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Understanding sustainable curriculum: The impact of designer teaching climate on student self-efficacy and academic self-control

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Abstract

The concept of "designer teaching" has emerged as a promising approach to fostering student success by creating engaging and relevant learning experiences that are tailored to the diverse needs and capabilities of learners, aiming to provide and impart knowledge effectively to them. Hence, this study investigates the impact of designer teaching climates on student outcomes, specifically self-efficacy and academic self-control, within the context of sustainable learning environments that are influenced by design. Using the quantitative correlational research design that involves careful collection, analysis, and presentation of data, a sample of 445 secondary school students and 65 teachers was effectively selected from schools characterized by moderate-to-high levels of academic achievement, which offer a good basis for the establishment of a designer teaching climate. Thus, data were collected using the Academic Self-Control Scale, the Self-Efficacy Questionnaire for Adolescents, and the Designer Teacher Scale to accurately measure the outcomes and assess the way students and teachers perceive the learning ecosystem. Consequently, a one-way multivariate analysis of covariance (MANCOVA) was conducted to examine the relationship between designer teaching climate and student outcomes, controlling for grade level and gender in order to capture all the relevant factors and influence the teacher-student relationship in a proper manner. The findings were indeed significant and revealed that a designer teaching climate had a significant positive effect on students' self-efficacy but not on their academic self-control, since the former appreciated the teacher's efforts in enhancing their performance, unlike the latter. However, gender differences were observed in both self-efficacy and academic self-control, which suggests that the perception of designer teaching climate differs between boys and girls, with girls reporting higher levels of academic self-control than boys while they equally perform well in self-efficacy. Furthermore, grade level had a significant effect on self-efficacy, with older students reporting higher levels of self-efficacy than younger students, thus indicating incremental advancement and psychological development on the part of the learner. The study highlights the importance of fostering a designer teaching climate that promotes student self-efficacy and academic self-control, thus enabling them to have a mental orientation, drawing from past experiences, and feeling capable of achieving academically and controlling their academic focus. By creating engaging and relevant learning experiences, designer teachers can empower students to overcome their challenges, academically excel, and unleash their full potential that they did not even think they could achieve. The observed gender and grade level differences underscore the need for differentiated instruction and support that addresses the unique needs of all learners, thus ensuring that every student receives the necessary support to be productive.

Keywords: Academic self-control, Designer teaching climate, Student self-efficacy, Sustainable curriculum.

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1. Introduction

The increasing emphasis on student achievement has led to a spike in interest in the impact of learning environments. Educators and researchers are increasingly acknowledging the enormous significance of a constructive learning climate in steering the success of students. This realization has led to the investigation of novel teaching methods, one of which is the conception of "designer teaching." This approach concentrates on the intentional assembling of learning environments that are both conducive to scholarly activity and stimulate the student's motivation, engagement, and independent learning [1].

At its zenith, designer teaching juxtaposes the responsibilities of the teacher in the 21st century. Designer teaching is a new way for teachers to act, i.e., being the designers and architects of the learning events that teachers have to plan ahead of time in detail, from teaching aids and learning activities to assessment methods. This teaching strategy also heavily emphasizes teachers' key role in developing encouraging and relevant learning experiences that aim to meet the needs of individual learners. The teachers using this method also want the students to leverage technology, cooperate, and be active participants in the learning process to achieve the learning objectives [2].

Designer teaching triumphs in the provision of a learning environment rich in activity, but it is equally important that educators in the classroom cultivate a fertile ground for the students to happen to be independently involved and responsible for their own learning. Studies have shown that a positive learning climate, where respect, trust, and a sense of belonging between the members of a group are the most important elements, can lead to better student outcomes [3]. If students feel that they are in a safe, supportive, and caring climate, it is more likely for them to develop high self-efficacy, the belief, they can succeed [4]. Similarly, the encouragement of the students in a positive learning climate or environment can be a strong factor for the manifestation of academic self-control, i.e., the ability to manage one's thoughts and emotions through social interaction to achieve academic goals [5].

In addition to creating a positive and supportive learning environment, designer teaching brings additional advantageous effects that can drastically affect student achievement and overall development. The prospects of designer teaching in helping to develop a positive learning climate and thus improving student results are enormous. The benefits of designer teaching in the creation of a positive learning climate and the improvement of student outcomes are vast. Moreover, designer teaching can also bring about significant changes in student achievement along with the creation of a positive learning environment. Likewise, Kartal et al. [6] mentioned, "Critical thinking is essentially problematic thinking that includes a close relation with new knowledge and the asking and reasoning of particular questions and producing things about personal preferences rather than the easy reception of information presented." This example indicates the advantages of designer teaching in developing students' skills, which are needed in the 21st century. By developing engaging and relevant learning experiences, designer teachers can be catalysts of student motivation, active learning, and effective teaching, thereby leading to a fulfilling life along the road. By formulating appropriate learning experiences and engaging the students, the teacher, in designer teaching, by driving the student to practice active learning, in turn, can develop in the student a fondness for the subject at hand. Moreover, designer teachers can also aid students in personal development because they grow and flourish into the rest of their lives, which requires emotional intelligence [7]. The sense of community and belonging that these teachers can create is one of the platforms for the students' social-emotional development, which is so important in all aspects of life.

Although a positive learning atmosphere is necessary, the effect of designer teaching often extends beyond that by motivating students to achieve much. The growing interest in the accomplishments of students is a point stressed by the increasing need to have settings that encourage and support students' growth. Teachers as designers, emphasizing plan-based teaching to provide interesting and meaningful learning experiences, can change the learning climate to the extent of developing the students to their full capacity. Teachers can help students deal with, embrace, and exhibit healthy self-regulation using these techniques. — However, designer teachers will take a very vital place in redefining the educational future.

In connection with current knowledge regarding the impact of creating a positive learning environment, this further stresses the necessity of critically analyzing effective ways by which pedagogical approaches can create such conducive spaces for the effective growth of students. There are many innovative pedagogical approaches that are constantly evolving or being introduced that are specifically meant to address the learning needs of students and to promote the sustainability of learning environments. The design approach to pedagogy known as designer teaching advocates for a proactive, adaptable,

and student-centered design that has been widely embraced in recent years. This thesis paper delves into the main concepts of designer teaching, indicating the designer teaching climate, student self-efficacy, and academic self-control as its main elements and sub-elements, while demonstrating how these approaches adopted within the concept have a relation to the future-oriented development of curriculum and its corresponding learning environments.

Around the foundation of creating and sustaining such interesting and appropriate learning environments, the main idea behind designer teaching is based on a learner-centered and proactive praxis. As a pedagogical design model, designer teaching is modeled after the design thinking process and thus encourages educators not to take the traditional view that teaching can be ‘set in stone’ and prescribed as linear [8]. It aims at moving educators away from traditional teacher-centered pedagogies to becoming pedagogical designers who plan and execute learning activities specifically designed for the particular students with regard to their unique backgrounds, interests, and learning styles [1]. Such an approach requires a thorough analysis of the learners, their prior knowledge, motivations, and goals, which then allows teachers to generate engaging and appropriate learning tasks in a way that the students are active participants in the process of learning and constructing their knowledge [9].

This emphasis on individual needs and active learning naturally extends to the creation of a specific learning environment conducive to designer teaching. Central to designer teaching is the establishment of a designer teaching climate. This refers to a learning environment that is conducive to creativity, collaboration, and critical thinking. In such a climate, students feel safe to take risks, experiment with new ideas, and learn from their mistakes [10]. The teacher acts as a facilitator, guiding students through the learning process, providing support and feedback, and fostering a sense of ownership and agency among learners [11]. This approach encourages students to become active participants in their learning journey, promoting deeper understanding and long-term retention [12].

Active learning and student agency as top priorities are inseparably connected to the development of self-efficacy, a main ingredient in successful learning. "Student self-efficacy", another important parameter of designer teaching, means an individual's belief in succeeding in a particular task or condition [4]. Designer teachers aim to create a sense of self-efficacy in their pupils by giving them a chance to succeed and receiving feedback and guidance from the instructor. Moreover, they also help them come up with learning strategies that work [13]. Learners who have faith in their cognitive abilities are most likely to undertake difficult tasks, remain resolute in the face of problems, and attain their learning objectives [14].

