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Dimensions Formation and Instrument Items Development: The Role of Student and The Role of Educator based on *Al-Ghazali's* Educational Approach

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Abstract

The study aimed to develop an instrument to assess students' perceptions of their roles and educators' roles throughout e-learning sessions. The research employed a descriptive survey approach, with data collected in two phases: Phase I - Design and Construction and Phase II - Instrument Validation. The data were obtained from analyzing relevant literature based on theories and models.

Additionally, feedback from 5 experts was gathered for face validity. The pilot test involved 35 University Kebangsaan Malaysia undergraduate students. The Cronbach's alpha reliability coefficient for the Role of Educator (ROE) was found to be .784; for the Role of Student (ROS), it was calculated as .781. The developed instrument consisted of 2 dimensions: ROS and ROE, each comprising seven sub-dimensions and a total of 22 items based on *Al-Ghazali's* educational approach. The study's findings demonstrated that the instrument exhibited high validity and reliability, making it suitable for the actual study. In conclusion,

the instrument could transform teaching and learning processes, promote student engagement and achievement, and foster a culture of continuous improvement in education.

Keywords: *Al-Ghazali*- Educators Role, E-learning, Instruments, Students' Role

1 Introduction

The outbreak of the COVID-19 pandemic in Wuhan at the end of 2019 startled the world of the education sector (Shereen et al., 2020). To stop the spread of COVID-19, the Malaysian government issued the Movement Control Order (MCO) in March 2020. To prevent the COVID-19 pandemic, governments worldwide, including Malaysia's Ministry of Higher Education (MOHE), have also issued orders to shut public schools and higher education institutions as an emergency measure to prevent the spread of the infection. Based on the literature, when MCO was imposed, numerous institutions and colleges were pressured to make quick modifications to switch to online instruction (Choong, 2020). Consequently, universities resorted to continuing lectures through online learning, and no more physical classes were permitted in April 2020 (Chung et al., 2020). This sudden appearance and existence of the pandemic resulted in the unpreparedness of the educational system to face e-learning in full on the part of the university, the instructors, and the students themselves. This unpreparedness distracts the teaching and learning process and their commitment. There are a few difficulties for students and lecturers in this unexpected shift from face-to-face to online learning. This unwillingness of diverse parties to implement causes problems and results in a shift in commitment to the institution. According to Aboagye's research, students were not prepared to face e-learning (Aboagye et al., 2021).

1. 2 Literature Review

In a study conducted by Sá and Serpa, the issues related to online learning are social isolation, problems with face-to-face interaction between teacher and student, connectivity issues, and a few others (Sá & Serpa, 2020). Noordin et al.'s research shows that general subject instructors at community colleges face numerous problems when teaching online during the MCO (Noordin et al., 2020). This is supported by Langford's mention that in Norway, it was found that the COVID-19 pandemic presents a challenge to teachers whose student feedback on the delivery of assignments is disappointing (Langford & Damsa, 2020). In addition, online learning also requires a lot of time, besides the lack of facilities that make practical activities and research in the laboratory difficult. The problem of a weak internet signal makes it difficult for teachers to teach because the Zoom application causes the sound to break, the video to be stuck, or there is a pause between the two and the effectiveness of delivery and instruction.

However, there are several obstacles to supporting the implementation of the teaching and learning process online, such as a lack of equipment facilities and internet network connections (Doman, 2017). As proven by Wei Boon Quah's research, educators lacking full ICT facilities such as cameras, videos, microphones, and speakers make it difficult for students to concentrate due to technical issues (Boon, 2020). Zhang et al. also found problems, such as usage skills and teachers' knowledge of technology and online education (Zhang et al., 2020). In addition, teachers find it challenging to adapt to innovations and improve current pedagogies and practices since they are attached to existing ones. Adopting technology has disrupted traditional

teaching practices as educators often find it difficult to adjust and connect their pedagogy with technology (Sulisworo, 2013). They stated that changes that occur indirectly necessitate educators to master knowledge of this technology.

Likewise, online learning does not work properly due to instructors' inadequate expertise in ICT. However, transitioning from face-to-face learning methods in the classroom to an online learning platform presents challenges and pressures teachers and lecturers to execute them quickly during the MCO period (Saw, 2020). Nevertheless, technological changes in teaching have changed teachers' pedagogic methods, simplifying and speeding up the teaching process and encouraging students to get used to self-learning (Damit & Omar, 2019). However, according to Noriyani, a teacher must understand minimum ICT knowledge to utilize in teaching and learning and be compatible with the subjects taught (Damit & Omar, 2019). Since virtual education has been applied in teaching and current learning, it demands that teachers or lecturers equip themselves with the ability to master knowledge related to 'e-learning' so that the education process can continue to be implemented (Razali, 2021). Based on Halina et al. research, e-learning challenges teachers and students to change teaching and learning methods so that the teaching and learning process can continue (Noordin et al., 2020).

