Open Access Library Journal
2023, Volume 10, e10924
ISSN Online: 2333-9721
ISSN Print: 2333-9705

Lecturer-Facilitated Learning vs. Self-Directed Learning. Which Motivates Students Better? —Structural Equation Modelling Approach

Shanti Gopal Nair[1], Nur Zulaikha Mohamed Sa'dom[2], Godofredo Cristobal Utanes[3]

[1]Centre for Language Studies, Manipal International University, Nilai, Malaysia
[2]School of Management and Business, Manipal International University, Nilai, Malaysia
[3]Ascensus Institute, Singapore
Email: shanti.gopalnair@miu.edu.my, nur.zulaikha@miu.edu.my, fredutanes@ascensus.edu.sg

How to cite this paper: Nair, S.G., Sa'dom, N.Z.M. and Utanes, G.C. (2023) Lecturer-Facilitated Learning vs. Self-Directed Learning. Which Motivates Students Better?—Structural Equation Modelling Approach. *Open Access Library Journal*, **10**: e10924.
https://doi.org/10.4236/oalib.1110924

Received: October 25, 2023
Accepted: November 27, 2023
Published: November 30, 2023

Abstract

The main aim of this research is to analyze Gen Z-ers' preferences with regard to lecturer-facilitated learning and self-directed learning. The responses gathered 214 usable responses through an online survey revealed that Gen Z-ers advocate the use of technology in learning; however, their motivation to learn is higher during face-to-face classes. They find that lecturer-facilitated learning is better than self-directed, technology-facilitated learning. Gen Z-ers also place importance on interactive classroom sessions which give them an opportunity to enhance learning through hands-on activities. The findings of this study can assist lecturers in having a clearer understanding of Gen Z members' expectations, and in providing a meaningful learning experience to students from this generation. To the best of the authors' knowledge, this study is among the first to integrate Rogers' Theory and Self-Directed Learning Theory (SDL) as theoretical support in examining the effect of lecturer-facilitated learning and self-directed learning on university students' motivation. In addition to that, the findings would motivate Gen Z members to reflect on their own learning needs and guide them to be more successful academically.

Subject Areas

Teaching and Learning Technologies

Keywords

Lecturer Facilitated Learning, Malaysian Private Universities, Roger's Theory, Self-Directed Learning, Structural Equation Modelling, Student Motivation, Gen Z-ers

1. Introduction

Educational transformation is required to produce future-ready students who are not only equipped with knowledge but also with competencies that enable them to thrive in academic institutions and workplaces. Societal change results in evolving needs in education; this can be analyzed and understood by observing the differences between generations. The theory of generations is based on the notion that people who belong to a certain generation share significant life events that shape their characteristics, thus forming social cohorts (Hernandez-de-Menendez e*t al.*, 2020) [1]. It is also a belief that members of each generation value education more than the previous generation.

Gen Z-ers, born from 1997 onwards, are considered to be individuals who have grown up mostly in a technological environment (Dimock, 2019) [2]. They have spent their entire lives in a technology-immersed environment that has influenced their way of living and learning. For this generation, technology integrates into their lives in a seamless manner; therefore, they neither consider it to be a barrier nor an opportunity (Pearson, 2018) [3]. They have clear expectations which cause them to believe that they have the ability to pick and choose what they want. The most distinguishing yet challenging factor of this generation is their sense of academic entitlement, which refers to their expectation of success in education immaterial of the amount of personal effort put in (Goldman, & Martin, 2017) [4]. Entitled students believe that they should do minimal work and they tend to blame lecturers when facing difficulties in their studies. They have a strong belief that they are paying customers and should, therefore, enjoy privileges similar to paying consumers.

The implications of being exposed to such an environment are now coming into focus. The extreme shifts in attitude, and lifestyles of Gen Z-ers, shown by research, are both concerning and admirable. It is widely predicted that students from this generation would have unique preferences and learning styles compared to the previous generations, due to exposure to an on-demand environment that is hyper-connected and high-tech (Ishaketal., 2022) [5]. The challenge is to adapt teaching and learning practices to suit the characteristics of Gen Z-ers without condoning their sense of entitlement.

Gen Z-ers' demand for change has put pressure on universities to develop innovative programmes with the aid of technological resources in order to remain relevant in the education industry (Hernandez-de-Menendez, 2020) [1]. The availability of information on demand from various communication technologies gives rise to the question of whether Gen Z-ers are in need of assistance to improve their learning process. The independent nature of this generation also implies that they are capable of motivating themselves and setting achievable goals without coaching. On the other hand, there have been observations of there being glaring deficits in the current students' competencies due to the challenges of handling new technologies, coping with the COVID-19 pandemic, observing political upheavals, and adapting to the changing requirements of education (Flor-

kowski, Wiza, & Banaszak, 2022) [6]. Miller and Mills (2019) [7] also express concern that Gen Z students do not have the ability to anticipate the numerous academic, social, and personal challenges that they need to face when moving from high school to university.

Despite there being an increasing awareness regarding generational differences and the important role that lecturers play in improving students' performance, little research has been carried out to analyze the connection between these two areas. The focus of existing research has been more on secondary school students rather than tertiary education. This research aims to address the gap through a quantitative examination of Gen Z-ers' preference with regard to lecturer-facilitated learning and self-directed learning in a university setting. The following research objectives were proposed to aid in the analysis:

1) To examine the effect of self-directed learning/technology-assisted learning on student motivation in Malaysian private universities;

2) To examine the effect of lecturer-facilitated learning on student motivation in Malaysian private universities.

