

The Effects of Learning Method, Motivation, and Self-Discipline on Students' Retrospective Perceptions of Online Learning

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Abstract

This article examines, for the first time, the relationship between learning style, motivation, and self-discipline, as factors that affect tertiary students' perceptions of online learning, from a retrospective perspective. The period between 2019 and 2022 was and remains one in which students are rethinking the components of teaching and learning. In addition, from the learners' perspective, social, cultural, and technological changes to which they were subject, including substantial changes to learning environments and learning methods, heightened learners' need to reconsider time planning. This study is based on 1,928 students enrolled in several academic institutions. We used a mixed-methods design for this exploratory research, incorporating qualitative and quantitative analysis, to develop the proposed Online Teaching Recommendations (SOTR) model. We used Structural Equation Modeling (SEM) for goodness-of-fit.

Findings indicate that with respect to self-discipline, distractions and interruptions at home hinder students' online learning, but they do not lower students' assessments of the quality of online teaching. We may assume that students learn how to integrate online teaching in their everyday lives, and the short-term disadvantage may become a positive experience as students persist in their academic studies. Moreover, online teaching demands students' self-discipline, which also has no effect on perceived teaching quality. However, students' motivation declines following online teaching, as does self-discipline, which lowers perceived teaching quality. Students are concerned by the decline in social interactions with their class mates, caused by online learning, but this decline does not adversely affect their learning process.

Findings of this study may contribute to improving teaching and learning for students who use digital tools for learning, especially in academic institutions where frontal instruction remains relevant and significant. Findings support the importance of the relationship between students' learning methods, motivation, and self-discipline, which are factors that affect students' perceptions of online learning. The question is whether academic instructors should enhance students' motivation to improve their self-discipline skills or whether these factors are related exclusively to students.

Keywords: online learning, online teaching, self-discipline, motivation, education

Introduction

Online learning or e-learning is a type of remote learning that uses the internet. Online learning can include online courses, exams, quizzes, and certifications. One of the advantages of online learning is learners' improved knowledge. Online learning allows individuals to study at their own pace and in their own style, which helps them acquire more information. One of the shortcomings of online learning is that it requires self-discipline and time management skills.

Online teaching poses a dual challenge to motivation in all respects. It requires students' organization, self-discipline, and self-learning abilities, and when learners encounter a problem or are unable to marshal the required self-discipline, it is much easier for them to "disappear" from the instructor's sight.

Poor motivation of students in online learning stems mainly from the method's impact on students' social interactions and the difficulty to achieve the required extent of emotional regulation when facing academic challenges. Especially vulnerable are the less-skilled students who benefit from the campus setting that creates social opportunities for learning with others (Davidovitch & Yavich, 2018).

Online learning is evolving, both in Israel and worldwide, and is attracting significant attention in many areas of life including the academia. Significant weight is given to efforts to design technology-supported courses, the quality of online materials, and the learning processes required of students. The key factors of success in online learning are related to learners' motivation and their self-discipline in their studies. The question arises of whether, in academia, it is the instructor's responsibility to create motivation to increase students' self-discipline, or whether these two factors are related exclusively to students (Ben Amram & Davidovitch, 2021).

The effect of poor motivation in online courses is that learners do not feel committed to handle the materials that are conveyed online, especially when they are required to participate in group discussions, where the group has clear responsibility. The learners are then not actively involved because they operate under external pressure.

Motivation is one of the psychological mechanisms that underlie individuals' actions. It is the power that drives individuals to achieve their goals and perform behaviors in specific situations. Motivation affects the path that an individual chooses and the goals that they set for themselves (Beck, 2021). For years, different types of motivation were studied, how they manifest, and affect human behavior, aspirations, and abilities. Two types of motivations have been identified, intrinsic and extrinsic, based on self-directed theory that conceptualizes intrinsic and extrinsic motivation as two poles of a continuum, representing to the extent to which actions are considered autonomous and significant (Mulang, 2021).

Actions may be motivated by purely intrinsic or extrinsic motivation or by motivation that represents different points on this continuum (Mulang, 2021).

Motivation plays a key role in teaching and learning. It is one of the most significant topics in teaching processes, especially in the era of learner-centered teaching (Kaniel, 2006). Motivation for learning among high school students and tertiary students is very high, due to their desire to attain high achievements on matriculation exams and in degree programs. These two groups of learners have a similar goal, and their motivation to be successful in their studies and receive good grades is also similar (Notov, 2019). This study examines the relationship between learning method, motivation, and self-discipline as factors that affect students' retrospective perceptions of online learning.

