Exploring Online Motivation Through ERG Theory

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ABSTRACT

Learning in a digital age has transformed educational practices, with online learning becoming an increasingly common method of instruction. However, learning in online environments does not come without challenges, as learners often experience reduced social interaction, increased cognitive demands, and a greater need for self-regulation, all of which may affect learners' motivation. Based on Alderfer's ERG theory, this quantitative study was conducted among 143 students from a local university in Malaysia using a structured questionnaire survey. The study adopted Fowler's (2018) online motivation constructs, mapping existence needs to task value and extrinsic motivation, relatedness needs to social engagement and instructor support, and growth needs to self-efficacy and control of learning beliefs. Data were collected using a 5-point Likert-scale survey to examine how the three needs—existence, relatedness, and growth—influence learners' online learning motivation. The findings indicate that learners feel more motivated and engaged in online learning when their growth, existence, and relatedness needs are fulfilled. These needs were found to be closely interconnected, suggesting that learners' motivation is shaped by the combined fulfillment of multiple needs rather than any single factor. Overall, the findings suggest that learners' success in online learning is closely tied to the support they receive from both instructors and peers.

Keywords: Online learning, motivation, ERG theory, learner motivation

INTRODUCTION

Background of Study

Motivation is a crucial element determining the success of online context activities in education, workplace or digital platforms. Understanding how individuals engage, persist and form motivational dynamics in online environments helps in adapting with the global adoption of digital learning following the quick transition after the Covid-19 pandemic. Many studies have explored online motivation and presented challenges of reduced interaction, limited social support and increased self-regulation demands which negatively impact the learners (Ahmad et al.,2022). However, studies by Razali & Azman (2021) showed that online motivation during Covid-19 pandemic was at peak among students with stable socio-economic status as the pivot.

Hence, in understanding online motivation, ERG theory provides need-based theories focusing on individual needs of existence, relatedness and growth (Alderfer,1969). This theory allows individuals to optimize multiple needs simultaneously and recognize online motivation based on context and experience. This theory is also known to explain motivation fluidity, satisfaction and productivity and now entering the digital environments such as online home-based study and remote learning format. By applying the ERG concept, researchers may understand how flexibility balances study and life, and opportunities for personal growth influence student motivation to persist in virtual learning tasks (Rasdi et al., 2024). Thus, it is important to investigate the

relationships between these three needs (existence, relatedness and growth) in online learning as a support mechanism for the betterment of digital learning advancement in Malaysia.

Statement of Problem

Online learning for Malaysian undergraduates in science/technology and social sciences/humanities programs often falls short on motivation, as Alderfer's ERG theory (1969) highlights gaps in growth (e.g., self-efficacy and control beliefs), existence (e.g., intrinsic/extrinsic goals and task value), and relatedness (e.g., social engagement and instructor support) that hinder sustained engagement (Fowler, 2018; Diep et al., 2019). While the needs of ERG strongly align with boosting online motivation across all student groups, no practical model adapts ERG for Malaysian universities to build confidence, make learning relevant, and strengthen peer-instructor connections (Kamalruzaman et al., 2023; Rasdi et al., 2024; Tuan Ismail et al., 2023). This absence blocks targeted fixes for low persistence; therefore, this study aims to examine how growth, existence, and relatedness needs influence online learning, test their interrelationships, and assess cluster differences to develop practical ERG-based strategies for equitable digital success (Rahmat, 2025; Siemens, 2005).

Objective of the Study and Research Questions

This study is done to explore online motivation through ERG theory. Specifically, this study is done to answer the following questions;

- How does the need for growth influence learners' online learning?
- How does the need for existence influence learners' online learning?
- How does the need for relatedness influence learners' online learning?
- Is there a relationship between all types of needs in online learning?

(H1- There is no relationship between all types of needs in online learning)

- Is there a significance difference for all types of need across clusters?

(H2- There is no significance difference for all types of need across clusters)

LITERATURE REVIEW

Theoretical Framework of the Study

ERG Theory of Motivation

According to ERG Theory of Motivation introduced by Alderfer (1969), human motivation is guided through three fundamental needs: Existence, Relatedness, and Growth. The first need; existence concerns basic physiological and material needs such as safety, comfort, and access to necessities (Alderfer, 1969). When it comes to the learning settings, these needs include a safe learning condition, adequate facilities, access to learning materials, and physical well-being. The second need, relatedness, involves social engagement, interpersonal relationships, and a sense of belonging (Alderfer, 1969). In educational situations, these can be obtained through positive relationships with friends, teachers and the academic community. The last need, growth, refers to individuals' desire for individual growth, self-accomplishment, and the achievement of their full capability (Alderfer, 1969). Growth needs are related to opportunities for skill development, intellectual challenge, autonomy, and achievement in learning contexts. Addressing these needs in educational settings is fundamental for encouraging motivating learning surroundings. In conclusion, Alderfer's ERG Theory (1969) offers a holistic view of learning motivation by integrating the three fundamental needs: existence, relatedness, and growth.

