Learning Agility: Validity of Measurement Tools in the Context of Higher Education In Indonesia

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Abstract
Today's students are faced with more significant challenges than previous generations. For this reason, learning agility is required to allow students to adapt and face the challenges. Unfortunately, no measurement tool suits the student setting. Thus, this study aims to measure the validity of learning agility measurement tools for college students. Several steps were taken to adapt the measuring instrument. The first stage in adaptation is the forward translation, the second stage is a synthesis of the translations, the third stage is back translation, the fourth stage is the expert committee, and the final stage of the adaptation process is the pretest. The measurement uses the EFA method by taking 234 student respondents. The results of the EFA analysis show that the learning agility measuring instrument meets the validity rules and is unidimensional. The results of this study are expected to contribute to the need for a good Indonesian learning agility measurement tool.
Keywords: Higher Education, Learning Agility, Measurement Tools, Student, Validity

Introduction
Higher education is increasingly characterized by rapid technological advancements, globalization, and evolving workforce demands. Students often face various pressures, such as high academic pressure, which also hurts them. They usually feel anxious and afraid of failing to achieve the expected achievements to achieve good academic results (Herianty et al., 2024; Putri et al., 2024). In addition, current students are also under pressure in terms of social expectations and academic achievement. They struggle with failure and fear a reduced GPA if they cannot complete the task. As a result, they may have difficulty dealing with academic failures, such as poor grades or missing courses, leading to decreased motivation to learn (Najuba & Khoiruddin, 2023; Putri et al., 2024). Learning agility enables students to respond effectively to new academic and real-world problems, sustain engagement and productivity despite academic fatigue or burnout, and foster innovation and contribute to sustainable solutions.

Students with information skills can effectively locate, evaluate, and utilize the sources of information. Information skills and learning agility are essential in today's fast-paced, information-driven world. They enable people and organisations to solve issues efficiently, adjust to changing circumstances, and make well-informed decisions. So, swiftly adjusting to different responsibilities, tools, and settings is crucial in today's dynamic work world (Ajayi & Udeh,2024; Ali et al., 2024). Students with high learning agility are more likely to remain engaged and productive in academic settings, demonstrate resilience and adaptability in the face of change and drive innovation and contribute to sustainable academic and professional practices.

Employers seek graduates who can continuously learn and adapt, not just those with technical knowledge. Learning agility helps students navigate uncertain job markets, embrace lifelong learning and remain relevant and resilient in dynamic industries. Learning agility is an essential skill for higher education students, equipping them to thrive in uncertain, complex, and rapidly changing environments. By fostering learning agility, institutions prepare students not only for academic success but also for long-term career resilience and leadership in a dynamic world.

Learning resilience, or what is now often called learning agility, is needed to overcome this. Learning agility in students allows them to adapt and create new values in ambiguous situations to be better prepared to face the future. Learning agility research contributes to developing new research, as research on learning agility also contributes to future education (Menon & Suresh, 2021). The ability to learn quickly and adapt to new situations is what allows for sustainable development in the long run. Hence, learning agility emphasises adaptability, openness to feedback, and applying information in different settings. Acquiring agility is more generalised and advantageous to everyone, whereas creativity is more situational and niche-specific. Thus, learning agility is generally regarded as more universally vital (Ali et al., 2024).

Learning agility is a concept that encompasses the learning competency of talents who will lead changes in the future society. "Learning agility refers to the willingness and ability to learn new competencies required in performing tasks experienced for the first time" (Lombardo & Eichinger, 2000). Previous studies have reported that such learning agility is closely related to the leadership of the CEO or organizational members in the context of corporate success (Burke, 2018; Im et al., 2017; Lombardo & Eichinger, 2000). Connolly (2001; Sung, 2021) described learning agility as a significant variable that explains organizational performance and promotion potential, independent of intellectual ability or personality factors such as IQ. Scholars who study learning agility have found that people with high learning agility are (1) well aware of their strengths and weaknesses, (2) actively acting for self-development, (3) constantly taking on new challenges, (4) solicit feedback from others, (5) learn through introspection, and (6) produce practical and practical outcomes (London & Maurer, 2004; McCaulley, 2001). This concept of learning agility can be understood as starting from the business management aspect to identify and develop a core talent from an organizational point of view. Sung et al. (2016) interpreted learning agility as the core competency of university students required to prepare for an uncertain future and lead an active life in the present. They reported learning agility's characteristics as a lifelong learning competency sub-factor. They defined learning agility as the ability to learn based on

intellectual curiosity in new experiences quickly. They suggested sub-competences of learning agility, such as change acceptability, intellectual curiosity, and learning initiative.

