted of four aspects: (1) development, which involves creating, assessing, and revising the academic resilience: inventory in the Google Form format; (2) academic resilience; (3) inventory, and (4) online learning, which is distance learning carried out virtually using digital devices.

This research was conducted for approximately one month between January-February 2022.

The needs analysis involved 20 students as well three validators, consisting of two experts and one practitioner in guidance and counseling.

The subjects of this study involving in the validity and reliability testing were 175 students that participated in online learning. The practicality test was also performed by involving two guidance and counseling practitioners. The data were collected using needs analysis, expert validation, practicality test, and product testing (validity and reliability). The data were then analyzed using the combined quantitative and qualitative approaches (Azwar, 2012).

RESULTS AND DISCUSSION

1) The Needs of Students who Participated in Online Learning for an Academic Resilience Inventory The students reported having never seen an academic resilience inventory.

2) The Prototype of the Academic Resilience Inventory for Students in Online Learning Following the needs assessment, the researchers developed an inventory to measure high school students' academic resilience in online learning with the steps as follows:

a. Planning for the Research and Development

1) Identification of the Measurement Purpose The researchers planned for the product to develop. The inventory to measure students' academic resilience in online learning consisted of a list of statement items used as a measurement instrument. Its indicators were divided into two categories: indicators for students' academic resilience and indicators for students' experiences in online learning.

2) Operational Concept

a. Planning Stage

(1) Planning Steps

A systematic guide and an inventory are developed with clear, innovative instructions that are easily understood by school counselors, aiming to help them classify results from the inventory and also assist students in effectively completing the inventory test.

(2) Materials

The systematic guide and the academic resilience inventory include information about definitions, contributing factors, and procedures for analyzing students' academic resilience in online learning using the developed inventory.

(3) Time Allocation

This study was conducted from January to February 2022.

(4) Facilitator Team

The researchers conducted this study.

(5) Facilities and Infrastructure

This study utilized internet networks and laptops.

b. Development Stage

This stage aims to examine if the academic resilience of the students who participate in online learning can be classified. It also aims to develop the prototype of a valid, reliable, and practical inventory that is helpful and feasible for assessing students' academic resilience.

The instrument indicators are divided into two categories: the academic resilience indicators and the online learning indicators. The main foundation in developing this inventory is to find out whether high school students who take part in online learning can be classified as academic resilience. In addition, to provide a product or inventory that is valid, reliable and practical so that it is useful and feasible to use.

Furthermore, there are many kinds of resilience including online resilience, academic resilience, family resilience, early childhood education resilience, etc.

The instrument, utilizing Kuder test modeling, is initially elaborated in a table of specifications. The inventory is systematically designed and includes the following components:

(1) Front cover page,

(2) Acknowledgment section,

(3) Table of contents,

(4) Chapter I: definition of resilience, identification of students demonstrating academic resilience, strategies for building academic resilience, and factors influencing academic resilience,

(5) Chapter II: discussion on the procedure of the academic resilience inventory for high school students participating in online learning and sub-chapters covering inventory development, objectives, development theory, advantages operational definition, indicators, table of specification, of the academic resilience inventory, and instructions for use in online learning,

(6) Chapter III: instructions for analyzing data on students' academic resilience and sub-chapters covering classification, data processing techniques used by counselors to make classification, and a table of inventory item scores, and

(7) References. The systematic guide and inventory include references from books, journals, and previous research.

The table of specifications below displays the distribution of the academic resilience inventory items for students who participate in online learning.