Moreover, the success of an e-learning system depends on students' willingness and acceptance to use this system (Almaiah et al., 2020). In addition, the student's level of self-awareness, personality, and performance are all factors that influence commitment (Anghelache, 2013). With such a situation, we can conclude that students need to show their role and responsibility in undergoing e-learning because a student needs to constantly add knowledge and exploration to learning methods coupled with those in a technology-savvy era.

According to the policy outlined by the Malaysian Ministry of Education (MOE), which is emphasized in Wave 3 of the Malaysian Education Development Plan (PPPM) 2013-2025 regarding the concept of teacher leadership, teachers need to be able to take on the role of being teacher leaders and take responsibility to meet the standards of their teaching profession (Karmani, 2016). As a result, the researchers were motivated to develop the role of student (ROS) and the role of educator (ROE) instrument, comprising constructs and items intended to gauge students' perceptions of their own role and that of the teacher. Consequently, the researcher seized this opportunity to meticulously construct and validate the ROS and the ROE instrument, specifically tailored to assess students' perceptions of these roles within the context of e-learning sessions (Mufid, 2019).

Muhammad Al-Ghazali is a contemporary Islamic thinker, prolific preacher, academician, and writer. His rational and contextual thinking has succeeded in breaking the stagnation of thinking of the Muslim community, which at that time was shackled by the attitude of taqlid and the prolonged practice of heresy. The role of teachers and instructors in providing guidance and support to students in their learning process can be seen as similar to the role of religious scholars in guiding their followers (Soussi, 2016). Therefore, *Al-Ghazali's* emphasis on the importance of knowledge and the role of teachers in guiding students' learning can be relevant to distance education. Al-Ghazali's educational approach was used to develop an instrument to assess students' perceptions of their roles and educators' roles throughout e-learning sessions. The role of teachers and instructors in providing guidance and support to students in their learning process can be seen as similar to the role of religious scholars in providing guidance to their followers. Therefore, Al-Ghazali's emphasis on the importance of knowledge and the

role of teachers in guiding students' learning can be relevant to distance education. Al-Ghazali's educational approach emphasizes the importance of the teacher's role in guiding students' learning, which is also applicable to e-learning.

Thus, Al-Ghazali's educational approach can help improve commitment toward e-learning by emphasizing the importance of the teacher's role in guiding students' learning and promoting student engagement and achievement. The instrument holds the potential to transform teaching and learning processes, encourage student engagement and achievement, and foster a culture of continuous improvement in education.

2. 3 Methodology

The primary objective of this study is to develop and create a comprehensive instrument for assessing the role of the student (ROS) and the role of educator (ROE) instrument. The research design and instrument development process are described as a methodical exploration of the design, construction, and validation procedures to establish an empirical foundation for creating new or enhanced products, instructional tools, and models involving their construction. According to Christensen (1988), research design pertains to the guidelines, plans, or strategies outlining the procedures used to address research questions. To achieve this objective, the researchers have adopted Miller's instrument construction model as a guiding framework for constructing the ROS and the ROE instrument (Miller et al., 2013). This model encompasses comprehensive steps in each stage, spanning planning, design, construction, and verification stages, providing a structured approach to the construction process. The process of constructing the ROS and the ROE instrument revolves around ten meticulously outlined steps, Figure 1. Throughout this endeavor, the research was guided by Miller's construction, which ensures a systematic and robust approach to instrument development.

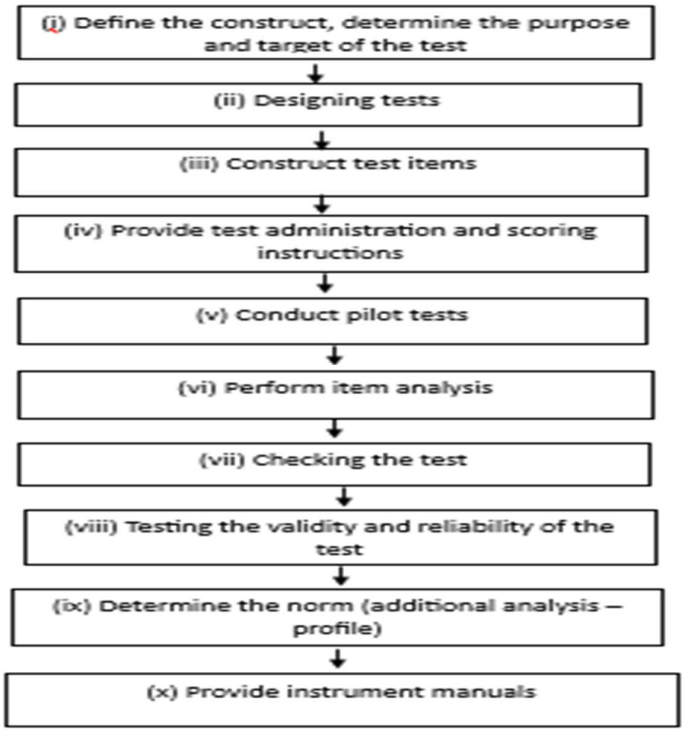

Figure 1: Model by Miller (2013).