Previous publications on the effect of learning efficiency have looked into measuring effectiveness of online teaching delivery and face to face (F2F) classes (Nair and Sa'dom, 2022) [8], exploring the influence of leadership in academia on teaching practice (Nair *et al.*, 2023) [9] and investigating the determinants of e-learning adoption among university students (Sundresan *et al.*, 2023) [10]. Despite the growing awareness regarding generational differences in terms of educational preferences, there is little research conducted in terms of Gen Z-ers' views regarding lecturer-facilitated learning and self-directed learning, especially empirical. The findings of this study provide insight into Gen Z-ers' learning paradigm. This valuable information can assist lecturers in providing a meaningful and impactful learning experience to Gen Z students. In addition to that, the findings will motivate Gen Z members to reflect on their own learning needs and aspirations. Having a clearer understanding of their characteristics and expectations can assist them in being more successful academically.

2. Literature Review and Conceptual Framework

2.1. Theoretical Underpinning

This research employed Rogers' Theory and Self-Directed Learning Theory (SDL) as the theoretical basis. Rogers as cited in the University of Wyoming (2023) [11] article, emphasizes the importance of having teachers who are "real people". Rogers posits a teacher who focuses on meaningful experiential learning is considered to be extremely valuable as students must engage in whole-person learning to experience personal growth. Teaching is much more challenging than learning and the primary role of a teacher is not to regurgitate information obtained from sources but to train students to acquire good learning practices.

Self-Directed Learning Theory (SDL), on the other hand, involves change that is self-directed in which students are fully aware of the need for change and un-

derstand the change process (Boyatzis, 2001) [12]. This learning method places importance on learners' intrinsic drive to access information by themselves at a time chosen by them.

2.2. Lecturer-Facilitated Learning

Managing undergraduates from diverse backgrounds with unique perspectives has created an interest in the effect that caring lecturers have on their performance (Miller, & Mills, 2019) [7]. Roger's Theory, which was developed in the 1980s, emphasizes that significant learning is determined by certain attitudinal qualities that occur in personal relationships between facilitators and students (Learning Theories, 2013) [13]. The quality of this relationship is extremely important as meaningful learning only takes place when there is an emphasis on trust, understanding, and congruence (Florkowski, Wiza, & Banaszak, 2022) [6].

Roger's theory of learning which is based on using a humanistic approach to psychology applies mainly to adult learners. He advocates that educators play a key role in the learning process, not as people who regurgitate the content of textbooks but as facilitators of learning who build positive personal relationships with students. The theory stresses that educators need to be aware of their own feelings and should have the ability to communicate what they feel clearly. At the same time, they should accept students' feelings and develop trust in students' abilities. According to Rogers, all human beings have an inborn inclination to learn, and only through experiential learning can learners' needs be addressed (Culatta, 2023) [14]. Facilitators' influence as climate creators in a classroom, plays a key role in building an understanding of the students' need to play the role of active learners. Therefore, educators need to have an empathetic nature that thrives to understand students' perspectives as well as reactions regarding the process of learning.

2.3. Self-Directed Learning

Self-directed learners are required to participate actively in their own learning process by referring to online resources, completing assignments, and setting their learning goals. Dr R. Boyaztzis developed the Theory of Self-Directed Learning which posits that individuals are capable of taking charge of their own learning (Trainer's Library, 2020) [15]. As the first step, learners should develop a clear understanding of what they intend to become as the theory emphasizes that learners know themselves best and do not need to be influenced by others in the process of creating a plan to become an "ideal self".

The second step is to create an avenue for self-reflection to understand the "real self" and current status. The third step is to work on matching the ideal self with the real self in order to understand the steps that need to be taken to address strengths and weaknesses. The fourth step is for learners to come up with learning strategies to reduce weaknesses and achieve their goal of transforming into their ideal selves. The final step is to develop a study plan with a trusted

educator in order to transform from the real self to the ideal self.

Knowles in Weill Cornell Medicine-Qatar (2014) [16] defines self-directed learning as a process in which students take the main responsibility, with or without the help of others, in identifying their learning needs, forming their own learning goals, identifying learning resources, employing appropriate learning strategies, and assessing learning outcomes. Knowles believes that maturity results in students becoming more self-directed and autonomous. The theory clearly indicates that the role of lecturers' is to facilitate students' learning process and assist them in forming achievable goals. Students need to be completely responsible for their own learning process and must have the ability to monitor their progress.

In addition to that, in order for self-directed learning to be effective, technology readiness is a critical requirement as the usage of multimedia content and communication is imperative in accomplishing learning goals. Studies have proven that students' technological readiness and the adoption of learning technologies influence the success of e-learning (Geng *et al.*, 2019) [17]. Students' perception of web-based learning technologies inevitably influences learning behaviour as students who are able to access and adopt online materials are more successful in using the self-directed learning approach.

For self-directed learning to be successful, students need to have a mature mindset that is focused on learning outcomes that are not only set to fulfill course requirements but also to enhance their own knowledge and skills. They need to have the ability to manage their time efficiently and reflect on the choices they make on a daily basis. In addition to that, the information and observations assembled during the lifetime of individuals are a crucial contributing factor in the success of self-dependent learning (Robertson Jr. *et al.*, 2021) [18].

2.4. Students' Learning Styles and Motivation to Learn

Educating students is the main service provided by universities; therefore, quality is a factor that cannot be compromised (Nair, & Bhandar, 2022) [19]. Students respond in various ways to the phenomenon of learning and these responses are dependent on their preferred learning styles; therefore, the retention of content is enhanced when students as well as educators are aware of these unique learning styles (Cetin, & Erel, 2018) [20]. It has been observed that the youngest generation in universities currently needs more care and guidance from lecturers than students from previous generations (Goldman and Martin, 2017) [4]. It is therefore imperative that we analyze the characteristics of Gen-Zers which have given rise to their learning needs.