Literature Review

What is Motivation?

Motivation is a term that describes the drivers of behavior. Theories of motivation try to explain the processes that drive individuals to act and behave in a specific manner.

Researchers found that motivation is essential for meaningful learning and for achievements in challenging tasks. It is an important condition, at least as important as knowledge and grades with respect to acceptance into and success in tertiary education and employment (Kaplan & Asor, 2001). The concept of motivation refers to the desire to invest time and effort in a specific action, even when it entails difficulties, high costs, and failure. Motivation is an internal mental entity yet its intensity can be measured in different ways, such as perseverance and effort despite failure, and meeting one's obligations (Asor, 2005).

Motivations are the reasons that cause people to act in a certain manner in a certain situation. They exist as part of a person's structure of goals and as part of their beliefs about the significance of different issues. Furthermore, they determine the path that people will take and the goals they define for themselves (Filchenfeld, 2003).

Kaplan and Asor (2001) argue that motivation attributed to action contains a choice between alternative goals and means that can be controlled and directed to a specific goal. They define three dimensions of motivational behavior: direction, intensity, and quality. Direction refers to the choice that a person makes when they choose which action to perform persistently even when problems or alternative arise, or to continue to persevere in a task and perform a specific action even when the individual is not required to do so. Intensity is the extent of effort that a person invests in a specific action. Quality distinguishes between behaviors with different motivational character. Three key processes are proposed to underlie high quality motivation for learning: high self-efficacy of learning; self-confidence and belonging; and a sense of meaningfulness. When these three processes exist, a learner's motivation for learning will be high and of high quality (Kaplan & Asor, 2001).

Motivation is a theoretical concept that refers to an individual's urges, motives, and actions, and describes how an individual respond to need and takes various actions to achieve their goals. In recent decades, the role of motivation in learning and adaptation to learning has been increasingly recognized, such as emotions toward learning and coping with difficulties and failure. In the educational context, motivation for learning is a variable that explains the extent to which a learner shows interest and expends effort to achieve their goals (Beck, 2021).

Grew (2017) defines motivation as the individual's desire to invest resources in a specific behavior. According to the theory of self-directed learning, individuals have three intrinsic needs: the need for autonomy, the need for efficacy, and the need for belonging. The theory of self-directed learning situates the sources of motivation on a continuum that extends from external to internal factors.

Types of Motivation: Intrinsic and Extrinsic

In the research literature we found a distinction between intrinsic and extrinsic motivation, including studies that address a combination of both types of motivation.

Intrinsic motivation: Deci and Ryan (1991) argue that intrinsic motivation is embedded in individuals, and constitute the desire to engage in an action for the sake of enjoyment. Intrinsic motivation is a motivational action that derives from the individual themselves, and engagement in that action is entirely volitional. When behavior is independent, the regulation is a choice, and individuals feel that the reason for the action originates from inside them. Intrinsic motivation causes a person to engage in the action in which they wish to engage, and frequently this will cause them to develop expertise (Brophy, 1999).

Studies associated motivation, based on self-determination theory, and various educational outcomes, in learners ranging from early elementary school to students in academic institutions. Some of these studies found that students with stronger self-directed motivation attained higher learning achievements compared with students with lower self-directedness. Furthermore, students who reported that they were intrinsically motivated to study for an exam demonstrated greater conceptual understanding than students who studied the material only for the test. Furthermore, researchers measured intrinsic motivation for specific subjects such as math and reading in elementary school and junior high school students and found a statistically significant correlation between intrinsic motivation and achievements in those subjects (Daoust, Vallernd, & Blais, 1998).

Asor (2005) also noted that intrinsic motivation refers to effort expended for a sense of enjoyment and interest. When something internal drives a child to act in a specific way, or to learn something, the child will invest more effort because it generates enjoyment and interest. When learners engage in activities that are intrinsically motivated, they are attentive to and concentrate on the task and therefore can perform it in the best possible way. For example, the learner will devote little thought to the effects of their performance on their self-esteem or their status in others' eyes. When a learner demonstrates willingness to invest in a task due to interest or enjoyment, the learner's creativity increases, and there

is an absence of negative emotions such as anxiety, stress, anger, and others. The learner can gain many benefits from intrinsic motivation in a wide range of fields: It creates a very positive emotional experience, it constitutes means for identity building, it promotes in-depth and creative learning, it promotes consideration of others and a sense of belonging to the physical learning space, and it constitutes a means for constructive coping with a sense of emptiness and free time and with peer pressure.