Talib conducted a comprehensive study delineating ten sequential steps in the instrument construction process (Talib, 2009). These steps were categorized into three distinct phases, namely the need study phase, the construction phase, and the verification phase, with the primary objective of facilitating the development of instruments. However, in the subsequent work of Nuredayu et al., their focus was primarily limited to the initial phase of instrument construction, which involves construct formation and item construction (Noredayu Ariff, 2022).

In the context of developing the ROS and ROE instrument, it is essential to devise a model or theory of instrument construction to serve as a guiding reference for researchers. Additionally, Nor Mashitah introduced a modified framework by dividing the construction steps into two phases: the first stage encompassing design and construction and the second stage dedicated to verification, **Figure 2** (Nor Mashitah, 2017). This systematic approach to instrument construction provides an enhanced structure to the process. Hence, the development of the ROS and the ROE instrument adheres to the sequential phases outlined above, which entails meticulously considering the need study, construct formation, item construction, and verification stages.

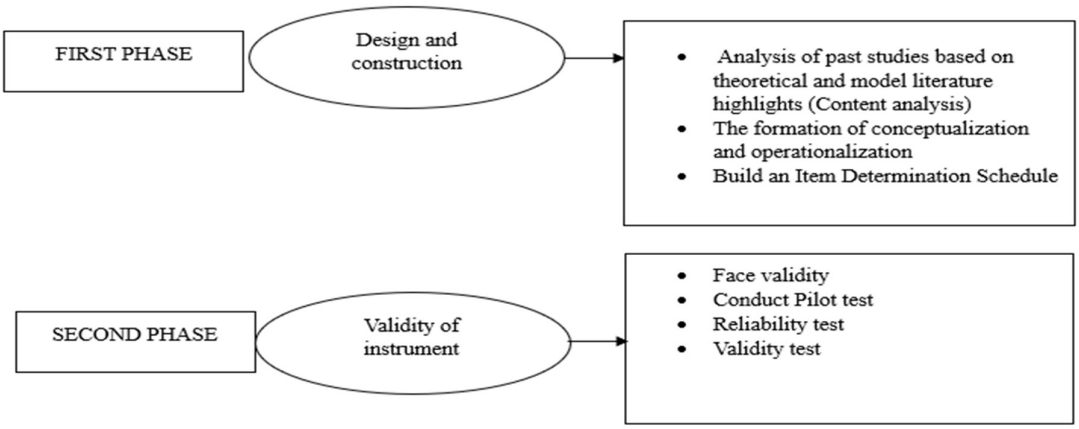

Figure 2: Conceptual Framework ROS and ROE Instrument

3. 4 Results

First Phase: Design and construction

Step 1: Analysis of Past Studies Based on Theoretical and Model Literature Review

During the initial design and construction phase, researchers engaged in instrument development undertake a systematic approach to identify and define the constructs to be measured. This process involves conducting an extensive literature review to identify commonly studied constructs and establish the basis for the ones intended to be measured, **Figure 3** (Zekhnini et al., 2020). Furthermore, researchers also draw upon previous studies to gain insights into the representation of specific constructs through particular items. Content analysis of library documents is utilized in this study to extract relevant information.

In the context of this research, the study emphasizes the incorporation of literature related to

the chosen theory and model, which, in this case, is *Al-Ghazali's* educational approach. Data from the prominent work of Al-Ghazali, specifically Iḥyāʾ ʿulūm al-dīn, serves as a valuable source of information (Al-Ghazālī, 1956). Imam Al Ghazali showed that Islam is preoccupied with exact science disciplines such as medicine, physics, chemistry, and philosophy. It also attracted the attention of Imam Al Ghazali to write down the basic Islamic sciences, so he created his work, namely, Iḥyāʾ ʿulūm al-dīn (Mufid & Ismai, 2022).

The subsequent steps encompass the systematic search for relevant data, taking comprehensive field notes, categorizing documents, synthesizing information, identifying patterns, coding data, establishing themes for later conclusions, and ensuring clarity for others to comprehend. This meticulous process identifies crucial attributes of student and teacher roles and their respective sub-constructs, serving as a foundation for the subsequent item construction phase. The primary goal of this step is to accurately and comprehensively construct the items that effectively measure the intended constructs.

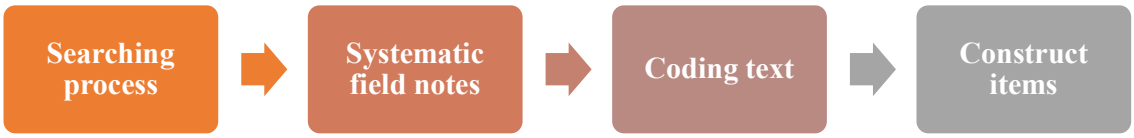

Figure 3: Process of literature review

Step 2: Conceptualization and Operationalization Formation

In the second step of the initial phase, the process of conceptualization and operationalization was undertaken. As elucidated by Rossmann in his study, conceptualization involves the development of abstract concepts analyzed by researchers while their components are delineated in more concrete and precise terms (Rossmann, 2018). In this research, the conceptualization of student and teacher roles was accomplished through an in-depth literature review focusing on the responsibilities associated with these roles. The findings highlighted that both ROS and ROE significantly impact the learning process.