Connectivism

Connectivism, introduced by George Siemens, is a learning theory suited to the digital era that views learning as building networks by linking to diverse, specialised sources of information. There are four key principles of the theory of connectivism as developed by Siemens (2005) including autonomy, connectedness, diversity and openness. Firstly, when learning online, it promotes self-directed learning, with learners exercising autonomy by controlling their own learning processes. Secondly, connected learning exists when students follow their interests with the help of their peers, instructors, and the community at large. Other than that, learning diversity describes the extensive range of experiences learners carry with them into academic contexts. Lastly, learning environments that are open to criticism and new ideas make the process of learning more evident.

Past Studies

Past Studies on Online Motivation

Many studies have investigated the factors influencing adult learners' motivation in online and blended learning environments, particularly through Alderfer's ERG theory, which categorises needs into existence, relatedness, and growth. The study by Tuan Ismail et al. (2023) explored postgraduate students' learning motivation at Universiti Teknologi MARA (UiTM) Faculty of Administrative Science and Policy Studies using Alderfer's ERG theory, surveying 72 full- and part-time respondents via an online Likert-scale questionnaire (24 items on value/existence, expectancy/relatedness, affective/growth); findings showed high extrinsic goal orientation (M=4.3) for existence, control beliefs (M=4.35) for relatedness, and self-efficacy (M=3.85) for growth, implying relevance to performance and autonomy sustain motivation, yet without testing inter-need relationships or ESL applications. Similarly, Kamalruzaman et al. (2023) examined ERG-online motivation links among 93 UiTM foundation Science/Engineering students using Fowler's (2018) adapted survey (38 Likert items on expectancy/growth, value/existence, social support/relatedness); strong effects emerged from extrinsic goals (M=4.3), instructor support (M=4.0), and self-efficacy (M=3.2), highlighting instructor guidance's role but not cross-need dynamics.

The study by Rasdi et al. (2024) assessed Mechanical Engineering undergraduates' home-study motivation during COVID-19 via Alderfer's ERG, surveying 100 UiTM students with a 32-item questionnaire (flexibility/existence M=3.66, study-life balance/relatedness M=3.59, performance/growth M=3.69); positive fulfilment supported motivation, recommending environmental tweaks, though limited to engineering without ESL or interrelationship analysis. Diep et al. (2019) surveyed 204 adult learners in online/blended settings using mixed methods on ERG; persistence was tied to access (existence), support (relatedness), and skills (growth), advocating autonomy, but focused generally without Fowler integration or ESL peer reliance. Jenal et al. (2025) surveyed 106 UiTM undergraduates on Fowler's value/expectancy/social support; strong correlations (value-expectancy r=.575, expectancy-support r=.553, value-support r=.665) confirmed interrelationships, yet no ERG mapping or ESL focus.

These studies affirm ERG needs—existence via value/flexibility, relatedness via support/balance, growth via efficacy/performance—drive online motivation per Fowler's (2018) constructs, yet gaps persist: Tuan Ismail et al. (2023) and Kamalruzaman et al. (2023) explored individual needs without interrelationships; Rasdi et al. (2024) and Diep et al. (2019) overlooked ESL contexts; Jenal et al. (2025) confirmed Fowler correlations but not ERG integration or ESL peer/instructor dependencies during classes. This study fills these gaps by empirically testing ERG-Fowler mappings, inter-need dynamics, and specificities of ESL online classes.