Extrinsic motivation: Extrinsic motivation originates from external factors that compel the individual to engage in an action in order to achieve a goal. Behaviors that are extrinsically motivated as instrumental: They are not performed out of a sense of interest, but rather are based on the belief that they are instrumental for specific outcomes. Four types of extrinsic motivation have been identified: external regulation, introjected regulation, identification, and integrated regulation (Mulang, 2021).

Deci and Ryan (1991) argue that while intrinsic motivation describes a situation in which an individual performs an action out of a sense of pure enjoyment, extrinsic motivation can be integrated into the self to various degrees. At the most external level are behaviors that a person performs because they are clearly controlled by an external force. At a less, external level are behaviors that a person performs in order to meet the expectations of others who are of importance to the individual. At the most internal level of extrinsic motivation are behaviors that a person performs because they are aligned with the individual's important goals and values that reflect the individual's identity. At a high level of integration are behaviors that a person performs because they identify with the value of those behaviors.

Combination of intrinsic and extrinsic motivation: According to self-determination theory, extrinsic and intrinsic motivation are not dichotomous concepts, but are rather two poles on a continuum that describes the extent to which actions are autonomous and meaningful. For example, some motivations for behavior are at the extrinsic motivation pole, others are at the intrinsic motivation pole, and yet others are positioned on various points of this continuum between the two poles. Self-determination theory argues that the more intrinsic a motivation is considered to be, the higher the quality of the motivation. Therefore, when learners' basic needs for autonomy and competence are satisfied, learners will perceive the motivations for their behavior as stemming from inside themselves, and they will have intrinsic motivation for that action. In addition, when an action supports the three basic needs, the individual will internalize the performance of behaviors that were originally were performed purely on the basis of extrinsic motivation (Kallan & Asor, 2001).

It is conventionally accepted to distinguish motivation from internal sources from motivation from external sources. Learners who have intrinsic motivation for a learning activity will devote more time to time, will study it better, and will gain more enjoyment from the activity compared to learners who are extrinsically motivated. It was found that extrinsic and intrinsic motivation are two contrary forms and behaviors that are extrinsically motivated are not considered self-directed behaviors. However, it quickly became clear that intrinsic and extrinsic motivation are insufficient to describe learners'

diverse motivations. Motivation increases when learners notice that they are making progress in their learning. The more they work on their task and become more skilled, they gain self-efficacy.

The literature notes that performance that is extrinsically motivated is characterized by the investment of less effort, focus on more simple tasks, compared with intrinsically motivated actions that are characterized by the investment of extensive efforts and selection of complex and challenging tasks (Filchenfeld, 2003).

Motivation Theory and Self-Discipline

Motivation theories offer explanations of the processes that cause learners to invest effort and persevere in their studies, and that lead them to be socially involvement and extend assistance to others. In addition, these theories try to explain what factors lead to high quality of efforts invested in learning and in social involvement, both from the perspective of learners' feelings and from the perspective of their learning outcomes. How Different school goals are perceived necessarily influences the way a school defines its desired type of motivation, and on the methods that are offered to encourage this type of motivation in the school's teachers and students (Brophy, 1999).

The topic of motivation also attracted interest in Ancient Greece, the era of Plato and Aristotle. Aristotle believed that a person's soul is comprised of physical, emotional, and logical elements, which are related to each other in a hierarchical order. Aristotle, who was a student of Plato, confirmed this opinion by modifying the terms of motivation. In his view, the physical and emotional parts of the human body affect and provide motivation for physical growth and relaxation, which create sensory experiences such as pleasure and pain. Together, these two experiences are the foundation for irrational and impulsive motivation (Mulang, 2021).

Interest in motivational processes declined in the 1960s following the cognitive revolution, when cognitive processes became a popular topic of study in psychology in general, and specifically in educational psychology. Only in the mid-1970s did research return to motivation theories, and the field of motivation developed in the 1980s, until one of the leading social psychologists in the US declared in 1992 that "the concept of motivation is back" (Pervin, 1992, 162). In recent years, motivation's key role in learners' successful learning and other adaptive processes including emotions toward learning and school and optimally coping with failure in general, is increasingly recognized (Kaplan & Asor, 2001).