The researcher sought a more concrete theory or model to construct a comprehensive framework based on the identified statement to solidify the conceptualization. Consequently, the guideline for students and educators from the esteemed work of Al-Ghazali, Iḥyāʾ ʿulūm al-dīn, was selected as a supplementary model to formulate constructs, subconstructs, and items. Based on the conceptualization and operationalization of the concepts, the researcher compiled a set of items that would be employed in the teacher-leader evaluation instrument. These preliminary findings served as the foundation for establishing the study's initial conceptual framework.

Step 3: Development of an Item Determination Schedule

The final step of the first phase involves building an item determination table, serving as a guide or template for composing dimensions, items, subconstructs, and elements based on predetermined criteria to ensure the content validity of the test (Van Looy, 2020). This step

aims to ensure coherence and consistency among the constructs, subconstructs, and items to be measured. In this study, the construction of the instrument on the ROS and ROE revolves around a series of statements seeking respondents' self-evaluations regarding these roles.

Construction Dimensions

Drawing insights from the literature, specifically the book Iḥyāʾ ʿulūm al-dīn, a total of 10 roles for students and eight roles for educators were identified. However, the formation of items was selectively adapted from these ten student roles and eight teacher roles outlined by Al-Ghazali in Iḥyāʾ ʿulūm al-dīn, with necessary modifications made to accommodate the study's scope. To ensure alignment with the research objectives, the researcher decided to include only four roles of students and two roles of educators in constructing the dimensions. Consequently, the questionnaire survey comprised dimensions encompassing the roles of students and educators, featuring sixteen items for student roles and six for educator roles.

Dimension the Role of Student

The researcher selectively integrated four roles of students from *Al-Ghazali's* book, Iḥyāʾ ʿulūm al-dīn, into the instrument construction. These four roles were subsequently designated as sub-dimensions in the study, **Table 1**.

Table 1: Sub-dimensions table for the role of student

Num	Sub-Dimensions	Items code	Items
1.	Heart purification	ROS1	Religious knowledge and practices motivate me to commit to e-learning.
		ROS2	Performing prayer makes me understand and realize my responsibilities as a student.
		ROS3	I believe that inner purification makes the process of gaining knowledge become easier.
		ROS4	I always get angry due to the stress of using the e-learning platform.

2.	Ability to focus	ROS5	Using e-learning at home disrupts my studies due to the burden of responsibilities at home.
		ROS6	I feel guilty towards my family if I stay in my room during e-learning sessions.
		ROS7	I tend to neglect knowledge because e-learning sessions give me no passion for learning.
		ROS8	I have even better focus if I study at university with my lecturers and classmates.
		ROS9	I felt demotivated if I did not have direct communication with my lecturers.
		ROS10	I understand the lesson better if I study face-to-face with my lecturers.
3.	Humble	ROS11	I think I am more expert in handling online platforms than my lecturers.
		ROS12	I quickly got bored during online learning because my lecturers were incompetent.
		ROS13	I underestimate my lecturers' technological ability to handle e-learning platforms.
4.	Value of knowledge	ROS14	Lack of proper preparation makes me feel incompetent in using the e-learning platform, and I am not motivated to continue the e-learning session.
		ROS15	The use of blended learning has helped me in handling the e-learning session.
		ROS16	I do not give up on e-learning because I know the value of knowledge.

ROS = Role of Student

Dimension the Role of Educator

Informed by Al-Ghazali's book Iḥyāʾ ʿulūm al-dīn, the researcher selectively incorporated three out of the eight roles of students into the instrument construction. These three roles were subsequently recognized and designated as sub-dimensions in the study, **Table 2**. Building upon these sub-dimensions, the items were meticulously formulated to reflect each aspect, and a unique item code was assigned to each item for organizational purposes.

Table 2: Sub-dimension table for the role of educator

Num	Sub-Dimension	Items code	Items
1.	Cooperation	ROE1	The lecturer does not force me to attend virtual classes if I have any obstacles.
		ROE2	The lecturer was always concerned about me throughout the e-learning session.
		ROE3	The lecturer never gets angry if I haven't mastered the e-learning platform yet.
2	Professional Development	ROE4	Even though I didn't understand the lectures, the lecturer explained many times throughout the e-learning session.
		ROE5	An incompetent lecturer disrupts the teaching and learning process.
		ROE6	I feel my lecturer is an expert in handling e-learning platforms.

Second Phase: Validity of instrument

Step 1: Face validity

In the context of the ROS and ROE instrument, the researchers conducted an extensive literature search, creating twenty items encompassing the roles of students and educators. To ensure face validity, expert opinions were sought from individuals with expertise in Islamic studies, including ustaz, ustazah, Imam, Syariah lawyers, and lecturers. The draft instrument was submitted to a panel of five experts, who provided valuable feedback. Based on their input, necessary revisions were made to refine the instrument items.