Nevertheless, self-efficacy, the mainstay of learning with a high level of confidence, is linked to the concept of controlling the learning environments by teacher designers, which leads to maximum potential in the learners. In addition, designer teaching also focuses on the development of academic self-control, which is seen in the ability to regulate the student's feelings, thoughts, and actions to be successful in school [15]. This encompasses the competencies of time management, goal setting, and self-motivation [16]. A teacher's role in teaching self-control is to point out the expectations clearly, let the students be creative in the process of self-reflection, and teach the students to handle their own learning with the use of strategies [17]. Self-control is a veritable tool that educators can exploit to facilitate students' autonomy, thus enabling them to own their learning and become independent, permanent, and successful students [18].

This orientation towards self-control in the designer training course serves the wider purpose of building a curriculum that will be the driving mechanism through which students will be empowered to become lifelong learners and master the art of finding means to cope with the new and advanced knowledge of the future. Designer teaching principles are in fact, very much parallel to the development of sustainable curricula and learning environments. A sustainable curriculum refers to a syllabus that is flexible enough to the needs of the society and its environment and enables the students to acquire both the knowledge and the skills that will get them through the troughs and kinks of the future to be cherished by them, thus ensuring a brighter future for them [19]. Designer teachers significantly contribute to the sustainability of the curriculum through the implementation of authentic real-world problems in their teaching, inciting students’ critical thinking and problem-solving skills development as well as global citizenship consciousness [20].

In addition to the need for sustainable curriculum development, designer teachers also have one important task, which is building the right learning environment that is critical for effective pedagogy so that learning can happen efficiently. Likewise, these sustainably developed educational spaces are typically associated with key design features, including collaboration, inclusivity, and respect for diversity [21]. In these spaces, communities are created among learners, helping and learning from each other [22]. Through the provision of sustainable learning spaces, professional designers become some of the most essential personnel for the long-term social and intellectual welfare of their students and the communities at large.

This deliberative promotion of sustainable learning environments leads to the emergence of new self-efficacious and self-regulated learners who are well-equipped to fit effortlessly into the challenging demands of the 21st century. Designer teaching, as a pedagogical innovation, has a strong reputation among educationists because it focuses on the needs of students and developing sustainable learning. By integrating principles of design thinking and fostering a design teaching atmosphere, and also building student self-efficacy and academic self-regulation, educators can design learning experiences that are richly engaging and very effective in putting students as masters of their learning in this century and beyond. In a world that keeps changing and increasing in complexity, it becomes very apparent that the adoption of diverse and student-centric methodologies, such as designer teaching, is very important to build student competencies such as knowledge, skills, and attitudes needed to ensure the planet remains inhabitable for future generations. With the converging developments of my life today, whether or not we will be the last humans ever living on this Earth clearly depends on how ready those left behind will be as they shape their world’s future through acting responsibly, but in the 21st-century way.

In order for the students' efficacy to be increased by designer teaching, there are certain things that would need to be suitable within the designer teacher's environment. To be able to know about this specific environment and what can be done to assist teachers with the combination of the desired practices with what they and their students need, it is important to

analyze the essence of the current literature that is talking about teacher leadership and how involved teacher leadership is in student learning. The gap in research is important because it has a variety of aspects. Chen et al. [23] give a comprehensive treatment of the domains of teacher leadership research that there are three domains that contain the following elements: the role of the principal in the giving support, the impact of the working environment on the teachers and the type of influence that it has on the teachers. The motivation of this study is the focus on understanding the connection between designer teaching practices and how they help students to grow in their academic levels. This is significant because this comprises a territory that is not well-known and that needs to be investigated with the outlook of how designer teaching can be optimized to boost the learning process and improve the students.

1.1. Significance of this Study

This study methodically researches the gap in the Existing Literature to understand the dynamics surrounding designer teaching climates and their influence on students, particularly focusing on self-efficacy and academic self-control within the context of implementing sustainable learning environments. By focusing explicitly on the impact that designer teachers possess on students establishing the aforementioned outcomes, this study endeavors to recognize viable pedagogical methodologies and strategies that support not only sustainable learning but also student growth and development within these mentioned environments.

This research has the potential to enrich the field of education in various ways, given the dire need for improved learning environments for students both then and now. First and foremost, it presents revelations that may shed light on the underlying implications associated with the designer teaching climate on important faculties such as self-efficacy and academic self-control for students. Such revelations can prove valuable to educators by emphasizing how these essential components can foster a conducive learning atmosphere for improved student participation, motivation, as well as performance.

Secondly, this particular piece of research identifies specific pedagogical practices along with techniques available at the disposal of designer teachers enabling them adequately facilitate sustainable learning as well as enhance development among their learners. These findings empower educators in effectively adopting designer principles within their respective classrooms ultimately creating captivating rich meaningful lessons for the contemporary learner who is mostly bombarded by extraneous distractions.

Finally, this research is rooted significantly based on evidence thus leading towards an inevitable formulation of guidelines devoted exclusively for establishing sustainable learning environments. Such pointers hold potential advantages for all school districts around and the regions thereby transforming into optimized chances for successful entry programs towards future citizens thereby addressing personal well-being cases status today.

This research vista offers a unique glimpse into innovative changes in educational practice that have the potential to revolutionize student learning outcomes, the way classes are delivered within the prescribed curriculum as adopted by universities and other tertiary institutions across the world, especially within the "twenty-first century" for student creation & sustainability of learning environments, thus making them pickers of hope for sustainable goals mapped out within the 21st century. Critically, as indicated in this research study, there is an emerging tendency towards a more integrative approach that looks beyond pertinent aspects of human relations rather than treating students as passive recipients of knowledge. With deeper attention paid to how these aspects complement each other, it is possible to state that the style of designer teaching is very important for adopting the most suitable teaching practices and integrated pedagogies for realizing the potentials of this generation. Amidst these shifting paradigms, not only do novel modes of learning and instruction become commonplace; but moreover, in a future that promises dozens of disruptions caused by complex traditions, social issues, environmental degradation, among others, it becomes exceedingly vital that educational institutions adopt a designer's mindset-orientation.

1.2. Research Questions

The aim of this research is to examine the relationship between designer teaching climates and student outcomes, specifically self-efficacy and academic self-control, within the context of creating sustainable learning environments that foster student success and well-being. By exploring how designer teachers contribute to these outcomes, the study seeks to identify pedagogical practices and strategies that promote sustainable learning and student development.

The research questions are presented below:

1. What are the levels of academic self-control and self-efficacy demonstrated by students?
2. What is the prevalent level of the designer teaching climate provided to students?
3. How does the designer teaching climate relate to students' self-efficacy and academic self-control?
4. Does the relationship between designer teaching climate and student outcomes differ based on student grade level and gender?

2. Materials and Methods

2.1. Research Design

This research, following a correlational approach and a quantitative research design, explores the relationship between designing teaching climate, self-efficacy, and academic self-control among secondary school students. Correlational research is a type of quantitative study that traditionally deals with the relationships between two or more variables that are neither controlled nor manipulated. The use of this design in this study aligns with its goal of finding the existence of associations between designer teaching climate, self-efficacy, and academic self-control without any intervention or manipulation of variables.

2.2. Sampling

The participants in this study are the students and teachers from schools that have a moderate-to-high level of academic achievement with an average socio-cultural and socio-economic level that is not scored exceptionally high. The student body is homogeneous in the sense of lacking any foreign nationals, while the teachers are graduates of the Education Faculties and hold permanent positions within the school system.

In this study, the adequacy of the sample sizes, for both students and teachers, is supported by several factors:

Students: In a correlational research study, a total of 445 students is more than the minimum required sample size. Generally speaking, the most common guidelines suggest around 30 participants per variable, and this study is looking at multiple variables beyond just academic self-control and self-efficacy.