Conceptual Framework of the Study

This concept of this study (refer to figure 1) is anchored from Alderfer's (1969) ERG motivation theory. In the context of this study, the theory is used to depict online motivation. During online classes, learners depend on relatedness engagement with their peers and also the instructor to feel connected to the lesson (Rahmat, 2025). Alderfer (1969) states that in order to feel connected, learners depend on three core needs and they are Existence (for physical and psychological survival), Relatedness (for interpersonal relationships), and Growth (for personal development). In this study, Alderfer's (1969) types of needs are used as variables to support Fowler's (2018)

constructs on online motivation. Firstly, the variable growth is supported by Fowler's (2018) constructs such as (i) self-efficacy and (ii) control of learning beliefs. Next, the variable existence is supported by Fowler's (2018) constructs such as (i) intrinsic goal orientation, (ii) extrinsic goal orientation and (iii) task value. Lastly, the variable relatedness is supported by Fowler's (2018) constructs such as (i) social engagement, and (ii) instructor support. In addition to that, this study also explores if there is a relationship across all types of needs on online learning.

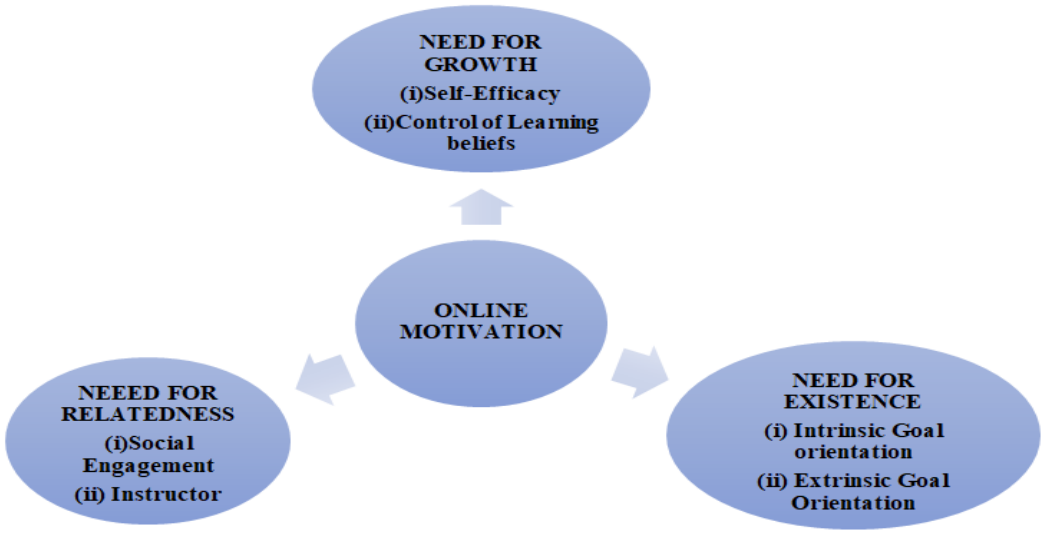

Figure 1: Conceptual Framework of the Study Exploring Online Motivation through ERG theory

METHODOLOGY

This quantitative study is done to explore online motivation through ERG theory. A convenient sample of 143 participants responded to the survey. The instrument used is a 5 Likert-scale survey and is rooted from Alderfer (1969) and Fowler (2018) to reveal the variables in table 3 below. Table 1 below shows the categories used for the Likert scale; 1 is for Strongly Disagree, 2 is for Disagree, 3 is for Undecided, 4 is for Agree and 5 is for Strongly Agree.

Table 1: Likert Scale Use

1	Never
2	Seldom
3	Sometimes
4	Often
5	Almost Always

Table 2: Distribution of Items in the Survey

SECTION	VARIABLE	CONSTRUCT	NO OF ITEMS	TOT ITEM	CRONBACH ALPHA
B	GROWTH	Self-Efficacy	7	11	.855
		Control of Learning Beliefs	4		

C	EXISTENCE	Intrinsic Goal Orientation	4	14	.911
		Extrinsic Goal Orientation	4		
		Task Value	6		
D	RELATEDNESS	Social Engagement	5	12	.882
		Instructor Support	7		
				37	.947

Table 2 shows the distribution of items in the survey. The survey was based on Adelfer's (1969) ERG motivation theory which was used to support Fowler's (2018) online motivation construct. Alderfer's ERG (existence, relatedness and growth) theory has helped researchers better understand the factors that influence individual human behavior (Caulton, 2012). This understanding is valuable for both students and practitioners, as it allows them to make sense of motivational influences and apply this knowledge to improve performance in various academic and professional settings. Additionally, Rahmat (2025) stated that to feel a sense of connection to a lesson, a learner relies on relatedness engagement with their peers and instructors. Taking both these theories into consideration, it is important to find out if Fowler's motivation construct positively supports Alderfer's ERG motivation theory in the context of online learning motivation. The items in this survey are distributed in three different sections with each section containing items measuring each type of variable and the constructs that support it. The first section, B, contains 11 items which measure Adelfer's growth variable. Of these 11 items, 7 items are of self efficacy construct and 4 items are of control of learning beliefs. The second section, C, measures the variable existence and contains a total of 14 items with 4 under intrinsic goal orientation construct, 4 for extrinsic goal orientation construct and the last 6 for task value construct. The last section, D, measures the variable relatedness with 12 items in total. Constructs such as social engagement contains 5 items and instructor support has 7 items.