The behavioral theory of motivation, which was developed by Skinner (1968), concerns behavior frequency and stresses the environment role as the source of motivation. This theory posits that motivation varies according to the positive and negative feedback that are present in every situation, and focuses on motivational processes for specific actions. Advocates of this theory argue that individuals are basically motivated to seek out positive experiences and avoid negative experiences. Motivation or behavior in a specific direction and at a specific intensity stems from the individual's history of positive and negative feedback. Behavior that leads to a positive experience and feedback will tend to be

performed more frequently while behaviors that led in the past to punishment or negative feedback will tend to be performed less frequently. Kaplan and Asor (2001) argue that the principles of behavioral theory can be used to effectively influence a learner's motivation in a given situation. In addition, according to the theory's emphasis on the role of environment, teachers have complete control to share their students' behaviors.

In contrast, Maslow's (1964) humanistic theory stresses the significance of behavior for humans. This theory argues that motivation originates in an individual's inherent needs, and posits that motivation varies according to the satisfaction of these needs, focusing on the most general motivations of self-esteem and self-actualization. Self-determination theory is based on the humanistic approach and posits that three basic inherent needs underlie human behavior: the need for autonomy, the need for competence, and the need for relationships and belonging. According to this theory, satisfaction of these needs leads individuals to a deeper involvement in the activities that they engage in, while the repression or non-satisfaction of these needs will diminish the quality of their motivation and sometimes diminish its intensity. For example, the theory argues that students' motivation will be low when they feel that the teacher is forcing them to learn things that are unrelated to their own individual inclinations, plans, or authentic values. Satisfaction of needs depends on many factors such as the child's family situation, their parent's educational approach, the child's peers and their values, and the educational practices employed by the school (Deci, Koestner, & Ryan, 1991).

Contemporary theories tend to recognize a combination of personal traits and environmental factors that affect a person's motivation in different situations (Kaplan & Asor, 2001). One of the most dominant approaches, at least until the 1970s, argued that motivation for specific actions in a given situation is affected mainly by long-term personal motivators. For example, this approach argues that motivation to expend efforts in studying for an exam obtains its intensity from a psychological need for achievement. McClelland (1961), one of the proponents of this approach, argued that this is not a conscious need: It is shaped in a child's early years by the child's experiences in their family, group, or culture, and defines the child's personal tendency to succeed in achievement situations.

Kaplan and Asor (2001) argue that the processes that lead a specific learner to act in a specific manner in the classroom are extremely complex. These processes almost always include an interaction between the child's traits, the features of the wider social context, and the features of the specific situation in which the child performs the behavior. Each motivation theory highlights a specific aspect of these processes, which is influenced by its proponents' values and beliefs concerning human nature and society and the goals of the educational process.

In summary, the research literature refers to the distinction between motivation and self-discipline, and the significance of their combination. Motivation is the reason for movement, which drives people to action. Therefore, motivation is related to emotions, to an emotional state that activates, directs, and maintains human behavior. Motivation is dynamic, it varies across events. However, self-discipline can operate in an orderly fashion

and persist toward the achievement of a goal. In contrast to motivation, self-discipline is related to intelligence. The mind “knows” what to do to achieve the goal (Notov, 2019). Researchers have pointed to the social element’s potential to increase both motivation and self-discipline (Mulang, 2021).

Features of Motivation for Learning

Motivation for learning is the individual’s orientation toward the learning process. This process entails a wide range of emotions in students that can be organized in two categories: motivation that promotes learning and includes positive emotions such as pleasure, curiosity, gratification, a desire to succeed; and motivation that inhibits learning and includes negative emotions such as fear, stress, and difficulty (Notov, 2019). Maehr and Kaplan (2000) argue that individual subjectively assess the learning challenges before them according to the effort and time that they believe will be needed to complete the learning task. When positive emotions such as interest, curiosity, and joy are expressed, this contributes to the performance of the task, while negative emotions inhibit performance.

Meaningful learning is characterized by the student’s emotional involvement, and an interaction between the learner and the environment that contributes to the learner’s personal growth and professional capabilities. These interests and desires are the factors that lead learners to demonstrate flexibility and problem solving, to acquire knowledge more efficiently, and to a stronger self of self-esteem and social responsibility (Mulang, 2021).