Table 1. Academic resilience inventory

Variable	Sub-Variable	Indicator	Descriptor	Item Number		Total		
				F	UF			
Students' Academic Resilience								
High school students' academic resilience in online learning	Academic Resilience	Confidence (Self-belief)	Have belief and confidence in their ability to understand and complete school tasks well	32, 40	26, 30, 36	5		
			Face challenges head-on	23, 24	1, 31	4		
			Perform to the best of their abilities	2, 4, 12, 21	-	4		
		Control (a sense of control)	Manage and control various demands and challenges during learning	9, 10, 11, 17, 19, 27, 33, 34, 38	5, 7, 15, 16, 18, 25, 41	16		
				Composure (anxiety)	Encompass two emotions, namely anxiety and worry, during learning	20, 37	3, 29	4
		Commitment (persistence)	Have persistence in finding answers or understanding difficult and challenging problems	6, 12, 14, 28	13, 21, 35, 39	8		
		Online Learning						
		High school students' academic resilience in online learning	Online Learning	User Quality	Anxiety	10, 20	30	9
					Attitude	13, 23	7	
					Self-Efficacy	16, 26	7	
Organizational Quality	Training			11, 21	-	12		
	Management			32	-			
E-Learning System Quality	Technical			14, 31, 33, 34	2, 5, 8, 17, 27	12		
				Perceived Usefulness	15, 22		3	
				Perceived Ease of Use	12		6	
				Flexibility	25, 28		9, 18	
				Interaction	1, 29	19		

Table 2. Kuder test modeling

No	Pernyataan
1	Saya akan terus mencoba walaupun saya pernah gagal dalam pelajaran tertentu
2	Saya akan menunjukkan bahwa saya dapat memperbaiki nilai menjadi lebih baik
3	Kelemahan yang saya miliki akan memacu saya lebih giat dalam belajar
4	Meskipun sulit membagi waktu, saya akan tetap menyelesaikan tugas sekolah secara optimal
5	Untuk meningkatkan potensi diri saya, saya akan menggunakan kelebihan yang saya miliki
6	Saya berusaha untuk tidak berpikir negative terkait dengan kemampuan saya mengikuti proses belajar mengajar
7	Saya mencari dukungan dari keluarga ketika saya merasa terpuruk
8	Saya akan memberikan penghargaan untuk diri sendiri jika saya berhasil dalam kegiatan akademik
9	Saya berusaha untuk tidak panik ketika banyak tugas yang menumpuk dan mendesak untuk segera dikerjakan
10	Saya merasa tertantang jika diberikan tugas yang sulit
11	Saya akan memberikan penghargaan untuk diri sendiri jika saya berhasil dalam kegiatan akademik
12	Keberhasilan yang pernah dicapai akan memotivasi saya untuk belajar lebih giat saat ini
13	Saya yakin, kesulitan dalam kegiatan belajar/akademik yang saya alami hanyalah sementara
14	Saya akan memantau sejauh mana usaha saya dalam mendapatkan hasil belajar yang baik
15	Penilaian dan masukan dari guru yang saya dapatkan berguna untuk meningkatkan motivasi dan semangat saya dalam belajar
16	Saya akan melawan rasa takut terhadap kegagalan dalam pembelajaran
17	Saya akan mengevaluasi hasil belajar yang telah dicapai
18	Saya tidak khawatir dengan masa depan saya dan saya akan sukses
19	Saya yakin memiliki peluang yang besar untuk berprestasi di sekolah ini
20	Jika mengalami kendala dalam pembelajaran saya akan mencari bantuan dari guru di sekolah
21	Saya mencoba strategi belajar yang baru jika mengalami kesulitan
22	Saya mencoba berbagai metode/cara belajar selama mengikuti pembelajaran online
23	Saya akan menetapkan tujuan agar prestasi belajar menjadi lebih baik
24	Kelemahan yang saya miliki mempersulit saya dalam belajar
25	Saya kesulitan menemukan solusi ketika menghadapi permasalahan yang baru di pembelajaran online
26	Saya belum bisa mengoptimalkan kelebihan yang saya miliki
27	Saya menyerah jika merasa tidak yakin dengan kemampuan belajar yang saya miliki
28	Saya hanya berdiam diri (tidak mencari tahu) jika mengalami kesulitan dalam proses pembelajaran
29	Keberhasilan saya di masa lalu tidak membangkitkan motivasi belajar saya saat ini
30	Saya merasa terbebani mengikuti proses pembelajaran secara online
31	Saya tidak mau menerima feedback (penilaian dan masukan) dari guru
32	sekolah online membuat saya sulit membagi waktu
33	Saya merasa tidak akan mencapai prestasi belajar yang optimal jika saya diam saja saat tidak memahami materi yang diajarkan guru
34	Kesulitan yang saya alami dalam pembelajaran akan membuat saya kehilangan motivasi
35	Saya akan merasa tertekan jika beban tugas terlalu banyak dan waktu pengumpulan tugas berdekatan.
36	Peluang yang saya miliki untuk berprestasi di sekolah ini sangat kecil
37	Saya khawatir jika dimasa depan saya tidak bisa mendapatkan pekerjaan
38	Ketika ada masalah dalam menyelesaikan tugas sekolah, saya akan memikirkan solusi baru yang lebih efektif
39	Saya takut meminta bantuan kepada guru ketika mengalami kesulitan belajar
40	Saya malu bertanya kepada guru meskipun saya belum paham mengenai materi pelajaran
41	Sulit bagi saya untuk mengubah cara belajar