Gen-Zers' attention span is considered to be short; it can be as short as eight seconds. This is mainly due to exposure to constantly changing screens and multiple platforms of data (Diz, 2021) [21]. Therefore, it is not feasible to expect them to focus on a single task for a lengthy period of time. Miller and Mills (2019) [7] point out that Gen Z students are quick to get bored; therefore, they

expect lecturers to do more than just lecture by providing opportunities for collaborative learning with peers, in and out of the classroom setting. In order to respond to this trait, classroom activities need to be divided into shorter segments. Interactive activities can also assist in lengthening the attention span of students by reducing their windows of thought. Giunta (2017) [22] proposes encouraging project work and setting weekly goals that are more manageable to encourage Gen-Z to experience the gratification that they seek. Experiential learning which involves interpreting, analyzing, and utilising information, motivates Gen Z students more than mundane lectures where they are only at the receiving end.

Lecturers need to ensure that Gen Z-ers manage their time efficiently by keeping them engaged during their self-directed study time. Schwinger, & Ladwig (2018) [23] propose the use of a skills-based model to ensure Gen-Z members are prepared for future employment. Their research proved that Gen Z-ers are focused self-starters who want to master skills that are valued. These characteristics need to be nurtured through projects that are designed to cater to the needs of Gen Z. In order to make informed decisions regarding teaching and learning strategies, lecturers need to have the ability to analyze students' learning needs, the classroom environment, and students' continuous performance (DeLuca, & Chi, 2014) [24].

In addition to that, Gen-Zers value the use of appropriate technology in interactive classroom activities. Hernandez-de-Menendez *et al.*'s (2020) [1] research has proven that technology is greatly beneficial in enhancing competencies, motivating students to attend classes as well as increasing the effectiveness of the teaching and learning process. Lecturers play a central role in the adoption of technology to mediate learning. Enabling the use of applications and technology-assisted platforms, allows students to feel more confident as they are coaxed into believing that they are in familiar territories which can support them in completing tasks effectively. Moldenhauer, Londt, and Le Grange (2017) [25] stress that tertiary education needs to be practical. Planning for innovative classroom activities with the use of media and technology can assist in forming a much-required link between lecturers' teaching practices and students' learning needs.

Besides planning for effective classroom activities and projects, other factors that contribute positively to Gen Z-ers' academic performance are intrinsic and extrinsic motivation. Motivational factors consist of the affective component which relates to students' emotional reactions to the academic institutions and tasks; the expectancy component which refers to students' understanding regarding their own ability, and the value component which is connected to students' goals for completing a task. Slavin as cited in Giunta (2017) [22] describes Gen Z-ers as students who thrive to be engaged in meaningful, challenging experiences and want to be heard. They are also cautious in ensuring that they do not repeat the mistakes observed in previous generations. Academicians who are

able to delve into the students' world play a vital role in increasing students' motivation level, by creating an understanding of the relevance of what is being learned (Johnson 2017) [26]. In order to cater to the needs of the current generation, Goldman, and Martin (2017) [4] recommend that lecturers should strategise effectively to ensure the course content is relevant to students' needs, diversify teaching methods by incorporating the use of technology, and work to counteract the negativity associated with academic entitlement.

Awareness of the factors which Gen Zers place importance on, can create a major impact on the manner in which classrooms are managed. As stressed by Cameron (2017) [27], effective teaching is dependent upon the interaction between lecturers' knowledge of the subject-matter and pedagogical skills. Gen Z-ers need psychological safety; therefore, they yearn for inspirational guides who not only provide feedback but also protect their interests (Diz, 2021) [21]. Compared to previous generations, teaching Gen Z students requires the ability to create an active learning environment by blending various techniques.

As emphasised by Geng (2019) [17] learning motivation influences the level of engagement in the learning process. Motivation affects students' personal goal orientation which can determine content understanding and contribution to group work. Students with a higher level of motivation will, therefore, succeed in mastering content better than those with a lower level of motivation.

From the information gathered from the literature review, the following hypotheses have been constructed:

1) There is a positive relationship between lecturer facilitated learning and student motivation.

2) There is a positive relationship between technology assisted/self-directed learning and student motivation.

2.5. Conceptual Framework

Figure 1 shows the proposed relationships among the study constructs:

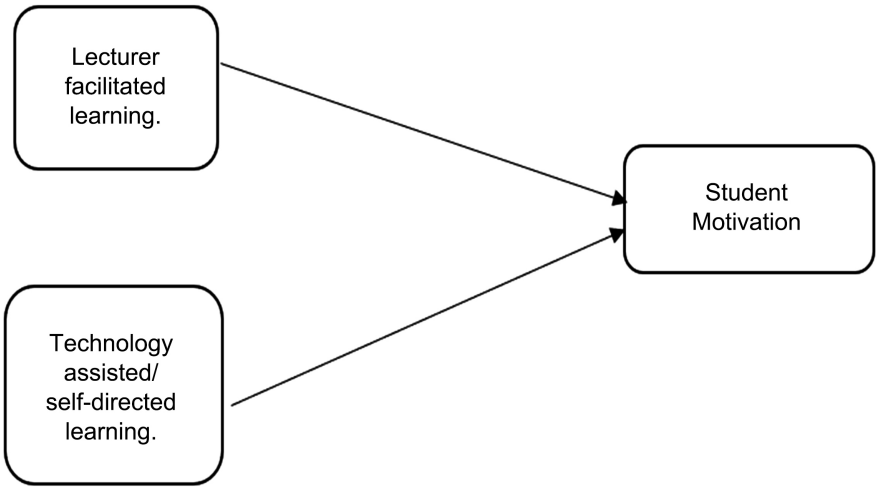

Figure 1. Proposed conceptual framework.