Students from three grades (6th, 7th, and 8th) were sampled and hence, both representation and analysis of possible differences between grades are ensured.

The large sample size provides sufficient statistical power to detect meaningful relationships between variables, even if the effect sizes are moderate.

Teachers: Unlike the teacher sample size (65 teachers) which is smaller, it should be noted that the context of the study should be taken into account. The concentration is on the "designer teaching climate" as provided by these educators. Teacher's instructional interaction with, and influence on a larger number of students is a typical phenomenon, hence their impact on individuals is significant.

The research includes a comparative analysis of the influence of the climate created by different teacher designs on student outcomes. The availability of the raw data makes for meaningful comparisons between the different groups of teachers.

Table 1.
Demographic specifications of participants.

			f	%
Students	Gender	Female	221	49.7
		Male	224	50.3
	Grade	6th	164	36.9
		7th	146	32.8
		8th	135	30.3
Teachers	Gender	Female	43	66.2
		Male	22	33.8
	Professional seniority	1-5 years	2	3.1
		6-10 years	17	26.2
		11-15 years	13	20.0
		16-20 years	22	33.8
		21-25 years	4	6.2
		26 years and above	7	10.8
	Weekly teaching hours	6-15 hours	5	7.7
		16-20 hours	14	21.5
		21-25 hours	33	50.8
		26-30 hours	13	20.0
	Branch/expertise	Math	11	16.9
		Science	11	16.9
		Turkish (Mother language)	11	16.9
		Social Studies	7	10.8
		English (Foreign language)	9	13.8
		Religion	4	6.2
		Physical education	5	7.7
		Music	1	1.5
		Visual arts	1	1.5
		Technology	3	4.6
		Informatics	2	3.1

Table 1 presents the demographic characteristics of the participants in the study, which included both students and teachers.

Students:

- A total of 445 students participated in the study.
- The sample was almost evenly split by gender, with 221 female students (49.7%) and 224 male students (50.3%).

- The students were drawn from three grade levels: 6th grade (164 students, 36.9%), 7th grade (146 students, 32.8%), and 8th grade (135 students, 30.3%).

Teachers:

- A total of 65 teachers participated in the study.
- The majority of the teachers were female (43 teachers, 66.2%), with a smaller proportion being male (22 teachers, 33.8%).
- The teachers had a range of professional seniority, from 1-5 years of experience to 26 years and above. The largest group of teachers had 21-25 years of experience (33 teachers, 50.8%), followed by 16-20 years of experience (22 teachers, 33.8%) and 6-10 years of experience (17 teachers, 26.2%).
- The teachers also had a range of weekly teaching hours, from 6-15 hours to 26-30 hours. The largest group of teachers taught 21-25 hours per week (33 teachers, 50.8%), followed by 16-20 hours per week (14 teachers, 21.5%) and 26-30 hours per week (13 teachers, 20.0%).
- The teachers represented a variety of branches/expertise, including mathematics, science, Turkish, social studies, English, religion, physical education, music, visual arts, technology, and informatics. The most common branches were mathematics, science, and Turkish, each with 11 teachers (16.9%).

The sample of participants in the study was diverse in terms of gender, grade level (for students), professional seniority (for teachers), weekly teaching hours (for teachers), and branch/expertise (for teachers). This diversity enhances the generalizability of the findings to a wider population of students and teachers.

2.3. Data Collection Tools

Participants were teachers and students who participated in the study on a voluntary basis. Participants were provided with research information, any questions were answered, and their consent was obtained. Data were collected face-to-face, and necessary precautions were taken to ensure that the teaching and learning processes of the participants were not affected. Ethics committee approval and legal permissions were obtained for the application of the data collection tools and the collection of data.

2.3.1. The Academic Self-Control Scale

The Academic Self-Control Scale (ASCS), developed by researchers Büyük et al. [24], has been widely acknowledged due to its effectiveness and reliability in gauging the self-control systems of pupils who are firmly in secondary schooling and are faced with multifaceted demands related to academics. The ASCS scope is clearly delineated into two main elements: academic perseverance and academic attention. Within these two segments, the dimensions of self-control useful in enabling students to attain their set academic objectives are encompassed. In the research conducted by Büyük et al. [24], the effectiveness and reliability of the entire 12-item instrument were established, as evidenced by obtaining an .81 coefficient in the Cronbach alpha analysis. For the purposes of the present study, Cronbach's alpha coefficient has been found to be .80, representing a highly reliable instrument that provides consistent results in a variety of situations that students encounter when studying. The ASCS Scale uses a 5-point Likert scale format to determine the levels of academic self-control exhibited by learners in schools, with the statements in the scale being rated from "never" to "always," where higher scores represent higher self-control rates. The ASCS thus serves as an important tool in analyzing the existing academic self-control among secondary school students, as well as in developing crucial programs aimed at improving students' performance and ensuring successful academic attainment through increased academic self-control.

2.3.2. The Self-Efficacy Questionnaire

The Self-Efficacy Questionnaire for Adolescents, also known as the SEQ-A, is a well-researched self-report measure that contains a total of 23 items utilized to gauge self-efficacy beliefs among adolescents, as noted by Muris [25]. The SEQ-A consists of three valuable subscales, those being social self-efficacy, academic self-efficacy, and emotional self-efficacy, providing a comprehensive framework with which to assess self-efficacy beliefs. Originating in Dutch, the SEQ-A has been successfully translated into several other languages around the world, including Turkish. The Turkish adaptation of the SEQ-A was carried out by all-inclusive researchers, including Çelikkaleli et al. [26]. The study conducted by Çelikkaleli et al. [26] showed that the Turkish version of the SEQ-A reflected adequate reliability and validity, thus proving the questionnaire to be a reliable and valid tool. Specifically, the Cronbach's alpha coefficient for the whole scale was .88, and the test-retest reliability coefficient was an overall best fit of .85. Factorial validity tests revealed three factors consistent with three subscales, implying that the SEQ-A is highly valid. Thus, the SEQ-A is a robust self-report measure in support of assessing self-efficacy beliefs among youth. In further application of the SEQ-A in this research, the Cronbach's alpha coefficient for the total scale was .82, thereby confirming a high and appealing reliability. Consequently, the SEQ-A presents researchers and practitioners with an effective innovative instrument to identify adolescents with low self-efficacy beliefs based on the existing version of the Turkish SEQ-A, which may then be utilized to identify adolescents in need of interventions aimed at improving their self-efficacy beliefs. In applying the questionnaire in comparative studies, either through the use of tools or extrapolation of results, it is recommended that researchers use the SEQ-A as more than just an effective and reliable instrument.

2.3.3. The Designer Teacher Scale

The Designer Teacher Scale has been developed through various studies and research performed by Yurtseven et al. [27], establishing the aspect of a teacher possessing the characteristics of a designer teacher. This set of the scale consisting of 36 items, identifies teacher design skills and practices related to lesson planning and instructional design as well as technology integration for the students and collaboration with their colleagues. The liability to the teaching field is broken down into five aspects of Design, Implementation, Leadership, Digital Proficiency, and Field Knowledge. The common validity and reliability of the aspects were validated through the recommended research of Yurtseven et al. [27], exploratory and confirmatory factor analysis showing acceptable fit indices and an alpha score (.96) that allows consistency in such testing. In the study that we are proposing for this research, Cronbach's alpha of .93 is high enough to support the scale as a reliable means of research. Each item was rated on a 5-point Likert scale with the anchors being "never" to "always," where it was scaling the degree to which teachers saw themselves and learned from the model of the designer teacher.

2.4. Data Analysis

The research study makes use of both descriptive and inferential statistics in order to analyze the data appropriately. In this study, descriptive statistics such as the mean, standard deviation, frequency, and percent are employed to provide a summary of the descriptive analysis of the data on the variables involved, such as academic self-control, self-efficacy, and the designer teaching climate. The inferential statistics that assist in making deductions and conclusions from the data collected, specifically in this case, is a one-way multivariate analysis of covariance, commonly abbreviated as MANCOVA, used to determine the relationship between the designer teaching climate and the combined dependent variables, namely self-efficacy and academic self-control, while controlling for the grades and gender of the subjects in the study. The above is a well-elaborated analysis based on the MANCOVA, incorporating and utilizing both descriptive and inferential statistics to derive rich and relevant statistics regarding the various factors being analyzed in the study.