Eshel (2010) referred to a belief held by university faculty that students are responsible for their own motivation and therefore they typically impose this responsibility on their students. In a perfect world, high school students would arrive on campus ready to absorb knowledge, they would come to class early, and bombard their instructors with questions that would drive learning in the right direction. However, this is not usually the case. Eshel argued that faculty members must assume responsibility for their students’ motivation because certain actions that faculty members take or refrain from taking lower their students’ enthusiasm. Eshel proposes three ways to improve motivation: to promote the value of a topic in the students’ eyes, increase students’ self-confidence, and improve the classroom climate. He argues that in this way it is possible to promote students’ learning. Notov (2019) added that the goal of each instructor is to design a course in which learning becomes a meaningful process for all students. Findings of her study indicate that students who experienced meaningful learning in a course experienced learning-promoting experiences characterized by positive emotions such as curiosity, interest, creativity, critical reasoning, and enthusiasm.

Furthermore, it was found that when students are permitted to select their own tasks and determine the time allotted to each task, they were more intrinsically motivated than students whose tasks and time allotments were dictated. Similar results were obtained in a study on female high school students (Sasy, 2016). Other studies showed that when people wish to perform an interesting activity, but in an unfamiliar manner, they the task or the

method of performance generates a sense of discomfort, and their motivation will decrease (Koestner, Ryan, Bernieri & Holy, 1984).

Motivation for learning is different in school children and in students, considering the fact that students are more mature and supposedly arrive “prepared” for learning toward an academic degree. It was found that elementary schoolchildren’s motivation is affected not only by their school experiences but also by their home life. It was found that parental style (support of autonomy or control and involvement) affect schoolchildren’s self-regulation of their school achievements (Mulang, 2021).

Learners form perceptions about their own abilities in two ways: First and foremost, school children use grades and teachers’ feedback to assess their own abilities. They also make comparisons: They compare their own performance to the performance of other students in order to judge their competences in that subject. Schoolchildren may feel more competent in situations in which they succeed more than others (Chung & Chung, 2017). Zehayek and Hammer (2014) argue that the teacher-student relationship can also generate children’s motivation. In their study, they found that the majority of schoolchildren reported that they feel closer to their teachers than to their friends on Facebook, when their conversations with their teachers are on personal topics and not only on topics related to schoolwork. These researchers found that schoolchildren’s motivation for learning is strongly influenced by teacher-pupil relations on Facebook.

Gruzd, Staves, and Wilk (2012) argue that pupils expected to receive incentives for their behavior, and incentives can be transformed so that they come from an intrinsic source. Although schoolchildren may not be autonomous learners, acquiring a motivation for achievement or transforming it into a need for self-growth in the learning situation can create an effective process of internalizing motivation. Schoolchildren with an essential motivation for learning do not need incentives. They can make independent decisions and acquire a sense of pleasure and achievement from the learning process. According to their study, it is also possible to created motivation for learning by combining pupils’ intrinsic areas of interest and external rewards by parents or teachers.

Combining Self-Discipline and Motivation for Learning

Many scholars define learning as the process of acquiring, expanding, or improving knowledge, comprehension, competencies, or skills. In this way we can define learning as change, progress, and growth in any process (Kaniel, 2006). Meaningful learning is an individual, conscious, informed process in which the learner structures their knowledge independently and within their social inter-relations. Several values including the learner’s engagement with learning, operate concurrently in meaningful learning. The learning process is more fruitful when the learner is active in the learning process and demonstrates curiosity, initiative, and motivation for learning that includes diverse aspects of experience.

Learning is accompanied by an interesting emotional and cognitive experience that challenges the learners. The relevance of learning and the study materials is related to the learner’s existing knowledge base. The learner considers the material to be interesting and

contributes to their personal and moral growth. The learning materials are considered to be important by the individual learner and by society. The learning process invites a process of deep comprehension, and encourages academic and social achievements, excellence, realization of one's potential, and cognitive development (Sasy, 2016).