Table 3: Reliability Levels, Cronbach's Alpha Ranges, and their Interpretations

Reliability Level	**Cronbach's Alpha range**	**Interpretation**
Excellent	0.9 and above	Indicates very high internal consistency
Good	0.80-0.89	Reflects strong internal consistency
Acceptable	0.70-0.79	Indicates acceptable internal consistency
Questionable	0.60-0.69	Reflects questionable internal consistency
Poor	Below 0.6	Indicates poor internal consistency

In order to determine the internal reliability of the instrument, reliability analysis is done. Table 3 above shows the distribution and interpretation of Cronbach Alpha range. According to Ahmad, et.al. (2024), Cronbach Alpha scores between 0.7 to 0.9 is considered acceptable to excellent.

Table 2 also shows the reliability of the survey. The analysis shows a Cronbach alpha of .855 for Growth, .911 for Existence, and .822 for Relatedness. The overall Cronbach Alpha for all 37 items is .947; thus, revealing a good reliability of the instrument chosen/used. Further analysis using SPSS is done to present findings to answer the research questions for this study.

FINDINGS

Demographic Analysis

According to Ziegenfuss, et.al (2021), researchers report demographic data in percentages to establish sample representatives, and allow for generalizability to a larger population. The reporting also provides an overview of participants' characteristics. Percentages offer a clear and understandable picture of the sample makeup.

Table 4: Percentage for Demographic Profile

Question	Demographic Profile	Categories	Percentage (%)
1	Gender	Male	26%
		Female	74%
3	Cluster	Science & Technology	55%
		Social Sciences & Humanities	45%

Table 4 summarises the demographic profile of all respondents involved in this study based on gender and academic clusters. In terms of gender distribution, females account for the majority of samples at 74% out of 143 respondents, while only 26% are male participants. Regarding the academic cluster, 55% of the respondents were from the Science and Technology cluster, whereas 45% were from the Social Sciences and Humanities cluster.

Descriptive Statistics

Why is there a need to report the mean and standard deviation? According to Vetter (2017), Mean (M) represents the average, or centre of a data set. Standard deviation (SD) indicates the typical distance of individual observations from the mean which shows the data's variability or spread. A low SD means the data points are clustered close to the mean whole a high. SD indicates they are more spread out. It is good to have a high SD.

Findings for Growth

This section presents data to answer research question 1: How does the need for growth influence learners' online learning?. In the context of this study, this is measured by (i) self-efficacy and (ii) control of learning beliefs.

Table 5: Mean for Self-Efficacy (ESE)

Statement	Mean	SD
ESEQ 1 I believe I'll receive excellent grades in my classes.	3.51	0.65
ESEQ2I'm certain I can understand the most difficult material presented in the readings.	3.31	0.76
ESEQ3I'm confident I can learn the basic concepts that are being taught.	3.91	0.73
ESEQ4I'm confident I can understand the most complex material presented by the instructor online.	3.35	0.77
ESEQ5I'm confident I can do an excellent job on assessments online	3.78	0.72

ESEQ6 I'm certain I can master the skills being taught online.	3.45	0.76
ESEQ7 Although online classes can be challenging, I think I can do well.	3.78	0.69

Table 5 depicts the mean values for self-efficacy in which the majority of respondents expressed that 'I'm confident I can learn the basic concepts that are being taught' (Item 3), as indicated by a mean value of 3.91. This suggests strong confidence in understanding foundational content online. Additionally, two other items also show relatively high endorsement, ESEQ5 (I'm confident I can do an excellent job on assessments online) and ESEQ7 (Although online classes can be challenging, I think I can do well), both with M = 3.78, reflecting optimism about achieving good performance even when online learning is demanding. However, a minority of respondents reported that they are certain that they can understand the most difficult material presented in the readings with the mean score (M=3.31).