The experts were then requested to complete the questionnaire, allowing them to share their immediate impressions. The feedback received from this face validity assessment did not warrant substantial corrections, as the panel members reported no difficulties comprehending the questionnaire and deemed its content highly relevant. The primary purpose of this face validity examination was to cross-check the data obtained and to identify any potential ambiguities in the test content, such as language or spelling issues, answer time constraints, and clarity of instructions provided in the instrument. Following the required adjustments, the items were consolidated into a cohesive set of instruments, ready to be administered in the pilot study. **Figure 4** provides an overview of the face validity test and its essential role in refining the ROS and ROE Instrument.

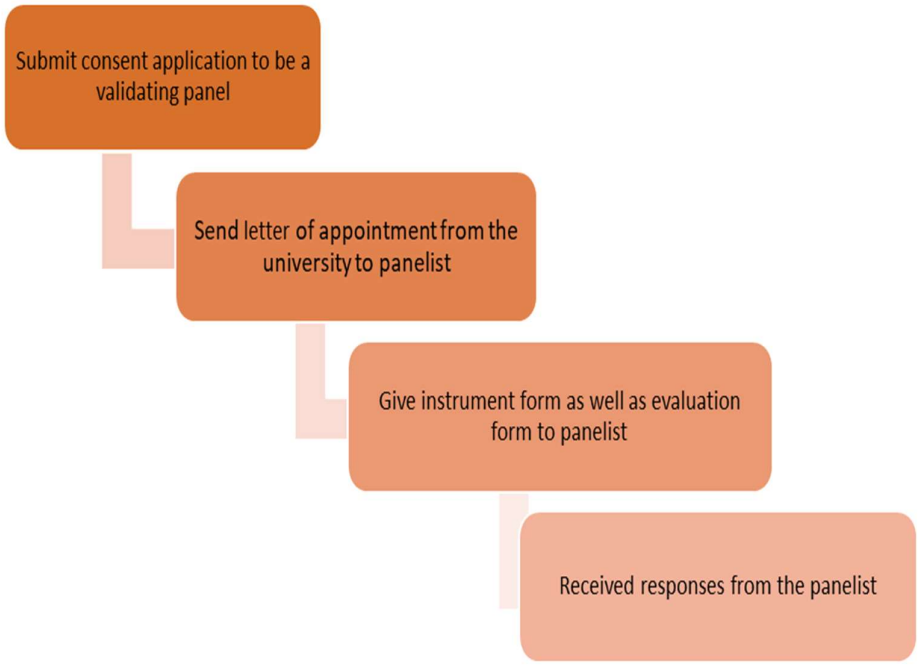

Figure 4: Process of face validity

Step 2: Pilot Test Conducted

A pilot study involving thirty-five undergraduate students from UKM sharing a similar background to the intended respondents in the main study was conducted to assess the instrument items' validity and reliability coefficients. In this pilot study, participants were requested to evaluate themselves on the roles of students and educators by responding to all items. The data collected from these pilot study respondents were subsequently analyzed using SPSS to ascertain the reliability of each individual item.

Step 3: Instrument Reliability Analysis

The researcher calculated the Cronbach's Alpha reliability coefficient for the developed ROS and ROE instrument. The scale's reliability analysis was performed using the SPSS 28 package program. The analysis determined the overall reliability coefficient of the entire scale as Cronbach's Alpha.

Table 3: Reliability statistic of the role of student

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.781	.775	16

Table 4: Item-total statistic for the role of student

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
ROS 1	56.69	55.692	.138	.505	.785
ROS 2	56.86	54.773	.247	.785	.778
ROS 3	56.89	56.457	.100	.726	.786
ROS 4	57.37	49.652	.418	.641	.767
ROS 5	57.43	48.958	.475	.687	.761
ROS 6	56.86	53.832	.222	.374	.782
ROS 7	57.49	52.022	.317	.631	.775
ROS 8	56.83	49.382	.536	.730	.757
ROS 9	57.17	49.617	.476	.636	.762
ROS 10	56.69	50.281	.503	.674	.760
ROS 11	58.03	47.264	.533	.751	.755
ROS 12	57.80	52.106	.291	.503	.778
ROS 13	57.89	51.575	.351	.692	.772
ROS 14	57.60	51.718	.421	.650	.767
ROS 15	56.91	50.551	.558	.624	.758
ROS 16	56.94	51.526	.351	.516	.772

Both figures illustrate the reliability assessment for the ROS scale. **Table 3** presents the reliability assessment for the ROS scale, which resulted in a Cronbach's Alpha of .781. Cronbach's Alpha is a measure of internal consistency, which indicates how closely related a set of items are as a group. A Cronbach's Alpha of .781 is generally considered good, as it indicates a high level of internal consistency among the items in the ROS scale. However, **Table 4** demonstrates that removing item ROS7 increased the scale's reliability to .786. This suggests that item ROS7 may not be as closely related to the other items in the scale as the researchers initially thought. Overall, a Cronbach's Alpha of .781 indicates the reliability of the ROS scale, but researchers may want to consider removing item ROS7 to increase the scale's reliability further.