3. Methodology

This paper addresses the questions regarding the learning preferences of Generation Z with regard to teacher-facilitated classes and self-directed learning. The survey instrument included items adapted from a previous study by Pearson (2018) [3] that focused on Gen Z members' behaviors, attitudes, and preferences in education.

To gather data for Gen-Z members, the purposive sampling method was utilised. Purposive sampling, which is also understood as judgmental, selective, or subjective sampling, involves sampling techniques that are dependent on the judgment of researchers in selecting the information that is to be studied (Sharma, 2017) [28]. This sampling method enables researchers to justify and make generalisations that are theoretical, analytical, and logical from the samples obtained.

For this study, undergraduate students from Manipal International University born between 1997 to 2012 (Generation Z) were selected as the respondents. The rule of thumb advocated by Hair *et al.* (2011) [29] was used to determine the sample size. Ten respondents are required for each item in the survey. Fourteen questions were included in this survey; therefore, at least 140 respondents were needed for the data analysis. Out of 250 distributed questionnaires, 214were found usable for further analysis.

Three senior lecturers assessed the content validity of the questionnaire to check for the level of appropriateness, wording and to ensure the questionnaire is suitable for the study context. The face validity of the amended questionnaire was then assessed by distributing the questionnaire to twenty respondents to check the level of understandability (Cavana *et al.*, 2021) [30]. The reliability of the questionnaire was ensured by ensuring all respondents completed the questionnaire within a period of ten days.

Gen Z's preference for forms of education was analyzed by using a descriptive, correlational design. The survey questionnaires were administered online by invitation; therefore, convenience nonprobability sampling was used. For all the questions in the survey, a Likert scale ranging from 1 to 5 (1 = strongly disagree, 2 = agree, 3 = neutral, 4 = agree, and 5 = strongly agree), was used. The strength and direction of the relationships between the variables were analyzed by the using the summary provided by Google Forms.

4. Results and Findings

This research reveals that for Gen Z students, lecturer-facilitated learning is more effective than self-directed learning. The students advocate the use of technology in learning; however, they clearly express that motivation to learn is higher during face-to-face classes. Gen Z-ers also emphasize the need for interactive classroom sessions which give them an opportunity to enhance learning through hands-on activities.

4.1. Demographic and Background Discussion

4.1.1. The Efficacy of Self-Directed Learning

The responses to the question on online videos enhancing learning show that 54% of the respondents find them useful. The remaining respondents are doubtful regarding this mode of learning.

As for online courses, 21.9% of the respondents believe that they are more effective than face-to-face classes. However, a large percentage of the respondents, 75% to be precise agree that technology can transform the way college students learn in the future; while 78.9% support the notion that technology can greatly enhance the college learning experience. The question regarding whether self-directed learning is more effective than lecturer-facilitated learning drew a negative response, as a small percentage of 27.2% support self-directed learning compared to face-to-face classes.

4.1.2. The Effectiveness of Lecturer-Directed Learning

Respondents showed a positive reaction to the question on the effectiveness of in-person classroom activities. A total of 82% agree that in-person activities with classmates enhance their learning process and 74.6% are in favour of lecture-based teaching. Interactive classroom activities garnered 76.3% support. A large number of respondents, 77.7% to be precise, believe that learning is more effective when a lecturer is leading the instruction. Regarding lecturer-facilitated classroom learning being more effective than self-directed learning, 65.8% of the respondents agreed. The highest percentage drawn was for lecturers' role in educating Gen Z-ers; 84.2% believe that lecturers play an important role in college students' learning and development.

4.1.3. Motivation

Out of 228 respondents, only 115 (50.4%) claim that they are motivated during self-directed learning while 65.8% believe that motivation is higher during lecturer-facilitated learning. Most respondents (71.5%) have shown agreement that motivation to learn is higher when lecturers use diversified teaching methods, as 27.6% of the respondents have opted for strongly agree and 43.9% have opted for agree.

4.2. Descriptive Statistics and Normality Test

To ensure the data is normally distributed (Hair *et al.*, 2014) [31], a univariate normality test and a variance inflation factors (VIF) test were performed. This includes checking the skewness, kurtosis, and multicollinearity issues. As depicted in **Table 1**, the VIF values for both lecturer-facilitated/directed learning-student motivation and self-directed learning-student motivation links are below the cut-off value of 5 as suggested by Hair *et al.* (2014) [31]. Thus, it confirmed there is no multicollinearity issue in this research.

Furthermore, as shown in **Table 2**, the value of skewness and kurtosis for all constructs of this study is within the range of −1 + 1. It confirmed the normality

Table 1. VIF test of multicollinearity.

	VIF
LECFCLT_ -> STDMTV	1.027
SELFDRCTD_ -> STDMTV	1.027

Table 2. Descriptive statistics and normality test.

Construct	Mean	Standard deviation	Skewness	Kurtosis
SELFDRTD	3.49	0.573	0.093	0.793
LECFCLT	4.02	0.539	−0.125	−0.518
STDMTVTN	3.74	0.550	0.401	0.359

of the data as recommended by Hair *et al.* (2019) [32]. As outlined in **Table 2**, the means for all constructs are in the range of 3.49 - 4.02, whereas the value of standard deviation is within the range of 0.539 - 0.573.