Table 6: Mean for Control of Learning Beliefs (ECB)

Statement	**Mean**	**SD**
ECBQ1If I study in appropriate ways, then I'll be able to learn the material.	3.91	0.77
ECBQ2It's my own fault if I don't learn the material taught.	3.87	0.84
ECBQ3If I try hard enough, then I'll understand the material presented.	4.16	0.76
ECBQ4If I don't understand the material presented, it's because I didn't try hard enough.	3.76	0.91

Mean values for control of learning beliefs are depicted in Table 6 above. Most respondents agreed that if they try hard enough, then they'll understand the material presented (M=4.16). This indicates that most participants strongly endorsed the idea that effort leads to understanding in the online learning context. Next, two other statements also show similarly strong agreement: ECBQ1 (If I study in appropriate ways, then I'll be able to learn the material), (M = 3.91) and ECBQ2 (It's my own fault if I don't learn the material taught), with the mean value of 3.87. Together, these results suggest that learners not only valued effective study strategies but also tended to attribute success or failure primarily to personal control rather than external factors. However, the lowest mean value (M=3.76) is recorded to be ECBQ4 (If I don't understand the material presented, it's because I didn't try hard enough) with the mean value of 3.76.

Findings for Existence

This section presents data to answer research question 2: *How does the need for existence influence learners' online learning?*. In the context of this study, this is measured by (i) intrinsic goal orientation, (ii) extrinsic goal orientation and (iii) task value.

Table 7: Mean for Intrinsic Goal Orientation (VI)

Statement	**Mean**	**SD**
VIQ1 I prefer online material that really challenges me, so I can learn new things.	3.44	0.78
VIQ2 I prefer online material that arouses my curiosity, even if it's difficult to learn.	3.41	0.82
VIQ3 The most satisfying thing for me is trying to understand the online content as thoroughly as possible.	3.77	0.73
VIQ4 I choose assignments that I can learn from even if they don't guarantee a good grade.	3.57	0.84

Table 7 presents data on the mean and standard deviation for items under Intrinsic Goal Orientation (VI). The highest mean portrayed at item 3, 'The most satisfying thing for me is trying to understand the online content as thoroughly as possible' with the mean score (M=3.77). The lowest mean score (M=3.41) is recorded for item 2 indicating that respondents prefer challenging online material that piques their curiosity. Item 1 and item 4 both are at average mean score; (M=3.44) and (M=3.57) respectively addressing the skills of learning new things.

Table 8: Mean for Extrinsic Goal Orientation (VE)

Statement	**Mean**	**SD**
VEQ1 Getting a good grade is the most satisfying thing for me.	4.52	0.68
VEQ2 I want to do well in my classes so that I can get awards and recognition.	4.27	0.78
VEQ3 I want to get better grades than most of the other students in my classes.	4.14	0.79
VEQ4 I want to do well in my classes because it's important to show my ability to my family, friends, employer, or others.	4.34	0.74

Table 8 portrays the mean score for Extrinsic Goal Orientation (VE) items. The lowest score (M=4.14) is reflected in item 3 indicating that respondents desire better grades than their classmates. Some respondents value recognition with the mean score of (M=4.27) and want to showcase their abilities at an average of (M=4.34). Meanwhile, the highest mean score (M=4.52) for item 1 proves that good grades ensure satisfaction among most respondents.

Table 9: Mean for Task Value (VT)

Statement	**Mean**	**SD**
VTQ1 I think I will be able to use what I learn in this course in other courses.	4.00	0.72
VTQ2 It is important for me to learn the course material in this class.	4.15	0.67
VTQ3 I am very interested in the content area of this course.	4.06	0.70
VTQ4 I think the course material in this class is useful for me to learn.	4.50	0.70
VTQ5 I like the subject matter of this course.	3.80	0.71
VTQ6 Understanding the subject matter of this course is very important to me.	4.17	0.76

Table 9 summarises mean score for Task Value indicating that highest score (M=4.50) recorded for item 4. Average mean score (M=4.17) highlighted that respondents believed that the key takeaways from the course will be used in other courses too. Meanwhile the lowest mean score (M=3.80) for item 5 recorded respondents' preference on the course.

Findings for Relatedness

This section presents data to answer research question 3- How does the need for relatedness influence learners' online learning? In the context of this study, this is measured by (i) social engagement, and (ii) instructor support.