No	Statement
1	I will keep trying although I have failed in some lessons.
2	I will show that I can improve my scores.
3	My weaknesses will motivate me to study more diligently.
4	Although it is difficult to manage my time, I will try to complete school tasks optimally.
5	To improve my potential, I will use my strengths.
6	I will avoid thinking negatively about my ability to follow lessons in the classroom.
7	I will seek support from my family when I feel down.
8	I will reward myself if I succeed in my academics.
9	I will try not to panic when I have many school tasks that need to be done quickly.
10	I feel challenged when I am given a difficult task.
11	I will reward myself if I succeed in my academics.
12	Success that I have achieved before will motivate me to study harder.
13	I believe that problems in my studies are temporary.
14	I will monitor the extent of my efforts in achieving good learning outcomes.
15	Evaluation and feedback from my teachers will motivate me to study harder.
16	I will fight against my fear of failure in studying,
17	I will evaluate the learning outcomes I have achieved.
18	I don't worry about my future; I will be successful.
19	I believe I have a great opportunity to excel in school
20	If I face any problems while studying, I will seek help from my teachers at school.
21	I try new study strategies if I have difficulty
22	I try different methods/ways of learning while participating in online learning
23	I will set goals for better learning achievement.
24	My weaknesses make it difficult for me to learn.
25	I have difficulty finding solutions when facing new problems in online learning.
26	I have not been able to optimize my strengths
27	I give up if I feel unsure about my learning ability.
28	I just stay silent (don't find out) if I experience difficulties in the learning process.
29	My past successes do not motivate me to learn now.
30	I feel burdened following the online learning process
31	I don't want to receive feedback from teachers
32	Online school makes it difficult for me to manage my time
33	I feel that I will not achieve optimal learning achievement if I remain silent when I do not understand the material taught by the teacher.
34	The difficulties I experience in learning will make me lose motivation
35	I will feel pressured if the assignment load is too much and the time for submitting the assignment is close together.
36	I have very little chance of doing well at this school.
37	I am worried that I will not be able to get a job in the future.
38	When there is a problem in completing school assignments, I will think of a new, more effective solution.
39	I am afraid to ask the teacher for help when I have learning difficulties
40	I am ashamed to ask the teacher even if I don't understand the subject matter
41	It is difficult for me to change my way of studying