4.2.1. Evaluation of the Research Model

The evaluation of the research model is conducted by assessing the measurement model and structural model using SmartPLS 4 software (Ringle *et al.*, 2015) [33]. Precisely, this study used structural equation modeling - partial least square (PLS-SEM) for data analysis because of several factors. For instance, both formation and reflection variables can be supported by PLS. (Cepeda-Carrion *et al.*, 2018) [34] Also, this exploratory study's aim is to look at the theoretical causal model. Thus, PLS-SEM is most appropriate in this regard. For the current research, the two-stage approach as recommended by Anderson and Gerbing (1988) [35] was employed. The first stage includes the assessment of the measurement model and the second stage includes the assessment of the structural model.

4.2.2. Assessment of the Measurement Model

The assessment of the measurement model involves the evaluation of factor loadings, average variance extracted (AVE), composite reliability (CR), (Heterotrait-Monotrait Ratio) HTMT and Fornell-Larcker Criterion. As demonstrated in **Table 3**, the factor loadings for each measurement item are greater than the threshold value of 0.5 (Anderson and Gerbing, 1988) [35]. The CR value is also above the cut-off value of 0.7 (see **Table 3**) (Hair *et al.*, 2014) [31]. Thus, based on the assessment of the measurement model, the reliability of all the study constructs was achieved.

Next, to ensure the validity of the study construct, convergent validity assessment by analyzing AVE value and discriminant validity assessment by evaluating (Heterotrait-Monotrait Ratio) HTMT and Fornell-Larcker Criterion were performed. AVE values for SELFDRTD, LECFCLT, and STDMTVTN are above

0.5 (see Table 3), in line with the recommendation of the AVE value (Hair *et al.*, 2014). Also, all HTMT value is lesser than the cut-off value of 0.85 (see Table 4).

As demonstrated in Table 5, (Heterotrait-Monotrait Ratio) HTMT, all of the square root of AVE of each construct is higher than its correlation with other constructs in the research model, followed the recommendation by Fornell and Larcker (1981) [36]. These results confirmed the validity of all study's construct.

Table 3. Reliability and validity.

Constructs	Items	Loadings	AVE	CR
SELFDRTD	SELFDRTD1	0.589	0.534	0.873
	SELFDRTD3	0.919		
	SELFDRTD4	0.885		
LECFCLT	LECFCLT1	0.696	0.658	0.848
	LECFCLT2	0.743		
	LECFCLT3	0.721		
	LECFCLT4	0.773		
	LECFCLT5	0.712		
	LECFCLT6	0.736		
STDMTVTN	STDMTVTN2	0.857	0.723	0.839
	STDMTVTN3	0.843		

Notes: SELFDRTD = self-directed learning/technology-assisted learning; LECFCLT = lecturer facilitated learning; STDMTVTN = student motivation; SELFDRTD2, SELFDRTD5, and STDMTVTN1 were removed to increase AVE for SELFDRTD and STDMTVTN respectively.

Table 4. (Heterotrait-monotrait ratio) HTMT.

	LECFCLT_	SELFDRCTD_	STDMTV
LECFCLT_			
SELFDRCTD_	0.213		
STDMTV	0.736	0.385	

Table 5. Fornell-larcker criterion.

	LECFCLT_	SELFDRCTD_	STDMTV
LECFCLT_	0.730		
SELFDRCTD_	0.163	0.811	
STDMTV	0.530	0.265	0.850

4.2.3. Assessment of Structural Model

The assessment of the structural model involves the evaluation of the coefficient of determination (R^2), f^2, t-values, and path coefficients by running bootstrapping using SmartPLS 4 software (Hair *et al.*, 2017) [37]. First, the value of R^2 was checked for the analysis of the explanatory power of the research model. According to Table 6, the value of R^2 of LECFCLT and SELFDRCTD is 0.314, confirming the substantial amount of predictive power (Astrachan *et al.*, 2014) [38].

In addition, LECFCLT ($f^2 = 0.356$) and SELFDRCTD ($f^2 = 0.048$) exert a large and small effect on STDMTV respectively (refer to Table 6). Based on Table 6 also, the findings from this current study showed that lecturer-facilitated learning (LECFCLT) ($\beta = 0.501$, $t = 8.787$, $p < 0.01$) and self-directed learning (SELFDRCTD) ($\beta = 0.184$, $t = 2.612$, $p < 0.01$) have a positive association with student motivation (STDMTV). Hence, HI and H2 are supported.

Figure 2 showed the structural model for the current research.

Table 6. Direct relationship.

Hypotheses	Relationship	Path coefficient	Standard error	t value	R^2	f^2	Supported
H1	LECFCLT_ -> STDMTV	0.501	0.057	8.787	0.314	0.356	Yes
H2	SELFDRCTD_ -> STDMTV	0.184	0.070	2.612		0.048	Yes