Learning agility is the willingness and ability to learn from experience and then apply that learning to perform successfully in new situations and conditions (Lombardo & Eichinger, 2000). Learning agility is also defined as a willingness and ability to learn from experience and then apply that learning to succeed in first-time work conditions related to the work being done (De Meuse, 2017). In addition, it is also said that learning agility is the willingness and ability of individuals to engage in active learning to adapt activity opportunities from experience and apply that learning to perform successfully in new and changing situations and conditions (Gravett & Caldwell, 2016). Learning agility focuses on human behavior, higher-order cognitive processing, and selective transfer of lessons learned in one setting and applying them in a uniquely different one (De Meuse et al., 2008), including experimentation, self-reflection, leveraging individual strengths, continuous improvement, attention, and mental experiences gained in one situation to different challenges elsewhere (Wang & Beier, 2012). Learning agility is a concept that connects human behavior, cognitive processes, and social learning to learn from experience so that individuals can consistently increase their potential, ability, and flexibility and learn new things.

The study of learning agility is highly significant because it addresses the core challenge of thriving in an unpredictable, fast-changing world especially in education field. By emphasizing its transformative impact on individuals, organizations, and society, and by focusing research on practical development and measurable outcomes, the significance of learning agility as a field of study can be further elevated and widely recognized.

Learning agility measurement tools have gone through several developments. Lombardo & Eichinger (2000) developed learning agility based on four dimensions: people, results, mental, and change agility. All of these dimensions need to be mastered by individuals to assess their level of competence in receiving and programming new information, responding to changes, and succeeding in a changing educational environment (Wardhani et al., 2022). Sura et al. (2024) developed a learning agility measurement tool from Burke (2018), which explains that learning agility is a set of behaviors that can be developed which requires an examination of individual personal characteristics before learning agility as well as social contextual elements that can increase or decrease an individual's ability to act agilely. The measurement developed by Burke (2018 is known as BLAI (Burke Learning Agility Inventory). The dimensions developed in the measurement are 1) the flexibility dimension, the individual's ability to be open to new ideas and propose new solutions; 2) the speed dimension, the individual's ability to adapt quickly to changing situations and respond flexibly to new information received; 3) the experimentation dimension, the individual's ability to try new behaviors, such as approaches or ideas, to determine which ideas or approaches are practical. 4) the performance risk-taking dimension, which is the individual's ability to seek out new activities, such as tasks, assignments, or roles, that provide opportunities to be tested and challenged; 5) the interpersonal risk-taking dimension, which is the individual's ability to deal with differences with others in ways that lead to learning and change; 6) the collaboration dimension, which is the individual's ability to find ways to cooperate with others that result in unique opportunities to learn; 7) the information-gathering dimension, which is the individual's ability to find ways to cooperate with others that result in unique opportunities

to learn. The information-gathering dimension, which is the individual's ability to use a variety of methods to stay abreast of developments in his or her area of expertise; 8) The feedback-seeking dimension, which is the individual's ability to solicit feedback from others regarding his or her ideas and overall performance; 9) The reflection dimension, which is the individual's ability to slow down, evaluate his or her performance, and consider ways to become more effective. Meanwhile, the learning agility measurement tool used in this study refers to Gravett & Caldwell's (2016) construct, which consists of 5 items that cover the overall meaning of learning agility (Kim et al., 2018).

In the context of university students, a study showed the effects of learning agility on the characteristics of university students in the form of the highest intellectual curiosity, followed by learning initiative and ability to accept change (Jang et al., 2015). Learning agility measurement is an area requiring further research. Multiple conceptualizations of learning agility exist, making the actual structure of learning agility unclear. The learning agility measures in the academic literature deviate from learning agility's traditional conceptualization and require further validation and convergent validity studies. Commercial measures of learning agility exist, but their development procedures are not subjected to peer review. They are not widely used in academic research, given the cost associated with their use (Smith & Watkins, 2024).

In Indonesia alone, a journal measures the validity of the learning agility measurement tool and then translates it into Indonesian (Wardhani et al., 2022). However, the learning agility measurement tool was given to employees. Meanwhile, this study measures learning agility in college students. Measurement of the validity of the learning agility measuring instrument was also carried out by Sura et al. (2024), who focused on employees of the millennial generation. Learning agility is a powerful asset for higher education students, underpinning their ability to engage deeply with their studies, adapt to new learning environments, innovate, and build essential skills for lifelong success. By fostering learning agility through supportive academic environments, universities can better prepare students to thrive in both academic and professional contexts. As Smith & Watkins (2024) study, learning agility is prevalently used in organizational settings and is receiving increased scholarly attention. Various conceptualizations and measurement tools exist; how these theories and measures relate and differ is unclear. This paper contributes to practice by providing practical guidelines and limitations for measuring learning agility, especially for students, because students need to adapt to rapid changes in the modern world. Therefore, the implications of this study are expected to help education practitioners measure students' learning agility to evaluate their teaching approaches.