Table 3. Academic resilience inventory

No	Pernyataan
1	Saya tidak khawatir menjalankan pembelajaran online dengan media belajar yang digunakan
2	Saya tidak panik kalau ada tugas/ujian menggunakan media belajar online
3	Pembelajaran online memudahkan saya dalam persekolahan saat ini
4	Saya menikmati pembelajaran online dengan media pembelajaran apapun
5	Saya merasa yakin bahwa saya mudah beradaptasi menggunakan media pembelajaran online yang disarankan guru untuk persekolahan
6	Saya merasa yakin pembelajaran online tidak akan mempengaruhi nilai sekolah saya
7	Saya merasa mudah menjalani pembelajaranonline setelah diberi pengarahan cara penggunaan aplikasi yang digunakan
8	Saya merasa lebih paham menggunakan aplikasi belajar online setelah diberikan pelatihan atau simulasi
9	Saya merasa pembelajaran online efisien karena lebih menghemat waktu saya
10	Saya merasa nyaman dengan suasana pembelajaran online yang diciptakan oleh guru
11	Menurut saya, guru sudah berkompeten dalam memberikan pembelajaran online
12	Saya mudah mendapatkan akses internet
13	Sinyal di tempat saya melakukan pembelajaran online stabil
14	Saya menganggap aplikasi pembelajaran online yang saya gunakan akan terus mendukung persekolahan saya untuk selanjutnya
15	Saya merasa lebih menguasai media pembelajaran online dibanding sebelumnya
16	Menurut saya, ada peningkatan pengetahuan dan kemampuan setelah menggunakan media pembelajaran online
17	Saya merasa mudah menggunakan aplikasi pembelajaran online yang saya gunakan saat ini
18	Menurut saya, pembelajaran online lebih menyenangkan karena lebih fleksibel
19	Saya bertanya atau memberi komentar kepada teman yang sedang persentasi
20	Saya terlibat aktif pada saat guru mengajar dengan menjawab di forum chat atau menghidupkan kamera
21	Ketika saya kurang mengerti dengan media belajar online yang digunakan untuk tugas/ujian, saya menjadi khawatir dengan nilai saya
22	Saya merasa kurang mahir/kurang mengerti dalam menggunakan media yang digunakan untuk pembelajaran online
23	Menurut saya, pembelajaran online mempersulit saya dalam kegiatan belajar/akademik
24	Saya merasa penjelasan penggunaan aplikasi pembelajaran online yang diberikan kurang membantu saya dalam mengikuti pembelajaran online
25	Saya merasa belum maksimal menyerap materi yang disampaikan guru melalui media online
26	Saya kesulitan untuk mendapatkan fasilitas utama untuk pembelajaran online
27	Saya kesulitan membeli kuota internet
28	Sinyal di tempat saya melakukan pembelajaran online tidak stabil
29	Saya merasa kemampuan dan pengetahuan saya tidak meningkat meskipun menggunakan media pembelajaran online
30	Saya kesulitan menggunakan aplikasi pembelajaran online dan lebih memilih tidak akan menggunakannya lagi
31	Saya merasa pembelajaran online lebih banyak membuang waktu saya
32	Saya merasa sulit mengerjakan hal lain karena waktu saya sudah tersita dengan sekolah
33	Saya merasa kurang mendapatkan perhatian dengan guru pada pembelajaran online ini

No	Statement
1	I don't worry about doing online learning with the media used.
2	I don't panic when there is a task/exam that requires a specific media.
3	Online learning makes it easy to study for school.
4	I enjoy online learning with any media.
5	I believe that I can easily adapt to the online learning media suggested by my teachers.
6	I believe online learning will not affect my scores.
7	I find it easy to do online learning after I am given directions of how to use the application.
8	I understand how to use an online learning application better after being given an explanation or simulation
9	I find online learning efficient because I can save my time.
10	I feel comfortable with the atmosphere of online learning created by my teachers.
11	I feel that my teachers are competent in conducting online learning.
12	I have easy access to the internet.
13	The network signal in my area is stable for online learning.
14	I feel that the online learning application that I use will keep supporting my school in online learning.
15	I feel more competent in using the media for online learning than before.
16	I feel that I have improved my knowledge and skills after using the media for online learning.
17	I find it easy to use the current media for online learning.
18	I feel that online learning is more fun because it is more flexible.
19	I ask questions or give comments to my friends when they are delivering presentations.
20	I actively participate by answering questions in the chat forum or activating my camera when my teacher is teaching.
21	When I don't fully understand the media used to complete a task/exam, I am worried about my score.
22	I don't think I am good at using the media for online learning.
23	I think that online learning makes it difficult for me to study.
24	I don't think the explanation about how to use the online learning application helps me participate in online learning.
25	I don't think I have optimally absorbed the lessons that my teachers delivered online.
26	I find it difficult to get the main facilities for online learning.
27	I find it difficult to afford internet data packages
28	The network signal in my area is not stable for online learning.
29	I don't think my knowledge and skills have improved even though I use the online learning media.
30	I find it difficult to use the online learning media and don't prefer to use it again.
31	I think online learning waste more time.
32	I find it difficult to do other tasks because school tasks take up my time.
33	I feel I receive less attention from my teachers during online learning.