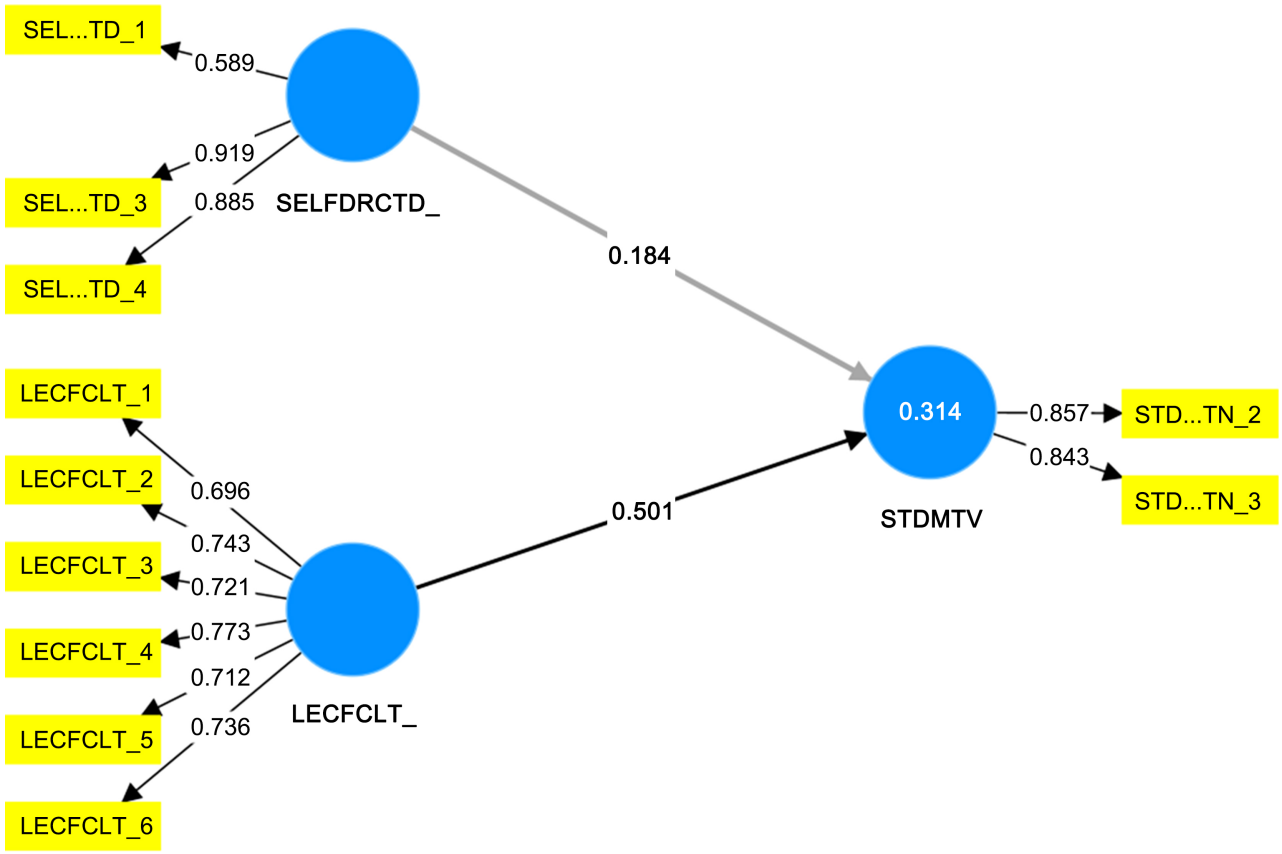

Figure 2. Structural model for the current research.

5. Discussion

The results of the survey prove that Gen Z students do not favour self-directed learning. They strongly believe that technology-assisted learning is important for their advancement in college education and that technology can transform learning practices; however, they are not confident that self-directed learning is more effective than lecturer-facilitated learning. As stressed by Knowles in Weill Cornell Medicine-Qatar (2014) [16] maturity, discipline, and an immense sense of responsibility are required for students to be successful self-directed learners. This method of learning is beneficial for students who are able to set clear goals and follow through by monitoring their own progress closely.

The obtained results support Roger's Theory as respondents have clearly supported the notion that lecturers play a crucial role in their learning process, and that lecturer-facilitated learning is much more effective than self-directed learning. Connecting these findings with the previous section on the use of technology can give educators a clear picture of the role that they need to play in integrating the use of technology, interactive classroom activities, and group work with peers, in order to create a meaningful learning environment for Gen Z students. Lecturers need to keep in mind that Gen Z-ers do not require subject experts who reproduce textbook content that can be easily accessed using search engines, rather they need to take on the role of facilitators who form positive personal relationships with students by building trust. The findings of this research are consistent with Roger's Theory which stresses the importance of attitudinal qualities that occur in personal relationships between facilitators and students. Trust, understanding, and congruence pave the way for significant learning to materialise (Learning Theories, 2013) [13].

The results also reinforce the notion that Gen Z students appreciate the roles played by lecturers and that their motivation is higher when they receive guidance. This supports Goldman and Martin's (2017) [4] statement that compared to previous generations, Gen Z students need more care and nurturing from lecturers. In addition to that, lecturers also need to increase the use of interactive activities to cater to the needs of students. When teaching diversified groups, a one-size fit all pedagogical practice can be avoided by opting to utilise task-based teaching methodology with a rich mixture of interactive activities.

6. Conclusion

Active involvement in classroom activities, analysis of learning materials through the use of critical thinking skills, and a strong presence of involved lecturers, form a perfect setting for an effective teaching and learning process. As postulated in the Community of Inquiry framework developed by Garrison *et al.* (2000) [39], social presence, cognitive presence, and teacher presence are essential to support collaborative learning. Learners' ability to have responsible social behaviour enables them to interact well with student groups to achieve learning outcomes. Cognitive presence relates to the level at which meaning can be absorbed

through learners' practical inquiry and critical thinking skills while teaching presence is related to facilitation and planning of pedagogical design to direct students' learning process. These three crucial factors are closely interrelated and determine the level of success in Generation Z students' learning.

7. Recommendations

The above findings provide basis for education institutions catering to Gen Z students in Malaysia, at the very least, to acknowledge the significance of the use of technology, used in efficient ways, in the classroom setting to meet the needs and preferences of these students. Encouraging hands-on learning, recognizing that Gen Z students in Malaysia enjoy engaging in interactive learning, is also highly recommended. Thus, instructors should include projects, discussions, and other approaches to provide experiential learning. Lecturers should also engage with students in a more personalized manner and ensure to build trust with their learners. Gen Z has varying demands; thus, using task-based teaching techniques could expose them to a range of interactive classroom, outdoor, and online activities. As Gen Z students require individualized support, education institutions should focus on tactics that increase motivation in self-directed learning; foster critical thinking abilities and collaborative learning, emphasizing social and cognitive presence; encourage them to firmly define learning objectives and track their progress to develop self-discipline and maturity, benefiting from self-directed learning.