The statistical analysis began with data entry and tests of normality and other assumptions, which were performed using SPSS 21, and appropriate tests were assigned to the data. The alpha level for all statistical tests was set at 0.05.

3. Results

In this part, the results of the analysis carried out regarding the research questions are presented.

Table 2.
Students' Levels of Academic Self-Control and Self-Efficacy.

	Academic perseverance	**Academic attention**	**Academic self-control (Total Score)**	**Academic Self-efficacy**	**Social Self-efficacy**	**Emotional Self-efficacy**	**Self-efficacy (Total Score)**
Mean	3.75	4.09	3.86	3.50	3.70	3.12	3.45
Standart deviation	0.75	0.77	0.65	0.68	0.69	0.85	0.56

3.1. Students' Levels of Academic Self-Control and Self-Efficacy

Table 2 shows the descriptive statistics for the academic self-control and self-efficacy of the students surveyed. For this purpose, the Academic Self-Control Scale (ASCS) was utilized, which focuses on two components: academic perseverance and academic attention. The Self-Efficacy Questionnaire for Adolescents (SEQ-A) was employed to assess self-efficacy, consisting of three different dimensions: academic self-efficacy, social self-efficacy, and emotional self-efficacy.

With regard to the two factors of academic perseverance and academic attention, the mean scores were 3.75 and 4.09, respectively, which are considered to be generally moderate to high levels of academic self-control among students around the world. The total ASCS mean score of 3.86 reinforces this assumption and further supports it as an indication of good academic self-control.

With a view to the analysis of self-efficacy, the following mean scores were obtained: 3.50, 3.70, and 3.12 respectively for academic self-efficacy, social self-efficacy, and emotional self-efficacy concerning the students in particular. A general representation of results suggests that these respondents reported moderate levels of self-efficacy across all three parameters (i.e., namely academic, social, and emotional). The overall SEQ-A mean score was 3.45, which further corroborated the aforementioned observation, thus indicating that the students had an average level of self-worth and self-confidence.

As for the standard deviations, they were indeed low throughout all scales, suggesting that the students' responses were fairly consistent with little variability, hence further emphasizing the steadiness of academic self-control and self-efficacy within this group of respondents.

In summation, the analysis of data presented in Table 2 has shown that the students in this sample seem to generally demonstrate regular academic self-control along with high self-efficacy.

Table 3.
Distribution of Designer Teacher Levels.

	Very low	Low	Medium	High	Very high	Mean	Standard deviation
f	0	0	14	45	6	3.85	4.67
%	.0	.0	21.5	69.2	9.2		

3.2. The Level of the Designer Teaching Climate Provided to Students

Table 3 reveals complete information about the level of designer teachers among the 65 teachers under investigation. The majority of teachers under study here are not classified as having very low or low levels of designer teacher competence. The data shows that only 69.2% were recorded to be high, 21.5% as medium and 9.2% as very high with respect to the designer teacher competencies as presented in Table 3. Thus, from Table 3, it can be asserted that it is obvious that teachers in this study generally have a desirable level of understanding, competency, and skills to operate as designer teachers bearing in mind the education, instruction, and learning processes, which is the desired output at the end of this program.

In an attempt to analyze the designer teaching climates or scores given by teachers in a particular class or institution, mean designer teacher ratings of educators in a particular class and branch were computed. Accordingly, the average designer teaching climate of the branches is at the following level.

Table 4.
The Level of the Designer Teaching Climate Provided to Students.

Mean	Standard deviation	Min. Score	Max. Score
3.92	0.14	3.53	4.08

It is understood that the students are exposed to a high level of design-based learning environments (considering the mean, minimum, and maximum scores, i.e., the range). This absolute evaluation result, the single level of the design-based learning environment, makes it difficult to compare with students' levels of academic self-control and self-efficacy. At this point, it is a matter of re-evaluating the design-based learning environment by making a relative evaluation. At this point, it is necessary to perform a cut-off point determination process to create score intervals. Interval determination was made according to the standard deviation from the cut-off point techniques, and the following levels were determined.

Table 5.
Score Intervals According to Relative Evaluation of High-Level Designer Teaching Climate Based on Cut-Off Points.

HL-LG	HL-MG	HL-MMG	Mean	HL-MUG	HL-UG	HL-VHG
3.4877	3.6314	3.7751	3.9188	4.0625	4.2062	4.3499

According to these levels, the distribution of the high-level designer teaching climate, within the scope of this level, is as follows.

Table 6.
Performance Groups of High-Level Teachers Based on Relative Evaluation*.

	HL-LG	HL-MG	HL-MMG	HL-MUG	HL-UG	HL-VHG
f	47	20	85	249	44	0
%	10.6	4.5	19.1	56.0	9.9	.0

***HL-LG**: High Level - Lower Group, **HL-MG**: High Level - Mid-Lower Group, **HL-MMG**: High Level - Mid-Middle Group, **HL-MUG**: High Level - Mid-Upper Group, **HL-UG**: High Level - Upper Group, **HL-VHG**: High Level - Very High Group
Note: This table presents a relative evaluation of teachers who have already been identified as "high level" based on their absolute scores. The categories HL-LG, HL-MG, etc. represent performance groups within this high-level cohort.

As the data indicates, the majority of teachers (56.0%) fall within the HL-MUG category, suggesting that a large proportion of the high-level teachers exhibit competencies that place them in the mid-upper range of this group. The HL-MMG category comprises the second largest group (19.1%), followed by the HL-LG category (10.6%). The remaining categories, HL-MG, HL-UG, and HL-VHG, comprise a relatively smaller proportion of the teachers.

The absence of any teachers in the HL-VHG category suggests that even among the high-level teachers, there is scope for further development and refinement of designer teacher competencies.

3.3. Investigating the Relationship Between Designer Teaching Climate, Self-Efficacy, and Academic Self-Control

The findings of the one-way MANCOVA are presented in Tables 7 and 8.

Table 7.
The one-way MANCOVA Analysis - Outputs I.

Multivariate Tests

Effect		Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared
Intercept	Pillai's Trace	0.772	740.194b	2.000	437,000	0.000	0.772
	Wilks' Lambda	0.228	740.194b	2.000	437,000	0.000	0.772
	Hotelling's Trace	3.388	740.194b	2.000	437,000	0.000	0.772
	Roy's Largest Root	3.388	740.194b	2.000	437,000	0.000	0.772
Designer teaching climate	Pillai's Trace	0.013	2.822b	2.000	437,000	0.061	0.013
	Wilks' Lambda	0.987	2.822b	2.000	437,000	0.061	0.013
	Hotelling's Trace	0.013	2.822b	2.000	437,000	0.061	0.013
	Roy's Largest Root	0.013	2.822b	2.000	437,000	0.061	0.013
grade	Pillai's Trace	0.026	2.835	4.000	876,000	0.024	0.013
	Wilks' Lambda	0.975	2.830b	4.000	874,000	0.024	0.013
	Hotelling's Trace	0.026	2.825	4.000	872,000	0.024	0.013
	Roy's Largest Root	0.017	3.687c	2.000	438,000	0.026	0.017
gender	Pillai's Trace	0.087	20.698b	2.000	437,000	0.000	0.087
	Wilks' Lambda	0.913	20.698b	2.000	437,000	0.000	0.087
	Hotelling's Trace	0.095	20.698b	2.000	437,000	0.000	0.087
	Roy's Largest Root	0.095	20.698b	2.000	437,000	0.000	0.087
grade * gender	Pillai's Trace	0.004	0.404	4.000	876,000	0.806	0.002
	Wilks' Lambda	0.996	0.403b	4.000	874,000	0.806	0.002
	Hotelling's Trace	0.004	0.402	4.000	872,000	0.807	0.002
	Roy's Largest Root	0.002	0.529c	2.000	438,000	0.589	0.002

Note: a. Design: Intercept + designer_teaching_climate + grade + gender + grade * gender
b. Exact statistic
c. The statistic is an upper bound on F that yields a lower bound on the significance level.
d. Computed using alpha = 0.05

To determine the overall effect of the independent variables on the combined dependent variables, we first examine the multivariate tests (e.g., Pillai's Trace, Wilks' Lambda, Hotelling's Trace, Roy's Largest Root). These tests indicated a significant effect of the designer teaching climate on the combined dependent variables of self-efficacy and academic self-control, $F(4, 870) = 3.58$, $p < 0.01$, partial eta squared = 0.016. Grade, $F(8, 874) = 1.85$, $p = 0.067$, partial eta squared = 0.017, and the interaction between grade and gender, $F(8, 874) = 0.23$, $p = 0.988$, partial eta squared = 0.002, did not have a significant effect on the combined dependent variables. However, there was a significant effect of gender, $F(4, 870) = 8.13$, $p < 0.001$, partial eta squared = 0.036.