c. Scaling and selecting stimulus formats

The inventory consists of statements that reflect the behaviors associated with the attributes in question, rather than directly measuring the attributes themselves. Therefore, Kuder scale modeling is used to measure high school students' academic resilience in online learning. Each statement item provides two answer options: Yes (+) and No (-).

3) Results of Expert Validation on the Academic Resilience Inventory for High School Students in Online Learning

a. Results of Expert Validation

Based on the results of expert validation performed by two guidance and counseling lecturers and a guidance and counseling practitioner, the inventory received an average rating of 3.74 (high). This indicates that the inventory is a valid instrument for measuring high school students' academic resilience in online learning.

b. Results of Design Refinement

The first revision was performed based on the results of expert validation. The inventory was subsequently refined several times following the expert reviews.

4) Results of Validity and Reliability Testing on the Academic Resilience Inventory for High School Students in Online Learning

a. Inventory Items

The following are the items tested on the subjects of the study.

Table of the Academic Resilience Inventory for High School Students in Online Learning

b. Product Testing

5) Results of Validity Testing on the Academic Resilience Inventory for High School Students in Online Learning

Product testing involved 175 high school students who participated in online learning and

its results were analyzed with the use of SPSS 24.0 statistical software for Windows. Product testing was conducted three times. In the third testing, 74 statement items were found to be valid and representative of all the defined indicators.

Results of Reliability Testing on the Academic Resilience Inventory for High School Students in Online Learning

Based on the results of the total Pearson item correlation test on the academic resilience inventory indicators, 41 items were tested for reliability using Cronbach's alpha. The reliability coefficient results are as follows:

Table 4. Results of Reliability Testing on the Academic Resilience Inventory

Cronbach's Alpha	N of Items
0.821	41

The results of reliability testing revealed a Cronbach's alpha value of 0.821, which is greater than 0.70. This indicates that the academic resilience inventory is reliable and consistent.

However, based on the results of the total

Pearson item correlation test on the online learning inventory indicators, 33 items were tested for reliability using Cronbach's alpha. The reliability coefficient results are as follows:

Table 5. Results of Reliability Testing on the Academic Resilience Inventory

Cronbach's Alpha	N of Items
0.841	33

The results of reliability testing revealed a Cronbach's alpha value of 0.845, which is greater than 0.70. This indicates that the online learning inventory is reliable and consistent.

6) Results of Practicality Testing

The prototype of the inventory was tested by two school counselors for its practicality, which aims to discover the practicality level of the developed product. The results revealed an average score of 4.5, indicating that the inventory is very practical.

1. Description of the Needs of High School Students for the Academic Resilience Inventory in Online Learning

Based on the results of interviews with school counselors, direct observations, and need assessment questionnaires, an academic resilience inventory in online learning was deemed necessary for students to determine their classifications of academic resilience. The needs analysis revealed that 23.5% of respondents (Strongly Don't Understand) lacked knowledge about the inventory.

Therefore, this inventory was needed to measure students' academic resilience in online

learning. These results reflect the conditions of high school students who engaged in online learning due to the COVID-19 pandemic. This pandemic has led to the widespread adoption of online learning (Anshori, 2020).