Table 5: Reliability statistic for the role of educator

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.784	.787	6

Table 6: Item-total statistics of the role of educator

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
ROE 1	18.71	13.975	.413	.266	.783
ROE 2	18.57	13.076	.589	.462	.737
ROE 3	18.89	13.281	.513	.333	.757
ROE 4	18.40	14.424	.518	.406	.756
ROE 5	18.97	14.087	.499	.365	.759
ROE6	18.60	12.541	.690	.532	.711

Table 5-6 illustrates the reliability assessment conducted on the ROE scale. **Table 5** displays the obtained Cronbach's Alpha coefficient as .784. Subsequently, in **Table 6,** the Cronbach's Alpha values are presented with particular items removed from the scale.

Upon examining the results, it is evident that the scale demonstrates a high level of internal consistency, as evidenced by the initial Cronbach's Alpha value. However, the scale's reliability does not significantly improve when considering the impact of deleting specific items. Thus, it can be inferred that the scale exhibits a high level of reliability.

Step 4: Validity Test

Validity refers to the extent to which a scale or instrument measures what it intends to measure. In other words, it evaluates whether the scale accurately captures the construct or concept of interest. Validity is essential to research, ensuring the data collected is relevant and meaningful to the research question. To establish validity, researchers may use a variety of methods, such as face validity, content validity, criterion-related validity, and construct validity. Each method assesses different aspects of validity and helps ensure that the data collected is accurate and reliable. In this study, the validity test results for the ROS measurement scale revealed a mean score of 4.34, with both the median and mode displaying a value of 5.00, indicating consistent and reliable measurements of the intended construct, **Table 7**.

Meanwhile, the validity test conducted on the ROE measurement scale yielded a mean score of 4.03, with a median of 4.00 and a mode of 5.00, suggesting a moderate level of dispersion in the data and highlighting the scale's ability to capture the central tendency of the measured construct, **Table 8**.

A mean score of 4.23 could indicate that respondents, on average, tend to lean towards a higher agreement or positive response on the scale. The results of the validity assessment demonstrate that the instrument exhibits good validity, effectively measuring and capturing the intended construct precisely and accurately. In this study, the standard deviation of the data points was 1.237 for ROS and 1.126 for ROE, indicating that the values are spread out from the mean of 4.34, suggesting a moderate level of variability in the dataset. A higher standard deviation indicates that the data points are more spread out from the mean, while a lower standard deviation indicates that the data points are closer to the mean.

Table 7: Descriptive table for the role of student

Statistics

		ROS1	ROS2	ROS3	ROS4	ROS5	ROS6	ROS7	ROS8	ROS9	ROS10	ROS11	ROS12	ROS13	ROS14	ROS15	ROS16
N	Valid	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35
	Missing	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mean		4.34	4.17	4.14	3.66	3.60	4.17	3.54	4.20	3.86	4.34	3.00	3.23	3.14	3.43	4.11	4.09
Median		4.00	4.00	4.00	3.00	4.00	4.00	4.00	5.00	4.00	5.00	3.00	3.00	3.00	3.00	4.00	4.00
Mode		5	4	4	3	3	5	4	5	5	5	3	3	3	3	5	5
Std. Deviation		.765	.707	.648	1.162	1.143	.954	1.039	.994	1.061	.938	1.237	1.087	1.033	.884	.832	1.040
Variance		.585	.499	.420	1.350	1.306	.911	1.079	.988	1.126	.879	1.529	1.182	1.067	.782	.692	1.081
Skewness		-1.106	-.788	-.140	-.227	-.512	-1.224	-.789	-.998	-.483	-1.671	.198	-.193	-.301	.094	-.223	-1.179
Std. Error of Skewness		.398	.398	.398	.398	.398	.398	.398	.398	.398	.398	.398	.398	.398	.398	.398	.398
Kurtosis		1.153	1.376	-.514	-.943	-.253	1.871	.473	-.121	-.967	3.301	-.704	.049	.125	.794	-1.525	1.101
Std. Error of Kurtosis		.778	.778	.778	.778	.778	.778	.778	.778	.778	.778	.778	.778	.778	.778	.778	.778
Range		3	3	2	4	4	4	4	3	3	4	4	4	4	4	2	4
Minimum		2	2	3	1	1	1	1	2	2	1	1	1	1	1	3	1
Maximum		5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Sum		152	146	145	128	126	146	124	147	135	152	105	113	110	120	144	143
Percentiles	25	4.00	4.00	4.00	3.00	3.00	4.00	3.00	4.00	3.00	4.00	2.00	3.00	3.00	3.00	3.00	4.00
	50	4.00	4.00	4.00	3.00	4.00	4.00	4.00	5.00	4.00	5.00	3.00	3.00	3.00	3.00	4.00	4.00
	75	5.00	5.00	5.00	5.00	5.00	5.00	4.00	5.00	5.00	5.00	4.00	4.00	4.00	4.00	5.00	5.00