Methodology
This study is a quantitative study that measures learning agility using a scale. Several steps were taken to adapt the measuring instrument, as presented by Beaton et al. (2000). The first stage in adaptation is the forward translation. The second stage is a synthesis of the translations; The two translators and a recording observer sit down to synthesize the results. The third stage is back translation; a translator then translates the questionnaire back into the original language. This is a validity-checking process to ensure that the translated version reflects the duplicate item content as the original version. The fourth stage is the expert committee. The expert committee's role is to consolidate all the questionnaire versions and

develop what would be considered the preferred version for field testing. The fifth stage is a test of the pre-final version. The final stage of the adaptation process is the pretest. This field test of the new questionnaire seeks to use the pre-final version on subjects or patients from the target setting. The sixth stage is the final stage. The final stage in the adaptation process is submitting all the reports and forms to the instrument developer or the committee to keep track of the translated version (Beaton et al., 2000).

The subjects in this study were 234 university students, consisting of 37 male students and 197 female students. Most subjects are between 16 and 20 years old and are currently being studied in semesters 1 and 3. The details in Table 1 below:

Table 1
Demographic Data

		Frequencies	Percentage
Gender	Male	37	15,81%
	Female	197	84,19%
Age	16-20	200	85,47%
	21-25	34	14,53%
Semester	1-3	228	97,44%
	4-7	6	2,56%
Living in	Boarding house	184	78,63%
	Family	50	21,37%

Instrument
The learning agility measurement tool refers to Gravett & Caldwell (2016), which consists of 5 items. The five items are: New experiences are learning opportunities for me; I easily remember new information; I am optimistic that I can learn new information; I enjoy researching new information; I look for ways to use new knowledge. After translating to Indonesian, the Cronbach's alpha coefficient is 0.871. The results of the descriptive analysis can be seen in Table 2 below

Table 2
The Description of Learning Agility Construct

	Statistic	
	Total Happiness at Work	
N	Valid	234
	Missing	0
Mean		31,1197
Std. Deviation		5,10770
Skewness		-0.755
Std. Error of Skewness		0.159
Kurtosis		.444
Std. Error of Kurtosis		.317

Data Analysis
a.   Construct validity

This validity relates to whether the research tools have been developed based on appropriate and relevant theoretical frameworks (constructs). Questionnaires with high construct validity are always based on experts' definitions or limitations of the concept, not dictionary definitions. The researcher can develop appropriate statement items and/or questions based on the existing boundaries. With SPSS, questionnaires and/or test items must be measured using factor analysis (Budiastuti & Bandur, 2018).

b.   Reliability test

Generically, reliability is the consistency of a research method and results (Bandur, 2013; Budiastuti & Bandur, 2018). However, it is explained explicitly by several statisticians that reliability is the consistency of the methods, conditions, and results (Best & Kahn, 1998; Manning & Don Munro, 2006; Pallant, 2005; Wiersma & Jurs, 2005; Budiastuti & Bandur, 2018). These experts' definitions explain the notion of reliability as the consistency of a research result using various research methods under different conditions (place and time). In particular, the concept of reliability refers to the consistency of the score results on the items in the questionnaire, so that the reliability test tests the accuracy of the measurement scales of the research instrument (Budiastuti & Bandur, 2018). The rule of thumb is used to assess the reliability of a construct, and the composite reliability value must be greater than 0.70. However, using Cronbach's alpha to test the reliability of a construct will give a lower value (underestimate), so it is more advisable to use composite reliability (Ghozali & Latan; Hamid & Anwar, 2019; Sura et al., 2024).

Findings and Discussion

The Exploratory Factor Analysis measures the dimensionality of the Learning Agility Scale. The overall analysis results can be seen in the tables below

Table 3
Kaiser-Meyer Olkin and Bartlett's sphericity test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.826
Bartlett's Test of Sphericity	Approx. Chi-Square	595.495
	df	10
	Sig.	0.000

Table 4
Total Variance Explained

Component	Initial Eigenvalues			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.309	66.186	66.186	3.309	66.186	66.186
2	0.625	12.490	78.676			
3	0.532	10.635	89.312			
4	0.319	6.382	95.694			
5	0.215	4.306	100.000			

Extraction Method: Principal Component Analysis.