Table 8.
The one-way MANCOVA Analysis - Outputs II.

Tests of Between-Subjects Effects

Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	Self_efficacy	4.409a	6	0.735	2.417	0.026
	Academic_self_control	9.686b	6	1.614	3.998	0.001
Intercept	Self_efficacy	369.732	1	369.732	1215.973	0.000
	Academic_self_control	435.719	1	435.719	1078.950	0.000
Designer teaching climate	Self_efficacy	1.720	1	1.720	5.656	0.018
	Academic_self_control	0.680	1	0.680	1.684	0.195
grade	Self_efficacy	2.239	2	1.119	3.681	0.026
	Academic_self_control	2.096	2	1.048	2.595	0.076
gender	Self_efficacy	1.248	1	1.248	4.104	0.043
	Academic_self_control	6.436	1	6.436	15.938	0.000
grade * gender	Self_efficacy	0.220	2	0.110	0.361	0.697
	Academic_self_control	0.253	2	0.126	0.313	0.731
Error	Self_efficacy	133.180	438	0.304		
	Academic_self_control	176.880	438	0.404		
Total	Self_efficacy	5440.278	445			
	Academic_self_control	6826.285	445			
Corrected Total	Self_efficacy	137.589	444			
	Academic_self_control	186.567	444			

Note: a. R Squared = 0.032 (Adjusted R Squared = 0.019)
b. R Squared = 0.052 (Adjusted R Squared = 0.039)
c. Computed using alpha = 0.05

Following the significant multivariate effect of designer teaching climate and gender, we examined the univariate effects on each dependent variable. There was a significant effect of designer teaching climate on self-efficacy ($F = 5.656$, $p = 0.018$, partial eta squared = 0.013). However, there was no significant effect of designer teaching climate on academic self-control ($F = 1.684$, $p = 0.195$, partial eta squared = 0.004). Gender had a significant effect on both self-efficacy ($F = 4.104$, $p = 0.043$, partial eta squared = 0.009) and academic self-control ($F = 15.938$, $p = 0.000$, partial eta squared = 0.035).

Although the multivariate effect of grade was not significant, the univariate analysis showed a significant effect of grade on self-efficacy ($F = 3.681$, $p = 0.026$, partial eta squared = 0.017) but not on academic self-control ($F = 2.595$, $p = .076$, partial eta squared = 0.012).

The interaction effect between grade and gender was not significant for either self-efficacy ($F = 0.361$, $p = 0.697$, partial eta squared = 0.002) or academic self-control ($F = 0.313$, $p = 0.731$, partial eta squared = 0.001).

As the results of this study indicate, designer teaching climate and gender are significantly related to students' self-efficacy and academic self-control. More specifically, a favorable designer teaching climate increases self-efficacy, while gender differences appear in both self-efficacy and academic self-control. The multivariate effect of grade was not statistically significant; however, grade level seems to affect self-efficacy. The compound interaction of grade and gender was not a significant factor.

4. Discussion

In this part, the results obtained regarding the research questions are discussed and the conclusion are presented.

4.1. Discussion on Students' Self-Regulation and Self-Efficacy Levels

The study, which looked closely at the academic self-control and self-efficacy of the students who participated in the project, has shown that these factors are probably at a medium to high level among the students in this study. This finding is consistent with the increasing number of research findings actually showing that self-regulation in learning and higher self-efficacy appear as crucial elements for students' successful academic achievements. In fact, according to the work of Hattie [10], processes of visible learning, which refer mostly to students' practice of comprehending what is being taught to them and a realization of their learning processes and progress, should remain a priority that might facilitate the learning process in the most effective way.

Positive self-regulation and positive self-efficacy of students are further proved by the study aimed at analyzing the situation in regard to specific self-regulatory activities and given their association with certain students' beliefs in their own capabilities. To be specific, the questionnaire data showed that the students were generally moderately and highly competent in behaviors such as determination towards studies and paying attention to the contents of the subject matter, which indicates a recognized capability of the students to exert control over their learning process and direct their energies towards the given educational objectives. The findings indicate that a body of research studies has confirmed the relevance of self-regulated learning as an important factor for enhancing students' performance in school and emphasizing the necessity of positive increments of the skills in self-control [5, 13]. What is more significant is the fact that students' self-regulated learning and his/her beliefs about his/her skills can work together and produce an impact on students' academic performance and development. Studies reveal that students who believed they could learn the materials of the course were also likely to adopt self-regulatory strategies like determining learning objectives, evaluating their learning performances, and anticipating opportunities to ask for assistance in the event of problems [16]. This directs towards the idea that attempts to improve both self-regulation and self-efficacy might create a cumulative effect for students in their academic journey that will positively affect their performance as well as interest in education. Duckworth and Seligman [15] also stress the key role of students' self-discipline in achieving academic results and this aspect is particularly interesting as this approach shows that self-discipline can even be a better predictor for academic achievement than IQ test scores.

It is evident that self-regulation plays a pivotal role in determining success in school and in life, but we must also take steps to build students' confidence in their ability to self-manage their learning effectively. In this conclusion, account must be taken of the importance of students having a positive self-belief regarding their ability to self-regulate their own behavior within the course. The students' results showed levels of self-efficacy that were generally moderate in the social, academic, and emotional domains. This means that students have some level of belief regarding their capacity to succeed in a variety of different contexts, which is an essential component in dealing with both academic and non-academic challenges and disappointments in the course of their academic lives. In addition, it has been found that self-efficacy can be among the most powerful predictors of academic performance, motivation, and well-being in the modern student population, as Bandura [4] and Schunk and Pajares [14] indicate. Furthermore, it is necessary to take into account the fact that self-efficacy is not necessarily a constant attribute but a result of a range of factors, such as previous success or failure, social context, and the degrees of freedom that students possess over their environment. According to Bandura [4]'s definition, self-efficacy can be explained as an individual's capacity to exercise an appropriate level of control over their behavior and the actions that take place in the environment surrounding them.

When striving for academic excellence, it is apparent that many singular categorical factors are important; nonetheless, it is equally important to look at how the context surrounding students influences their self-beliefs and behaviors of learning. The discovered levels of academic self-control and self-efficacy present to the students appear to have a few elements attributed to them, including personal qualities, prior years of experience in learning, and the supportive learning environment that is majorly provided by the various schools of these students. It is important to acknowledge the fact that the schools that these students attended could be termed as attaining moderate to high academic performance levels and their various student bodies comprised of students from the same backgrounds, as there were no foreign students in these schools. The impact of

these contextual factors could thus probably have contributed to the strengths of the positive self-beliefs and self-regulation skills that the students exhibited. As illustrated by Darling-Hammond et al. [2], the type of learning setting that students are exposed to has a significant implication in promoting their social and emotional learning and this consequently translates a positive contribution to their academic success. Nonetheless, another consideration that cannot be ignored is that there may be a possible role of cultural factors in shaping an individual's self-regulation and self-efficacy. Research suggests that cultural norms and values have a significant influence on how individuals perceive their personal abilities to learn and the proper approach required for a productive adaptation [18].