Table 8: Descriptive table for the role of educator

Statistics

		ROE1	ROE2	ROE3	ROE4	ROE5	ROE6
N	Valid	35	35	35	35	35	35
	Missing	0	0	0	0	0	0
Mean		3.71	3.86	3.54	4.03	3.46	3.83
Median		4.00	4.00	4.00	4.00	3.00	4.00
Mode		4	4	4	5	3	4[a]
Std. Deviation		1.126	1.061	1.120	.891	.980	1.043
Variance		1.269	1.126	1.255	.793	.961	1.087
Skewness		-.572	-.796	-.313	-.323	-.270	-.628
Std. Error of Skewness		.398	.398	.398	.398	.398	.398
Kurtosis		-.523	.172	-.765	-1.070	-.078	.034
Std. Error of Kurtosis		.778	.778	.778	.778	.778	.778
Range		4	4	4	3	4	4
Minimum		1	1	1	2	1	1
Maximum		5	5	5	5	5	5
Sum		130	135	124	141	121	134
Percentiles	25	3.00	3.00	3.00	3.00	3.00	3.00
	50	4.00	4.00	4.00	4.00	3.00	4.00
	75	5.00	5.00	4.00	5.00	4.00	5.00

4. **5 Conclusion**

Based on Al-Ghazali's educational approach, the study developed an instrument to assess students' perceptions of their roles and educators' roles throughout e-learning sessions. The instrument consisted of two dimensions: ROS and ROE, each comprising seven sub-dimensions and a total of twenty items. The study's findings demonstrated that the instrument exhibited high validity and reliability, making it suitable for the actual study. The instrument holds the potential to transform teaching and learning processes, promote student engagement and achievement, and foster a culture of continuous improvement in education. The study also highlights the importance of educators understanding ICT to utilize it in teaching and learning and be compatible with the subjects taught. The success of e-learning systems depends on students' willingness and acceptance to use this system, and the level of self-awareness, student personality, and student performance all influence commitment. Therefore, students need to show their role and responsibility in e-learning because they need to constantly add knowledge and exploration to learning methods coupled with those in a technology-savvy era.

This study holds significant implications for advancing the education system, demanding attention from all members of society, particularly students and educators. The research develops into *Al-Ghazali's* educational ideas and theories, aiming to integrate them into the national education framework. In a pioneering effort, a novel instrument was developed based on the principles advocated by Islamic scholars. Apart from focusing on the roles of students, *Al-Ghazali's* emphasis on teacher leadership to foster a culture of excellence in professionalism was highlighted. Teachers are expected to embody leadership traits, serving as a source of inspiration, reference, advice, and guidance for students while delivering exceptional outcomes recognized by the organization. This also ties into the contemporary development of evaluation systems.

Moreover, this research addresses a critical gap in existing literature concerning the actual ROS and ROE. Construct formation and item construction provide updated definitions and enhance

the researchers' comprehension of the constructs under study. This, in turn, stimulates the exploration of new and more effective measurement approaches for the studied construct. Thus, the study successfully bridges the research gap concerning the development of the ROS and ROE instrument. The study's findings demonstrated that the developed instrument based on *Al-Ghazali's* educational approach exhibited high validity and reliability, making it suitable for the actual study. Therefore, *Al-Ghazali's* educational approach can be used to develop effective e-learning systems that promote student engagement and achievement.

Satament and declerations

Declaration of Competing Interest: The authors declare that they have no known competing interests that could have appeared to influence the work reported in this paper. I acknowledge using ChatGPT [https://chat.openai.com/] to edit my writing while preparing this article. I entered the following prompts: "Improve my writing style."

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References

Aboagye, E., Yawson, J. A., & Appiah, K. N. (2021). COVID-19 and E-learning: The challenges of students in tertiary institutions. *Social Education Research*, 1-8. https://doi.org/ https://doi.org/10.37256/ser.212021422

Al-Ghazālī, A. Ḥ. M. (1956). *Iḥyā ʻulūm al-dīn*.

Almaiah, M. A., Al-Khasawneh, A., & Althunibat, A. (2020). Exploring the critical challenges and factors influencing the E-learning system usage during COVID-19 pandemic. *Education and information technologies*, *25*, 5261-5280. https://doi.org/https://doi.org/10.1007/s10639-020-10219-y

Anghelache, V. (2013). Determinant factors of students' attitudes toward learning. *Procedia-Social and Behavioral Sciences*, *93*, 478-482.

Boon, Q. W. (2020). Pandemik Covid-19: Mempercepatkan Pelaksanaan Pengajaran Dan Pembelajaran Dalam Talian (Pdpdt) Di Kolej Komuniti: Isu & Cabaran Yang Dihadapi oleh Pensyarah dan Pelajar. *TVET Think Big. Kedah: Kolej Komuniti Bandar Darulaman*.