Table 10: Mean for Social Engagement (SSE)

Statement	Mean	SD
SSEQ1 I feel "disconnected" from my teacher and fellow students in classes.	2.50	1.12
SSEQ2 I pay attention in classes.	3.96	0.69
SSEQ3 I enjoy class discussions.	4.01	0.82
SSEQ4 I feel like I can freely communicate with other students in classes.	3.70	0.88
SSEQ5 I have strong relationships with fellow students in this course.	3.57	1.03

Table 10 shows the mean score for students' social engagement. The results indicate a high level of social engagement among the respondents, as they agreed that they enjoy participating in class discussions, as this statement records the highest mean score (M=4.01). The second highest mean value of (M=3.96) is reflected in item 2, where most of the participants pay attention during classes. This is followed by the third highest mean score, (M=3.70) where most of the participants agreed that they can communicate freely with other students in classes. Lastly, the lowest mean score (M=2.50) indicates that only a minority of respondents feel disconnected from their teacher and fellow students in classes.

Table 11: Mean for Instructor Support (SIS)

Statement	Mean	SD
SISQ1I feel like I can freely communicate with the instructor in this class.	3.82	0.82
SISQ2The instructor responds to questions, clearly, completely, and in a timely manner.	4.15	0.74
SISQ3The instructor's expectations for me in this class are clear.	3.98	0.80
SISQ4The instructor provides the guidance I need to be successful in this class.	4.15	0.71
SISQ5The instructor presents the material in a way that makes it relevant to me.	4.11	0.74
SISQ6In this course, I have the freedom to guide my own learning	3.99	0.69
SISQ7The instructor provides regular feedback that helps me gauge my performance in this class.	4.05	0.80

Table 11 depicts the mean values for instructor support, in which most respondents expressed how the instructor provides the guidance they need to be successful in this class (M=4.15). Similarly, the same number of respondents agreed that the instructor responds to students' questions clearly, completely, and in a timely manner. (M=4.15). Additionally, respondents recorded a mean score for one of the statements given in the survey where respondents agreed that they have the freedom to guide their own learning. The lowest mean only (M=3.82) shows the respondents feel they can freely communicate with the instructor in this class. These findings revealed a significant influence of instructor support on online learning experience.

Exploratory Statistics

According to He (2024), correlation is a statistical technique that shows how strongly two variables are related to each other or the degree of association between the two. It's a common tool for describing simple relationships without making a statement about cause and effect. This section presents data to answer research questions on

correlation. To determine if there is a significant association in the mean scores between all types of needs in online learning, data is analysed using SPSS for correlations. Results are presented separately in table 13, below.

Findings for Relationship between all types of needs in online learning

This section presents data to answer research question 4: Is there a relationship between all types of needs in online learning?

(H1- There is no relationship between all types of needs in online learning)

Table 12: Correlation between all types of needs in online learning

		GROWTH	**EXISTENCE**	**RELATEDNESS**
GROWTH	Pearson (Correlation	1	.692**	.633**
	Sig (2-tailed)		<.001	<.001
	N	143	143	143
EXISTENCE	Pearson (Correlation	.692**	1	.713**
	Sig (2-tailed)	<.001		<.001
	N	143	143	143
RELATEDNESS	Pearson (Correlation	.633**	.713**	
	Sig (2-tailed)	<.001	<.001	
	N	143	143	143

**Correlation is significant at the 0.01 level (2-tailed)

Table 12 shows there is an association between growth and relatedness. Correlation analysis shows that there is a high significant association between growth and relatedness (r=.633**) and (p=<.001). According to He (2024), coefficient is significant at the .05 level and positive correlation is measured on a 0.1 to 1.0 scale. Weak positive correlation would be in the range of 0.1 to 0.3, moderate positive correlation from 0.3 to 0.5, and strong positive correlation from 0.5 to 1.0. This means that there is also a strong positive relationship between growth and relatedness. Null hypothesis is rejected.

Next, there is an association between growth and existence. Correlation analysis shows that there is a high significant association between growth and existence (r=.692**) and (p=<.001). According to He (2024), coefficient is significant at the .05 level and positive correlation is measured on a 0.1 to 1.0 scale. Weak positive correlation would be in the range of 0.1 to 0.3, moderate positive correlation from 0.3 to 0.5, and strong positive correlation from 0.5 to 1.0. This means that there is also a strong positive relationship between growth and existence. Null hypothesis is rejected.