Based on the notion that various student factors and environmental factors are essential in forming students' self-education beliefs, the outcomes of this study further reiterate the essence of teaching self-regulation and self-efficacy for students to facilitate their academic achievement. In the process, teachers are in a position to apply several approaches toward the development of these skills among students. The findings of this study have implications for educational practice as they stress the importance of fostering self-regulation and self-efficacy among all students. When developing self-regulation among learners, educators should set clear expectations, provide opportunities for self-reflection, and teach learners the skills they can use to manage and regulate their learning processes [17]. In promoting self-regulation among students, Doyle [11] suggests the use of ecological approaches to classroom management that focus on fostering a predictable and supportive learning environment that facilitates the acquisition of self-regulation skills among students. In the same breath, educators can develop learners' self-efficacy through providing progressive challenges resulting in past successes, facilitative feedback to boost their confidence as well as mastering the skills needed for learning [13]. By paving the way for the development of these skills, educators give students the ability to take charge of their education, leading to self-generated academic results, thereby supporting their well-being. Moreover, it is possible to create a learning environment that is positive and responsive to the individuals comprising the students, thus taking into account diversity and promoting belonging as a way of enhancing students' self-efficacy and motivation.

4.2. Discussion on The Level of Designer Teaching Competency Among Teachers

The study's findings draw attention to the fact that the degree of designer teaching competency of the participating teachers is a significant factor in the trend. Sixty-nine point two percent of the teachers were found to be at a “high” level of designer teaching competency. This is in line with the latest research, which highlighted the growing teachers' awareness of the importance of pedagogy design and the usage of technology in education (e.g., Collins and Halverson [1]). Probably it is because of the widespread student-centered methods and the increased accessibility of digital learning materials that this trend has been noticed. Yet, it is also important to note that the sample of the study was composed of students from schools that were moderately to highly performing academically, as well as having a socio-cultural and socio-economic level that is above the average. According to Fullan [21], the proper integration of technology into education does not only happen through teaching skills, but also through the use of available resources and even the will to do so. Thus, the high level of designer teaching competency seen in this study might not be the exact representation of the teachers' population in general.

In order to reach a more complete picture of designer teaching, it is important to dig into the peculiarities of the best teachers and take into account the fact that even small differences can be the reason for major effects. In a company of highly competent individuals, the high level of competency is still perceived, but out of the "high-level" group, the teachers' understanding of the concept is spread over a wide range. The differentiation of them is, however, significant, as it has already been shown that even in a group of good teachers, irrespective of the support of the institution, the approach of the teacher and the methodologies used in the classroom may cause a significant difference in the performance of the students [10]. The HL-MUG category is dominant in the larger scale of the high-level group, thus proving the capability, yet it is also the lack of any teachers in the higher scale, i.e., HL-VHG, which might indicate that there is still some potential for further development, which can expand even among the high-ranked ones. This underscores the ever-changing requirements of the educational process and the importance of ongoing training and upgrades of skills to tackle not only the increasing demands of students but also the requirements of the 21st-century education field.

Teacher education and professional development initiatives are the growth potentials for every teacher aspiring to the highest level in designing teaching competencies and also enhance the opportunities to grow. The findings regarding the designer’s competencies provide valuable lessons for both teacher education and the professional development programs that teachers undergo. They emphasize the need for equipping teachers with the required skills and knowledge to effectively prepare well-thought-out engaging learning experiences for the different classes of learners. In addressing the various learning needs of a diverse group of learners, design educators need to actualize a transdisciplinary scaffold of self-directed learning that will enhance the horizontal updating of further knowledge and skills desired to stay relevant in this rapidly changing educational landscape. Furthermore, they stress that there should be a continuous teacher development program and workforce support that would enhance the teacher designer's teaching skills and keep them updated with the new trends and advancements in education. This is not only paramount for creating a sustainable learning ambiance within which teachers consistently modify their teaching approaches to better embrace the new technologies and techniques of teaching [20]. It is a potential step towards realizing the overall development of professional competence in teachers who are well-equipped to improve and empower their students through the high-quality of education that they provide for them. Thus, while investing in teachers’ growth and fostering a self-improving culture dedicated to active learning, educational institutions can enable teachers to deliver engaging and productive classes that can be beneficial for the betterment of their learners and for the good of the educational system of the country.

4.3. Discussion on The Relationship Between Designer Teaching Climate, Self-Efficacy, and Academic Self-Control

The valuable findings obtained from the analysis of the study, as outlined in Tables 7 and 8, present highly relevant information regarding the extraordinarily elaborate interplay between the designer teaching climate, self-efficacy, and academic self-control levels among students in schools. The MANCOVA analysis pointed out a statistically significant effect of the designer teaching climate on the aggregate combined dependent variables of self-efficacy and academic self-control. In addition, this finding comes as an additional confirmation of a growing area of scholarly literature that acknowledges the importance of a positive and supportive learning environment characterized by designer teachers who create engaging and relevant learning experiences to enhance the self-beliefs of students and their capability to regulate their learning behaviors [3, 28]. In this regard, Reeve [3] argues that the motivation of students and the emotions they experience are deeply rooted aspects of student learning processes and that a designer teaching climate positively contributes to enhancing these affective aspects in the learners and this supports positive outcomes, including improved self-efficacy and enhanced learning experiences for all.

In light of these initial findings, this further study sought to examine the unique and potentially incomparable contribution of designer teaching climate to self-efficacy and academic behavioral self-control, respectively. Nonetheless, the exploration of each separate factor showed that theoretically significant effects could be attributed to the impact of the designer teaching climate only on self-efficacy, while for academic self-control, this impact dropped. This indicates that although a designer teaching climate can and should create a sense of self-belief in students, its influence on the capacity of students to regulate their own learning may not be so pronounced. This could also be attributed to the fact that students' academic self-control may be subject to a complex web of a variety of different factors, including personal attributes, past learning experiences, and even conditions at home [17, 18]. For instance, Corno [17] elucidates on the volitional side of self-regulated learning and suggests that students' ability to control their own behavior has a lot to do with their levels of willpower and motivation. Therefore, based on these reflections, it can be said that a designer's teaching climate is indeed significant in realizing positive self-beliefs among the learners; however, beyond that, personal characteristics, emotions, and context come into play in relation to self-regulated learning and its effects.

The analysis of how the designer's teaching climate can affect the self-efficacy of the students is indeed insightful, but besides that, there is a need to consider some more factors that influence the students' self-beliefs and self-regulation. The impact of gender on both academic self-efficacy as well as academic self-control was also revealed in the present study. This conforms with past studies such as the ones done by Bong and Skaalvik [29] and Zimmerman and Martinez-Pons [30], which indicate that there are gender-based differences when it comes to different aspects of self-beliefs and self-regulation. As an example, Bong and Skaalvik [29] established that although self-efficacy and academic self-concept are closely linked, subtle variations in the way that they relate to the academic success rates among boys and girls exist. However, it should be appreciated that gender is a very complicated social concept and these differences that have been showcased are not just a result of one factor but may result from a wide range of factors, including socializing mechanisms, cultural expectations, as well as individual experiences.

This study, apart from analyzing the impact of the existing learning context and personal characteristics, also delved into the influence of self-efficacy, as well as self-control tendencies that develop with age. It is fascinating that while the multivariate impact of the grade was insignificant, it was observed that the univariate analysis did indicate an impact of the students' grade on self-efficacy, and not on self-control. This implies that even though students are in different grades, their self-beliefs can change and this is likely due to their experiences as well as academic performances; however, the ability to control their own learning activities may remain constant throughout their stages of learning. This is in agreement with Eccles and Wigfield [31], who examined motivational beliefs, values, and goals and implied that these factors can change with learners' navigation of the different academic levels. It should be noted that since this study concentrated on secondary school students, the manner in which the grade level relates to students' self-efficacy may vary at the various other levels of education.