Table 5
Reliability

Components	Number of Items	Reliability
1	1, 2, 3, 4, 5	0,871

Table 6
Rotated Component Matrix

Rotated Component Matrix

	Component
	1
1	0.713
2	0.793
3	0.898
4	0.864
5	0.788

Extraction Method: Principal Component Analysis.

This study aims to test the learning agility measurement tool translated into Indonesian. This research was conducted in several stages, the first of which was translation. The researcher translated the measuring instrument from English to Indonesian at this stage. Linguists were then engaged to ensure that the translation was appropriate. The second stage involved experts in the field of psychology to ensure that the measuring instrument was based on the existing constructs and could measure the participants' ability to understand and comprehend the constructs. The third stage is back translation so that it can be ensured that the measuring instrument that has been translated is not far from the meaning of the original measuring instrument. The stages involved two linguists and two experts in psychology. These experts are very important in adapting the measuring instrument, as previously stated by Beaton et al. (2000).

Furthermore, the ready measuring instrument is given to students to fill in. The results of the data are processed and then analyzed. The test used exploratory factor analysis or EFA (Vu et al., 2017). The EFA procedure is conducted to determine the scale's dimensionality and identify items with poor performance that are not to be used (Samuel, 2017). Before starting EFA, the Kaiser Meyer Olkin (KMO) test was conducted to ensure an adequate sample size, as stated in Table 3. The overall KMO test results showed a KMO = 0.826, which means the sample is considered good (Hutcheson & Sofroniou, 1999). Furthermore, Bartlett's test was conducted to assess a correlation between variables. Bartlett's test shows significant results ($X2 = 595.495$, $p < 0.001$), so that the correlation between variables can be said to meet the assumptions (Field, 2013). In Table 4, there are five components of one Learning Agility variable. Overall, the total variance score of the five components is 100%.

Exploratory Factor Analysis (EFA) findings indicate that the measurement instrument is unidimensional, meaning all items align with a single underlying construct. This unidimensionality supports the theoretical framework of Gravett and Caldwell (2016) by ensuring that the instrument measures a single concept with internal consistency. This differs from other studies that describe Learning Agility, such as Burke's (2018) development of a Learning Agility measurement tool consisting of 9 aspects, Lombardo & Eichinger's (2000) with four aspects, and Wardhani et al.'s (2022), which contained 25 items with four components. The reliability test results in Table 5 also show a good score of 0.871, which means that after translation, this measuring instrument can still measure learning agility appropriately. Table 6 proves that the items are on one factor with a high correlation value above 0.7.

The results above show that this measuring instrument can be one of the references for students using learning agility measuring instruments. Learning agility is important for students when facing today's various challenges. Thus, agile learners tend to be eager to learn, experiment with assumptions, and identify lessons learned to improve their ability to cope with challenges. Moreover, learning agility will be needed to cope with challenges in college or future workplaces (Kim et al., 2018).

Based on a previous study by Jeon et al. (2022), it is necessary to develop various educational strategies to improve the learning agility of undergraduate students, who represent an important human resource for university education. To improve learning agility, it is necessary to increase students' ability to develop learning agility by providing various university curriculum experiences. The result of Panal's study (2024) is aligned with the statement that individuals with learning agility are more flexible, comfortable, and calm when facing difficulties than other colleagues (Mitchinson & Morris, 2012). They are individuals willing to have challenging work experiences that can improve themselves and do the necessary learning (Mitchinson & Morris, 2012). Someone agile in learning will be able to deal with new changes smoothly, which makes them able to survive in their work (Tripathi, Srivastava, & Sankaran, 2020; Panal, 2024), thus pushing that individual to exert their best effort at work (Saputra, Abdinagoro, Sri, Kuncoro, & Engkos, 2018). We define learning agility as a key indicator of future leadership success and review its theoretical background (Yadav & Dixit, 2017). Learning agility refers to a person's ability and willingness to learn from experience and apply the lessons of experience to improve future performance (De Meuse, Guangrong, & Hallenbeck, 2010).

Furthermore, suggestions for improvement from the research results can be used to measure Confirmatory Factor Analysis to further see the instrument's validity, especially in the results that lead to unidimensionality.

Conclusion

This study aims to validate the scale of learning agility in Bahasa Indonesia. Based on the result of the analysis, it can be concluded that the scale is valid and reliable. In other words, this study's results show evidence of reasonable and adequate validity and reliability. However, it can still be improved by making certain modifications to be a better measurement tool when applied to look at the phenomenon of learning agility.

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