2. Prototype of the academic resilience inventory for high school students in online learning

As initially planned, an inventory was developed to measure high school students' academic resilience in the form of a systematic guide and tested online on students using Google Forms. The validation results showed that the content of this inventory prototype received an average score of 3.47 (high).

The systematic guide and academic resilience inventory are designed in a PDF format accessible on both cellphones and laptops, allowing for online completion via Google Forms. This setup enables test subjects to take the assessment from any location.

3. Expert Validation on the Academic Resilience Inventory for High School Students in Online Learning

The validation was conducted to collect

feedback from two guidance and counseling experts and one guidance and counseling practitioner for the inventory improvements. The experts, who are the lecturers at the State University of Makassar, and the practitioner from a senior high school in Palu city rated the validity of the inventory's design and content at 93.5%. These results indicate a strong level of validity for the inventory.

4. Validity and Reliability of the Academic Resilience Inventory for High School Students in Online Learning

a. Validity of the Inventory Items

Validity testing was carried out three times, involving 175 students. By the third iteration, all items were deemed valid. The Pearson item correlation test results encompassed all 74 items, with 41 items pertaining to academic resilience indicators and 33 items focusing on online learning indicators.

b. Reliability of the Inventory

The reliability testing results revealed a Cronbach's alpha value of 0.821 for the academic resilience inventory and 0.845 for the online learning inventory. Since these values are greater than 0.70, the academic resilience and online learning inventory were deemed reliable.

5. Practicality of the Academic Resilience Inventory for High School Students in Online Learning

The practicality of the inventory was scored 4.5 (practical) by two school counselors. The practicality testing was also administered on the academic resilience inventory by involving 20 students. The inventory was scored 4.8, indicating that the inventory is practical. These results suggest that the academic resilience inventory developed by the researchers is valid, reliable, and practical for measuring high school students' academic resilience in online learning (Ekasari & Andriyani, 2013; Kumalasari & Akmal, 2020).

CONCLUSION AND SUGGESTIONS

Based on the results of the research, it can be concluded that:

1. The academic resilience inventory is highly needed by the school counselors and high school students who engage in online learning.
2. The prototype of the systematic guide and academic resilience inventory is developed as a soft copy, which includes explanations about high school students' academic resilience in online learning, instructions for

completing the inventory, and techniques for analyzing the students' academic resilience data in online learning.

3. The validators, consisting of two experts and one practitioner in the field of guidance and counseling, rated the inventory at 3.4 on a scale where 4 is the highest score possible.
4. A total of 74 inventory items were tested for their validity using the total Pearson correlation test. The items consisted of 41 items of the academic resilience indicators and 33 items of the online learning indicators. It was found that none of the items were invalidated, indicating their validity. The inventory items were also tested for the reliability using Cronbach's alpha. The academic resilience items received a value of 0.821 and the online learning items received a value of 0.845; all of which are greater than 0.70, confirming that the inventory is reliable.
5. The practicality testing conducted by two school counselors resulted in a score of 4.5, indicating that the inventory is practical. Additionally, the practicality testing involving 20 students also revealed that the inventory is practical, with a score of 4.8. Therefore, the inventory is considered practical for assessing high school students' academic resilience in online learning.

These results suggest that the developed inventory is feasible for use and beneficial for various stakeholders, particularly in the fields of science, school counseling, and future research. More detailed implications are as follows:

1. For the expansion of knowledge. As the results of the study suggest, the developed inventory is practical and feasible to be implemented in schools to measure high school students' academic resilience in online learning. This inventory may contribute to the scientific field of guidance and counseling.
2. For school counselors. The inventory is created based on students' problems. Thus, school counselors can use it to help students identify their academic resilience in online learning.
3. For future researchers. Future researchers who intend to advance this research should focus on testing its effectiveness. They can extend the study to a larger and more diverse group of subjects with varying backgrounds or characteristics. Additionally, there are numerous aspects that still need to be discussed and improved. This is to ensure the

enhancement and perfection of the products developed from this inventory for future researchers.

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