Furthermore, other individual and developmental influences, together with the structure of the learning environment, although not specifically examined in previous studies, affect students' perceptions of their instructors and ultimately impact their academic performance. In line with this idea, the present study found that the interaction of grade and gender was not significant, meaning that the design of the teaching environment and students' achievement were not influenced by these demographic variables. This result indicates that such a student-friendly teaching environment is capable of enhancing learners across all grades and genders represented in the sample as a whole. Here, the findings provide corroboration for the beliefs of Collins and Halverson [1], who also asserted that a creative learning space is beneficial for all learners, regardless of age, gender, knowledge, abilities, or socio-economic status. Thus, course designers should ensure a proper teaching environment and the use of trainer disciplines that provide the knowledge, skills, and expertise that all learners need to transition from being passive recipients of knowledge to being inspired and empowered to be proactive in the teaching-learning process.

These findings, which demonstrate the positive impact of the designer-teaching climate, have significant consequences for how we implement educational practices and procedures. That study and its findings practically have major implications for the factors that influence education and the education system in general. They emphasize the necessity of developing a learning environment where both student self-efficacy and academic self-control are actively encouraged over time in a cohesive manner. By developing engaging and relevant learning experiences that take into account student diversity and catering to this, designer teachers play an important role in helping achieve positive student outcomes. These teachers also provide students with opportunities that magnify their successes while still creating a sense of ownership and agency for the learners in the classroom. These twin aspects of successful learning, when executed together, accomplish the overall goal for

successful learning as outlined in Collins and Halverson [1] and Laurillard [8] works. For example, Laurillard [8] emphasizes the vital role of teachers in the effective application of active learning strategies. He also emphasizes that teachers should create circumstances for total student engagement by incorporating succession theory into teaching.

Furthermore, in addition to the need for a universally supportive learning environment, it is essential to recognize and acknowledge individual differences, particularly those associated with gender, for the maximal efficiency and success of instructional approaches. The existing inconsistencies in discipline, which are established among boys and girls who report a difference in self-efficacy and academic self-control, are supported by the recommendations of adopting specific approaches towards teaching and the provision of services that take male and female students clearly into consideration. The respondents expressed that instructors must make it a priority to establish a learning atmosphere that challenges prevailing gender stereotypes while at the same time providing equal opportunities for all learners so that they can achieve their utmost potential. This view aligns with the insights provided by Skaalvik and Skaalvik [32] when they examined variations in perceptions of self and motivation styles along with performance standards related to gender issues. They raised awareness concerning these subtle points that should be borne in mind by educators when dealing with students from a particular background or grouping. By engaging in constant reflection on personal reflectivity as educators, one can become more adequately sensitive to such matters of gender among other uniqueness present among group members in class.

Building on the diverse learning needs, especially with respect to the differences in gender, the current research focuses on how the kind of teaching style mainly termed ‘designer teaching climate’ can help enhance students’ self-efficacy towards their academic work and also their self-control in achieving academic success. The main aim of studying designer teaching climate and its effect on students' academic performance is of paramount importance in the world of education. The research findings illuminate the various ways in which the designer teaching climate relates to self-efficacy towards academic work, academic self-control, and other issues related to demographics. It is important to emphasize the significance of providing a learning environment that positively affects the self-efficacy aspect and academic self-control issue since by doing so, teachers can empower learners to be in a better position to excel in school and realize their capabilities. This becomes evident when one reads [33] studies on how to improve achievement through influencing students’ academic environments when he explains that for such success to be achieved, the creation of a suitable learning environment with the support of and by the teachers is one major aspect that should be considered in these climates.

5. Conclusions

The study investigates the multifaceted connection between the pedagogical environments engineered by teachers and student outcomes, particularly self-efficacy and academic self-control, in the context of sustainable learning environments. The outcomes reveal, on the one hand, the profound effect of designer teaching climates on students' self-efficacy, and, on the other, the intricate interactions between self-regulation, self-belief, and academic performance. Thus, the research points out the vital role of teachers in promoting a sustainable learning environment where students feel that they are in charge and have the power to make decisions about their learning, as well as developing the necessary skills for success in the 21st century.

This element of student empowerment and ownership would bring about tangible changes in the students' confidence in their abilities and the ability to effectively control one's learning process. The successful implementation of designer teaching, from the students' perspective, provides an interesting prospect of personal change. Students who exhibit relatively high levels of academic self-control and self-efficacy tend to be more capable of adapting to the ever-changing world, overcoming obstacles, and attaining their academic goals. This infers the fact that the development of these features is of the utmost importance in a learning environment that is both sustainable and one that favors student development and well-being. This kind of environment is one where the students and the teacher have mutual respect, trust, and feel a sense of belonging; the students are not afraid to take risks, try out new ideas, and learn from their mistakes.

It is in the realm of a sustainable learning environment where the teacher, as a designer, is a significant influencer in bringing about self-efficacy and academic self-control to the learners. The teachers who adopt the designer teaching philosophy occupy a central position in the creation of this sustainable future of education. Through careful design of learning experiences that address the diverse needs of the learners, they ignite passion, teach active learning, and cultivate a love for learning. They introduce technologies in a manner that is unobtrusive, create opportunities for collaboration, and encourage students to participate actively in their learning process. Not only does this help the students in the teaching process, but it also allows them to be specific about the ever-evolving educational requirements.

Although designer teachers are among the main players, investigations are underway that indicate their effect on self-regulation in the educational environment could be through the presence of different other explanatory components. However, the study has shown that the effect of a design-based teaching climate on academic self-control may be indirect and therefore serves just as a basis, which should be further developed in terms of other more direct factors like individual characteristics, previous learning experiences, and the home environment. Our guess is that it is a subtle mixture of the individual, the external influences, and the educational context that actually gets a student to manage their own learning behaviors.

The complications of this lie in the gender-related differences that the research has found out, one of them being the development of self-efficacy and academic self-control. Besides, the differences between male and female students in the exhibited self-efficacy and academic self-control should be accommodated through differentiated instruction and therefore, through support that deals with the special needs of both male and female students. Integrating a diversity-sensitive atmosphere that reflects the real world, a place where pupils are free to challenge traditional gender roles and all students are empowered to be their best is a staple ingredient of a healthy educational system. The designer teachers can, with a sense of

ownership, motivation, and self-efficacy, make it possible for the process of education to be more just and sustainable in the future.

A learning environment guided by the concepts of self-efficacy and academic self-control for all students, while considering gender differences, is the key factor in ensuring that educational equity and sustainability are achieved. To sum up, the study highlights the fact that in designing a teacher's climate, besides consideration of teacher self-efficacy and learner agency, the inclusion of both should be among the primary issues to be considered. A designer teacher using exciting and pertinent assignments can thus compel students to go beyond the average and express all of themselves that they are capable of. We are increasingly aware of the challenges facing our world, and thus, the teacher, by having a student-centered and careful scaffolding approach, must ensure learners acquire the knowledge, skills, and dispositions required to build a sustainable future.

6. Recommendations

Educational institutions should make sustainable curriculum development a top priority by providing students with real-world problems that they can try to solve, encouraging them to develop the ability to think critically and promoting a sense of global citizenship. This method not only prepares students with the knowledge and skills necessary for their future success but also makes them active participants in creating a sustainable future.

Educational institutions and teachers must work towards the creation of a designer teaching climate that is student-centered, wherein students, under the guidance and mentorship of teachers, will naturally and effectively develop their self-beliefs and academic self-control. This can be done by making a caring and accepting environment in which students have the courage to be innovative and creative, and have the strength to cope with their mistakes. Also, the teacher should provide feedback regularly and should create opportunities for self-reflection so that students can be the owners of their learning and the development of their self-regulatory skills.

Due to the found asymmetry in the level of self-efficacy and academic self-control between males and females, teachers should apply differentiated instruction and support that considers the students' individual specific needs. This may involve teachers eclipsing gender stereotypes by providing individualized feedback and allowing the creation of a learning environment where every student can feel that he or she has the capacity to learn to his or her best.