To facilitate the requirements of Gen Z students especially in self-directed learning environments, it is necessary to ensure that lecturers have the chance to grow professionally by finding ways and means for them to learn new technologies and acquire more interactive teaching capabilities, establish systems for continuous feedback from Gen Z learners and consider relevant inputs to improve processes and systems surrounding them.

8. Limitations and Future Research Direction

This research has presented some noteworthy findings; however, there are some limitations that need to be addressed by future researchers. A positivist approach was employed by using the quantitative method. A deeper understanding can be gained by using a mixed-method approach. For this study, the respondents were Gen Z students pursuing tertiary education in Malaysia. Thus, future research could include students from other continents as it will give more valuable contributions to the education literature. Scaling up the sample size proportionately in this case would be appropriate. Future studies also could consider exploring the different kinds of classroom environments that Gen Z members might prefer. Examining how different generations' choices for schooling may change in various institutional and cultural settings would also be a good subject of future studies.

Conflicts of Interest

The authors declare no conflicts of interest.

References

[1] Hernandez-de-Menendez, M., Escobar, C.A. and Morales-Menendez, R. (2020) Educational Experiences with Generation Z. *International Journal on Interactive Design and Manufacturing* (*IJIDeM*), **14**, 847-859. https://www.researchgate.net/publication/343356700_Educational_experiences_with_Generation_Z https://doi.org/10.1007/s12008-020-00674-9

[2] Dimock, M. (2019) Defining Generations: Where Millennials End and Generation Z Begins. https://www.pewresearch.org/fact-tank/2019/01/17/where-millennials-end-and-generation-z-begins

[3] Pearson (2018) Meeting the Expectations of Gen Z in Higher Education. https://www.pearson.com/us/content/dam/one-dot-com/one-dot-com/us/en/files/PSONA5646-8150_TIDL_GenZ_Infographic_Print_FINAL.pdf

[4] Goldman, Z. and Martin, M. (2017) Millennial Students in the College Classroom: Adjusting to Academic Entitlement. *Communication Education*, **65**, 365-367. https://www.researchgate.net/publication/303711566_Millennial_students_in_the_college_classroom_adjusting_to_academic_entitlement https://doi.org/10.1080/03634523.2016.1177841

[5] Ishak, N.M., Ranganathan, H. and Harikrishnan, K. (2022) Learning Preferences of Generation Z Undergraduates at the University of Cyberjaya. *Journal of Learning for Development*, **9**, 331-339. https://doi.org/10.56059/jl4d.v9i2.584

[6] Florkowski, R., Wiza, A. and Banaszak, E. (2022) The Rogerian Student-Centered Learning Approach and the Democratization of Education. *Polish Sociological Review*, **218**, 273-288.

[7] Miller, A.C. and Mills, B. (2019) 'If They Don't Care, I Don't Care': Millennial and Generation Z Students and the Impact of Faculty Caring. *Journal of the Scholarship of Teaching and Learning*, **19**, 78-89. https://files.eric.ed.gov/fulltext/EJ1234123.pdf https://doi.org/10.14434/josotl.v19i4.24167

[8] Nair, S.G. and Sa'dom, N.Z.M. (2022) Online Teaching vs Face to Face (F2F)—Insight from Lecturers and Students of Manipal International University. *International Journal of Academic Research in Progressive Education and Development*, **11**, 1610-1625. https://doi.org/10.6007/IJARPED/v11-i3/15128

[9] Nair, S.G., Sa'dom, N.Z.M., Yusoff, S.H.M. and Altounjy, R. (2023) The Influence of Leadership in Academia on The Standard of Teaching in Malaysian Private Universities. *Journal of Academic Research in Progressive Education and Development*, **12**, 763-782. https://doi.org/10.6007/IJARPED/v12-i2/16956

[10] Sundresan, K., Nyen, V.C., Sa'dom, N.Z.M. and Yusoff, S.H.M. (2023) Learn from Anywhere, Anytime: Factors Influencing the Adoption of E-Learning System in Malaysian Private University. *International Journal of Innovation and Business Strategy* (*IJIBS*), **18**, 26-36.

[11] University of Wyoming (2023) Learning Theories for Educators. https://www.uwyo.edu/aded5050/5050unit9/rogers.asp

[12] Boyatzis, R.E. (2001) Unleashing the Power of Self-Directed Learning. Consortium for Research on Emotional Intelligence in Organizations. http://www.eiconsortium.org/pdf/self_directed_learning.pdf

[13] Learning Theories (2013) Facilitation Theories. https://www.learning-theories.org/doku.php?id=instructional_design:facilitation_theory

[14] Culatta, R. (2023) Experiential Learning (Carl Rogers). https://www.instructionaldesign.org/theories/experiential-learning/

[15] Trainer's Library (2020) Boyatzis' Theory of Self-Directed Learning. https://www.trainerslibrary.org/boyatzis-theory-of-self-directed-learning/

[16] Weill Cornell Medicine-Qatar (2014) Self-Directed Learning (SDL): A Brief Comprehensive Analysis. https://qatar-weill.cornell.edu/continuing-professional-development/topic-of-the-month/archive/self-directed-learning-sdl-a-brief-comprehensive-analysis

[17] Geng, S., Law, K.M.Y. and Niu, B. (2019) Investigating Self-Directed Learning and Technology Readiness in Blending Learning Environment. *International Journal of Educational Technology in Higher Education*, **16**, Article No. 17. https://doi.org/10.1186/s41239-019-0147-0