Choong, P. (2020). Covid-19: Impact on the tertiary education sector in Malaysia. *Penang Institute*, *8*. https://penanginstitute.org/publications/covid-19-crisis-assessments/covid-19-impact-on-the-tertiary-education-sector-in-malaysia/

Chung, E., Noor, N. M., & Mathew, V. N. (2020). Are you ready? An assessment of online learning readiness among university students. *International Journal of Academic Research in Progressive Education and Development*, *9*(1), 301-317.

Damit, A., & Omar, K. (2019). Meneroka Impak Dan Cabaran Pensyarah Terhadap Pelaksanaan E-Pembelajaran Di Kolej Vokasional Zon Tengah, Malaysia. The 5th International Conference on Educational Research and Practice.(ICERP),

Doman, N. (2017). *Implikasi google apps dalam pengajaran dan pembelajaran pelajar pesisir uthm* Universiti Tun Hussein Onn Malaysia].

Karmani, N. (2016). *Pembangunan model kemahiran kepimpinan guru sekolah menengah di Shah Alam, Selangor* Universiti Pendidikan Sultan Idris].

Langford, M., & Damsa, C. (2020). Online teaching in the time of COVID-19: Academic teachers' experience in Norway. *Centre for Experiential Legal Learning (CELL), University of Oslo*, *2*.

Miller, L. A., McIntire, S. A., & Lovler, R. L. (2013). Foundations of psychological testing: A practical approach. *(No Title)*.

Mufid, A. (2019). Maqasid Alquran Perspektif Muhammad Al-Ghazali. *Al-Bayan: Jurnal Studi Ilmu Al-Qur'an dan Tafsir*, *4*(2), 118-132.

Mufid, A., & Ismai, M. (2022). INTEGRASI ANTARA ILMU DAN HADITS MENURUT PEMIKIRAN IMAM AL-GHAZALI. *Al-Bayan: Journal of Hadith Studies*, *1*(2), 60-79.

Noordin, N. H., Hashim, N., & Abd Latib, N. (2020). Cabaran pensyarah kolej komuniti dalam melaksanakan proses pengajaran dan pembelajaran dalam talian. Dalam e-proceedings of the green technology & engineering 2020 virtual conference. GREENTECH'20,

Nor Mashitah, M. R. (2017). *Pembinaan dan pengesahan instrumen pentaksiran prestasi standard awal pembelajaran dan perkembangan awal kanak-kanak/Nor Mashitah Mohd Radzi* University of Malaya].

Noredayu Ariff, M. M., and Jamal Nordin Yunus. (2022). Pembentukan Konstruk dan Pembinaan Item Instrumen Penilaian Pemimpin Guru.

Razali, O. S. A. (2021). *1,099 bunuh diri sejak 2020 hingga Mei 2021*. BH, New Straits Times Press. https://www.bharian.com.my/berita/nasional/2021/07/834248/1099-bunuh-diri-sejak-2020-hingga-mei-2021

Rossmann, A. (2018). Digital maturity: Conceptualization and measurement model.

Sá, M. J., & Serpa, S. (2020). The COVID-19 pandemic as an opportunity to foster the sustainable development of teaching in higher education. *Sustainability*, *12*(20), 8525. https://doi.org/https://doi.org/10.3390/su12208525

Saw, Y. (2020). Pembelajaran dalam talian pada masa krisis Covid-19. In: Retrived.

Shereen, M. A., Khan, S., Kazmi, A., Bashir, N., & Siddique, R. (2020). COVID-19 infection: Emergence, transmission, and characteristics of human coronaviruses. *Journal of advanced research*, *24*, 91-98.

Soussi, K. (2016). AL Ghazali Cultivates Education: A Comparison with Modern Theories. *International Journal of Education and Research*, *4*(11), 425-436.

Sulisworo, D. (2013). The paradox on IT literacy and science's learning achievement in secondary school. *International journal of evaluation and research in education*, *2*(4), 149-152. https://doi.org/https://doi.org/10.11591/ijere.v2i4.2732

Talib, R. (2009). *Pembinaan dan pengesahan instrumen ujian literasi pentaksiran* Universiti Teknologi Malaysia].

Van Looy, A. (2020). Capabilities for managing business processes: a measurement instrument. *Business Process Management Journal*, *26*(1), 287-311. https://doi.org/https://doi.org/10.1108/BPMJ-06-2018-0157

Zekhnini, K., Cherrafi, A., Bouhaddou, I., Benghabrit, Y., & Garza-Reyes, J. A. (2020). Supply chain management 4.0: a literature review and research framework. *Benchmarking: An International Journal*, *28*(2), 465-501. https://doi.org/https://doi.org/10.1108/BIJ-04-2020-0156

Zhang, W., Wang, Y., Yang, L., & Wang, C. (2020). Suspending classes without stopping learning: China's education emergency management policy in the COVID-19 outbreak. In (Vol. 13, pp. 55): MDPI.