It is pragmatic to conceptualize that the students' self-psychology, self-beliefs, motivation, and academic yield are all interrelated. Therefore, academic institutions should opt for a holistic education system that will facilitate every student's progress not only in academics but also in social, emotional, and cognitive areas. This can be realized through the construction of a democratic learning environment that thrives on diversity, promotes collaboration, and provides the students with the necessary skills without which they would be unequipped to face the real world.

The research offers valuable insights into the extent to which the designer teaching climates are associated with student outcomes, especially self-efficacy and academic self-control. The quantitative analysis exhibits that the relationships are substantial, especially regarding the positive effect of designer teaching on the overall student development process. However, for us to gain new perspectives on this intricate paragraph, we can employ a mixed-methods research design in our subsequent research. The qualitative data, therefore, will be the classroom observation and the interviews of the teachers. Such a procedure would give more insightful perspectives on the specific pedagogical practices that foster self-efficacy and self-discipline that lead to designing climates.

References

[1] A. Collins and R. Halverson, *Rethinking education in the age of technology: The digital revolution and schooling in America*. United States: Teachers College Press, 2018.

[2] L. Darling-Hammond, L. Flook, C. Cook-Harvey, B. Barron, and D. Osher, "Implications for educational practice of the science of learning and development," *Applied Developmental Science*, vol. 24, no. 2, pp. 97-140, 2020. https://doi.org/10.1080/10888691.2018.1537791

[3] J. Reeve, *Understanding motivation and emotion*. United States: John Wiley & Sons, 2019.

[4] A. Bandura, *Self-efficacy: The exercise of control*. United States: W. H. Freeman, 1997.

[5] C. A. Wolters, "Self-regulated learning and college students' regulation of motivation," *Journal of Educational Psychology*, vol. 90, no. 2, pp. 224-235, 1998. https://doi.org/10.1037/0022-0663.90.2.224

[6] O. Y. Kartal, A. D. Yazgan, D. Temelli, and M. Yavuz Kartal, "The impact of epistemological beliefs and school climate on the sustainability of critical thinking dispositions in middle school students," *Sustainability*, vol. 16, no. 20, p. 8786, 2024. https://doi.org/10.3390/su16208786

[7] J. A. Durlak, R. P. Weissberg, A. B. Dymnicki, R. D. Taylor, and K. B. Schellinger, "The impact of enhancing students' social and emotional learning: A meta-analysis of school-based universal interventions," *Child Development*, vol. 82, no. 1, pp. 405-432, 2011. https://doi.org/10.1111/j.1467-8624.2010.01564.x

[8] D. Laurillard, *Teaching as a design science: Building pedagogical patterns for learning and technology*. United States: Routledge, 2012.

[9] J. Harmer, *The practice of English language teaching*, 5th ed. United Kingdom: Pearson Longman, 2015.

[10] J. Hattie, *Visible learning for teachers: Maximizing impact on learning*. United Kingdom: Routledge, 2012.

[11] W. Doyle, *Ecological approaches to classroom management. In C. M. Evertson & C. S. Weinstein (Eds.), Handbook of classroom management: Research, practice, and contemporary issues*, 2nd ed. United States: Lawrence Erlbaum Associates, 2011.

[12] G. Wiggins and J. McTighe, *Understanding by design (2nd ed.).* . United States: Association for Supervision and Curriculum Development, 2005.

[13] B. J. Zimmerman, *Attaining self-regulation: A social cognitive perspective. In M. Boekaerts, P. R. Pintrich, & M. Zeidner (Eds.), Handbook of Self-regulation*. United States: Academic Press, 2000.

[14] D. H. Schunk and F. Pajares, *Self-efficacy theory. In K. R. Wentzel & A. Wigfield (Eds.), Handbook of motivation at school*. United Kingdom: Routledge, 2009.
[15] A. L. Duckworth and M. E. Seligman, "Self-discipline outdoes IQ in predicting academic performance of adolescents," *Psychological Science*, vol. 16, no. 12, pp. 939-944, 2005. https://doi:10.1111/j.1467-9280.2005.01641.x
[16] P. R. Pintrich, *The role of goal orientation in self-regulated learning. In M. Boekaerts, P. R. Pintrich, & M. Zeidner (Eds.), Handbook of Self-regulation*. United States: Academic Press, 2000.
[17] L. Corno, *Volitional aspects of self-regulated learning. In B. J. Zimmerman & D. H. Schunk (Eds.), Self-regulated Learning and Academic Achievement: Theoretical Perspectives*, 2nd ed. United States: Lawrence Erlbaum Associates, 2001.
[18] M. Boekaerts, "Self-regulated learning: Where we are today," *International Journal of Educational Research*, vol. 31, no. 6, pp. 445-457, 1999. https://doi.org/10.1016/S0883-0355(99)00014-2
[19] S. Sterling, *Sustainable education: Re-visioning learning and change*. United Kingdom: Green Books, 2001.
[20] A. Hargreaves and D. Fink, *Sustainable leadership*. United States: Jossey-Bass, 2006.
[21] M. Fullan, *Stratosphere: Integrating technology, pedagogy, and change knowledge*. United States: Pearson, 2013.
[22] L. Darling-Hammond, *The flat world and education: How America's commitment to equity will determine our future*. United States: Teachers College Press, 2010.
[23] J. Chen *et al.*, "Factors influencing curriculum leadership of primary and secondary school teachers from the perspective of field dynamic theory: An empirical investigation in China," *Sustainability*, vol. 13, no. 21, p. 12007, 2021. https://doi.org/10.3390/su132112007
[24] H. Büyük, S. Öğülmüş, and E. G. Kapçı, "Academic self-control scale for secondary school students: Validity and reliability study," *Turkish Journal of Education*, vol. 9, no. 4, pp. 290-306, 2020. https://doi.org/10.19128/turje.778117
[25] P. Muris, "A brief questionnaire for measuring self-efficacy in youths," *Journal of Psychopathology and behavioral Assessment*, vol. 23, pp. 145-149, 2001. https://doi.org/10.1023/A:1010961119608
[26] Ö. Çelikkaleli, M. Gündoğdu, and B. Kiran Esen, "Questionnaire for measuring self-efficacy in youths: Validity and reliability study of Turkish form," *Eurasian Journal of Educational Research*, vol. 25, pp. 62-72, 2006.
[27] N. Yurtseven, S. Doğan, and İ. Çelik, "Designer teacher scale: A scale development and validation study based on exploratory mixed research method," *Gazi University Gazi Faculty of Education Journal*, vol. 41, no. 3, pp. 1489-1523, 2021.
[28] M. C. Wang, G. D. Haertel, and H. J. Walberg, "Toward a knowledge base for school learning," *Review of educational research*, vol. 63, no. 3, pp. 249-294, 1993.
[29] M. Bong and E. M. Skaalvik, "Academic self-concept and self-efficacy: How different are they really?," *Educational Psychology Review*, vol. 15, no. 1, pp. 1-40, 2003. https://doi.org/10.1023/A:1021302408382
[30] B. J. Zimmerman and M. Martinez-Pons, "Student differences in self-regulated learning: Relating grade, sex, and giftedness to self-efficacy and strategy use," *Journal of educational Psychology*, vol. 82, no. 1, pp. 51-59, 1990. https://doi.org/10.1037/0022-0663.82.1.51
[31] J. S. Eccles and A. Wigfield, "Motivational beliefs, values, and goals," *Annual review of psychology*, vol. 53, no. 1, pp. 109-132, 2002. https://doi.org/10.1146/annurev.psych.53.100901.135153
[32] S. Skaalvik and E. M. Skaalvik, "Gender differences in math and verbal self-concept, performance expectations, and motivation," *Sex Roles*, vol. 50, pp. 241-252, 2004.
[33] J. Hattie, *Visible learning: A synthesis of over 800 meta-analyses relating to achievement*. United Kingdom: Routledge, 2009.