[18] Robertson Jr., D.N., Zach, S. Choresh, N. and Rosenthal, I. (2021) Self Directed Learning: A Longstanding Tool for Uncertain Times. *Creative Education*, **12**, 1011-1026. https://doi.org/10.4236/ce.2021.125074

[19] Nair, S.G. and Bhandar, M. (2022) Impact of Academic Leaders on the Teaching Quality in Malaysian Private Universities. *The 9th National and 7th International Conference on Research and Innovation Development for the Next Normal Society: Transition from the New Normal*, Thailand, 1200-1230. https://www.researchgate.net/publication/365614651_IC-03_Impact_of_Academic_Leaders_on_the_Teaching_Quality_in_Malaysian_Private_Universities

[20] Cetin, S.Y. and Erel, S. (2018) Determining the Learning Preferences of the Students of the Faculty of Health Sciences in Cyprus International University. *SHS Web of Conferences*, **48**, Article 01026. https://doi.org/10.1051/shsconf/20184801026

[21] Diz, M.R. (2021) Gen Z and Millennials in the Workplace: How Are Leaders Adapting to Their Short Attention Span and How Will They Keep Them from Leaving a Qualitative Study. FIU Electronic Theses and Dissertations. https://digitalcommons.fiu.edu/cgi/viewcontent.cgi?article=6163&context=etd

[22] Giunta, C. (2017) An Emerging Awareness of Generation Z Students for Higher Education Professors. *Archives of Business Research*, **5**, 90-104. https://doi.org/10.14738/abr.54.2962

[23] Schwieger, D. and Ladwig, C. (2018) Reaching and Retaining the Next Generation: Adapting to the Expectations of Gen Z in the Classroom. *Information Systems Education Journal* (*ISEDJ*), **16**, 45-54. https://files.eric.ed.gov/fulltext/EJ1179303.pdf

[24] DeLuca, C. and Chi, Y.L. (2014) Preparing Teachers for Assessment within Diverse Classrooms: An Analysis of Teacher Candidates' Conceptualizations. *Teacher Education Quarterly*, 3-24. https://files.eric.ed.gov/fulltext/EJ1078652.pdf

[25] Moldenhauer, L., Londt, C. and Le Grange, J. (2017) Academic Leadership Challenges—Ensuring Relevance in the Work Integrated Learning Space. *Proceedings of the International Conference on Intellectual Capital, Knowledge*, Cape Town, 330-335.

[26] Johnson, D. (2017) The Role of Teachers in Motivating Students to Learn. *BU Journal of Graduate Studies in Education*, **9**, 46-49.

[27] Cameron, E.A. and Pagnattaro, M.A. (2017) Beyond Millennials: Engaging Generation Z in Business Law Classes. *Journal of Legal Studies Education*, **34**, 317-324. https://doi.org/10.1111/jlse.12064

[28] Sharma, G. (2017) Pros and Cons of Different Sampling Techniques. *International Journal of Applied Research*, **3**, 749-752.

[29] Hair, J.F., Ringle, C.M. and Sarstedt, M. (2011) PLS-SEM: Indeed a Silver Bullet. *Journal of Marketing Theory and Practice*, **19**, 139-152. https://doi.org/10.2753/MTP1069-6679190202

[30] Cavana, R., Delahaye, B. and Sekeran, U. (2001) Applied Business Research: Qualitative and Quantitative Methods. John Wiley & Sons, Hoboken.

[31] Hair, J.F., Hult, G.T.M., Ringle, C.M. and Sarstedt, M. (2014) A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM). SAGE Publications, Thousand Oaks, CA.

[32] Hair, J.F., Sarstedt, M. and Ringle, C.M. (2019) Rethinking Some of the Rethinking of Partial Least Squares. *European Journal of Marketing*, **53**, 558-566. https://doi.org/10.1108/EJM-10-2018-0665

[33] Ringle, C.M., Wende, S. and Becker, J.-M. (2015) SmartPLS 3. SmartPLS, Bönningstedt.

[34] Cepeda-Carrion, G., Cegarra-Navarro, J.-G. and Cillo, V. (2018) Tips to Use Partial Least Squares Structural Equation Modelling (PLS-SEM) in Knowledge Management Article Information. *Journal of Knowledge Management*, **23**, 67-89. https://doi.org/10.1108/JKM-05-2018-0322

[35] Anderson, J.C. and Gerbing, D.W. (1988) Structural Equation Modeling in Practice: A Review and Recommended Two-Step Approach. *Psychological Bulletin*, **103**, 411-423. https://doi.org/10.1037/0033-2909.103.3.411

[36] Fornell, C. and Larcker, D.F. (1981) Evaluating Structural Equation Models with Unobservable Variables and Measurement Error. *Journal of Marketing Research*, **18**, 39-50. https://doi.org/10.1177/002224378101800104

[37] Hair, J., Hult, G., Ringle, C., *et al.* (2017) A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM). 2nd Edition, Sage Publications, Thousand Oaks.

[38] Astrachan, C.B., Patel, V.K. and Wanzenried, G. (2014) A Comparative Study of CBSEM and PLS-SEM for Theory Development in Family Firm Research. *Journal of Family Business Strategy*, **5**, 116-128. https://doi.org/10.1016/j.jfbs.2013.12.002

[39] Garrison, D.R., Anderson, T. and Archer, W. (2000) Critical Inquiry in a Text-Based Environment: Computer Conferencing in Higher Education. *The Internet and Higher Education*, **2**, 87-105. https://doi.org/10.1016/S1096-7516(00)00016-6