Finally, there is an association between existence and relatedness. Correlation analysis shows that there is a high significant association between existence and relatedness (r=.713**) and (p=<.001). According to He (2024), coefficient is significant at the .05 level and positive correlation is measured on a 0.1 to 1.0 scale. Weak positive correlation would be in the range of 0.1 to 0.3, moderate positive correlation from 0.3 to 0.5, and strong positive correlation from 0.5 to 1.0. This means that there is also a strong positive relationship between existence and relatedness. Null hypothesis is rejected.

The null hypothesis for relationship between all types of needs in online learning is therefore rejected.

Inferential Statistics

According to He (2024), there are three main functions of a T-test and ANOVA. Firstly, both are done to compare means. This test is also done to determine if the average scores (mean) or values of two groups, or one group against a known value, are different enough to be considered statistically meaningful and are not just due to random chance. Secondly, T-test and ANOVA are done to test hypotheses. Researchers use t-tests and ANOVA to test hypotheses about means, such as whether a new treatment significantly impacts a variable or if there's a difference in performance between two distinct groups. Lastly, T-test and ANOVA are done to identify significant differences. The output of a t-test provides a p-value (significance value). If this p-value is below a predetermined threshold (often 0.05), it indicates a statistically significant difference, allowing researchers to draw conclusions about the populations from which their samples were drawn. The null hypothesis is therefore accepted.

Significance Difference for

This section presents data to answer research question 5: Is there a significance difference for all types of need across clusters?

(H2- There is no significance difference for all types of need across clusters)

Table 13: T-test for all types of need across clusters

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means							
						Significance				95% Confidence Interval of the Difference	
		F	Sig.	t	df	One-Sided p	Two-Sided p	Mean Difference	Std. Error Difference	Lower	Upper
GROWTH	Equal variances assumed	6.661	.011	-1.416	141	.079	.159	-.11565	.08167	-.27711	.04581
	Equal variances not assumed			-1.380	117.104	.085	.170	-.11565	.08383	-.28167	.05037
EXISTENCE	Equal variances assumed	4.492	.036	.072	141	.471	.943	.00616	.08580	-.16346	.17578
	Equal variances not assumed			.070	118.764	.472	.944	.00616	.08788	-.16785	.18017
RELATEDNESS	Equal variances assumed	15.165	<.001	-.998	141	.160	.320	-.09192	.09207	-.27393	.09009
	Equal variances not assumed			-.962	108.648	.169	.338	-.09192	.09551	-.28122	.09738

With reference to table 13, a T-test was conducted to examine the effects of all types of need on clusters. The analysis shows there is no significant difference between growth (F=6.661, p=0.159), existence (F=4.492, p=0.943), and relatedness (F=15.`65, p=0.320) across clusters.

CONCLUSION

Summary of Findings and Discussions

RQ1: How does the need for growth influence learners' online learning?

The findings of this study reveal that learners generally have a high level of self-efficacy as they report feeling confident that they can learn the basic concepts that were taught during online lessons. Most respondents believed that while online classes can be challenging, they were confident in their ability to perform well in online learning activities and assessments. In addition, learners also reported feeling confident over having control of their learning. This indicates a belief that understanding the content and achieving good performance depend on learners' own effort and learning strategies. These notions suggest that learners' need for growth plays an important role in shaping their online learning experiences. High levels of self-efficacy as well as having

strong personal control over their own learning help encourage learners to push forward with their learning even as they encounter challenges and obstacles in online learning environments. This finding is in accordance with a study by Tuan Ismail et al. (2023) that explored learning motivation among 72 respondents. The previous study highlighted that allowing learners to see the relevance of online learning to their performance and having autonomy over their learning help sustain motivation.

RQ2: How does the need for existence influence learners' online learning?

Based on RQ2, learners revealed high satisfaction for online learning when they were able to thoroughly understand the course content; indicating a motivation to learn stemming from the satisfaction in discovering the knowledge itself. This also aligns with another finding which stated that learners were more willing to work on tasks that they could learn from even at the expense of their grades. While these findings suggest that learners are intrinsically motivated to learn online, any guidance from instructors that could assist them in clarifying and understanding the course content; making learning easier was still deemed valuable as many learners agreed that it was crucial for them to understand the subject matter and perform well. Hence; getting a good grade still gives them the most satisfaction out of all. The present finding reinforces previous research by Kamarulzaman et al. (2023) on 93 foundation students. The study found that learners' online motivation was significantly impacted by extrinsic goals, suggesting that concrete results like grades and academic achievement are crucial for maintaining engagement.

RQ3: How does the need for relatedness influence learners' online learning?

With regard to RQ3, The influence of relatedness on online learning is further investigated through the constructs; social engagement and instructor support. The findings of this study show that learners positively experienced social engagement during online learning as they reported enjoying the class discussions and paying attention well during classes. This reflects learners' needs for relatedness where interactions with peers help them learn better in an online learning environment. Moreover, learners also highlighted the importance of instructor support particularly in terms of receiving guidance and feedback they need to be successful. This shows the importance of instructors in fulfilling learners' relatedness needs by providing support and direction they require during online classes. These findings are further strengthened through studies done by researchers such as Diep et al. (2019) and Kamarulzaman et al. (2023) which found that adult learners' persistence in online and blended learning was strongly associated with support from instructors and peers, reinforcing the role of relatedness needs in promoting sustained participation.

RQ4: Is there a relationship between all types of needs in online learning?

The overall findings of this study indicate that there is a strong positive relationship between all three needs of Alderfer's ERG theory. This shows that for learners to feel motivated to learn online, they need to feel fulfilled in terms of their growth needs, existence needs, and relatedness needs. An online learning session and environment is conducive to learning when it provides the opportunity for learners to build positive connections with their peers and instructors, fulfilling the need for relatedness. Interactions with fellow peers and instructors help scaffolding learners to understand complex concepts during online sessions, navigate through course content, and eventually reach an understanding of subject matter, creating a sense of belonging and accomplishment in the process. This eventually leads to high self-efficacy among learners, motivating them to engage even more in the learning process, fulfilling both the existence and growth needs.

RQ5: Is there a significance difference for all types of need across clusters?

The present study found that there is no significant difference between all types of needs across clusters. The acceptance of the null hypothesis reinforces the idea that learners experience existence, relatedness, and growth needs as equally important in online learning environments. The findings of this present study align with previous studies that viewed ERG needs as interconnected. The result of this current study also implies that for learners to sustain their motivation and engagement, all the three needs have to work together; in a complimentary and mutually reinforcing way in online learning contexts. To stay motivated and involved online,

learners need a balanced fulfillment of basic conditions, social connection, and possibilities for personal development.

Implications and Suggestions for Future Research

Theoretical and Conceptual Implications

The findings validate Alderfer's ERG theory (1969) as a robust framework for online learning motivation, extending its application from organisational contexts to digital education by mapping growth needs to self-efficacy/control beliefs, existence to value orientations, and relatedness to social/instructor support per Fowler (2018). Strong intercorrelations (r = .633** to .713**) across needs affirm ERG's non-hierarchical progression, where fulfilment in one domain (e.g., relatedness via peer engagement) reinforces others (e.g., growth via efficacy), aligning with Siemens' (2005) connectivism principles of autonomy and connectedness in networked learning. Conceptually, this integrates Fowler's constructs with ERG, bridging motivational psychology and online pedagogy, as echoed in Diep et al. (2019), who positioned ERG to synthesise adult learning theories, knowledge construction, and technology acceptance for holistic OBL designs.

Pedagogical Implications

Instructors should prioritise balanced ERG fulfillment to optimise online ESL motivation: for growth, integrate self-paced modules and efficacy-building feedback (e.g., progress trackers) to leverage high self-efficacy (M=3.78); for existence, emphasize task relevance via real-world applications (e.g., extrinsic rewards like certificates, M=4.52); for relatedness, foster synchronous discussions and instructor responsiveness (M=4.15) to counter disconnection (M=2.50). Platforms must ensure accessibility (e.g., mobile-friendly LMS) and technical support, reducing barriers as in Rasdi et al. (2024), while promoting peer collaboration via breakout rooms to build belonging. No cluster differences imply universal strategies, but personalise via analytics for ESL contexts, enhancing persistence as per Harith et al.'s ERG classroom applications.

Suggestions for Future Research

Several aspects can be explored for future research. First, longitudinal studies could track ERG evolution across semesters, examining mediation by L2 self-efficacy in ESL (e.g., as in EFL online grit research). Second, qualitative or mixed-methods explorations of inter-need frustrations (e.g., via interviews) in diverse demographics beyond UiTM clusters could deepen causal insights. Third, comparative analyses across ESL regions or platforms (e.g., AI-enhanced vs. traditional LMS) could test ERG robustness, incorporating connectivism's diversity and openness. Finally, interventions testing ERG-tailored designs (e.g., gamified growth tasks) on outcomes like retention would provide causal evidence.

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