Filchenfeld (2003) argues that pupils will attain learning achievements on the condition that they are motivated to learn. Pupils' motivation for learning achievements also includes a preference for high standard performance and consistent willingness to expend efforts in order to achieve this standard. To do so, pupils must feel that their investment of effort in this field may yield an appropriate return. If pupils feel that they may generate higher returns by investing in another subject, they will prefer to do so, especially when they believe that their success in a subject is not in their control. To achieve a high standard of performance in a subject, the teacher must cultivate pupils' intrinsic motivation by explaining to them that attaining such achievements is in their control and is their responsibility. Motivation for learning is driven by various factors. According to Katz (2004), motivation for learning is driven by personal motives such as the psychological need for achievement and success, and is also affected by the individual's self-image. Motivation for learning is affected by an individual's self-image and identity. According to Katz (2004), motivation for learning, self-image, and self-esteem are positively correlated.

Saada (2007) believes that motivation for learning is attributed to different factors, such as task readiness, freedom of choice, extent of involvement, investment in personal proclivities. Brophy (1999) argues that the features of an area of learning or activity must match the learner's knowledge and previous experience in a manner that evokes interest to pursue learning. This will occur when the field is sufficiently familiar to the learner, so that the learner can identify it as a learning opportunity that is sufficiently appealing to that it interests the learner to pursue it. Furthermore, Brophy argues that teachers can help pupils begin to identify the potential of their learning. Teachers can encourage their pupils' motivation and this will transform the school learning experience into a significant experience for the pupils, not only in terms of a cognitive experience but also significant from a motivational perspective.

Practical teaching strategies can be developed by combining the current teaching trend and the benefits of digital learning in order to increase the efficiency of teaching and increase learners' motivation. There are a considerable number of teachers who combine a variety of techniques in school to help their pupils learn, such as frontal teaching and teaching based on digital technology. Teachers share the responsibility of increasing the efficiency of teaching. They can teach using new media and technologies, and this may cause their pupils to be eager to learn and they can cultivate a new generation using rational, creative media and critical reasoning. It was found that both online learning and frontal learning can increase learners' self-efficacy, and motivation for good, in-depth learning (Lin, Chen & Liu, 2017).

The academic campus is a significant factor in students' lives. Traditionally, most efforts were directed to students' cognitive achievements and how to ensure excellent research performance.

This research studies, for the first time, the relation between the learning method, motivation, and self-discipline as factors that affect students' perceptions of online teaching from a retrospective perspective, against the backdrop of over two years of a global pandemic. The study is based on the connection between motivation and self-discipline, with emphasis on motivation's power to generate self-discipline, and the implications of these forces on perceptions of online learning. As Sir Alexander Paterson stated "The secret of discipline is motivation. When a man is sufficiently motivated, discipline will take care of itself"(cited in Poleanschi, 2013).

Methodology

Initial Sample

The survey was administered on Google Forms and disseminated to students enrolled in several academic institutions in Israel. It included an open question regarding the disadvantages of the online teaching during the current Covid-19 pandemic. Respondents also rated their agreement to the following item on a Likert-type scale from 1 (*completely disagree*) to 5 (*completely agree*): Online teaching does not permit me to study as I really would like to.

Completed questionnaires were returned by 1,928 respondents. The majority of respondents were enrolled in Ariel University (918) and Sami-Shimon College (404). Gender ratio of respondents was 53.1% females and 46.9% males. Respondents' age distribution is as follows: 18-28 (74.2%), 29-52 (24.5 %) and 53-67 (1.3 %).

Analysis

We analyzed data using a mixed-methods design (Connelly, 2009). First, we manually explored the responses of the open-ended question and identified the main themes regarding the challenges and disadvantages specified. Every response was coded 0 if the response did not belong to the category, and 1 if it did (Eckhaus & Sheaffer, 2018).

Table 1 presents a list of the themes extracted from the responses to the open-ended question.

Table 1. Main themes.

	Variable symbol	N
ADHD	C2	395
Motivation	C5	66

Requires self-discipline	C6	141
I miss the formal setting	C7	166
Atmosphere not conducive to learning	C9	121
No study groups	C10	122
Few social ties with other students	C11	66
Distractions and disruptions at home	C12	482

We used Structural Equation Modeling (SEM) to evaluate goodness-of-fit (Levy & Eckhaus, 2020) using CFI, NFI, TLI, RMSEA, SRMR, and the ratio CMIN/DF. Acceptable fit is indicated by the following indices: CFI, TLI and NFI $> .9$ and CMIN / DF < 5 (Andrew Chin et al., 2018), RMSEA and SRMR values < 0.05 (Kircaburun & Griffiths, 2018).

Empirical Results

Figure 1 presents the model and standardized coefficients.

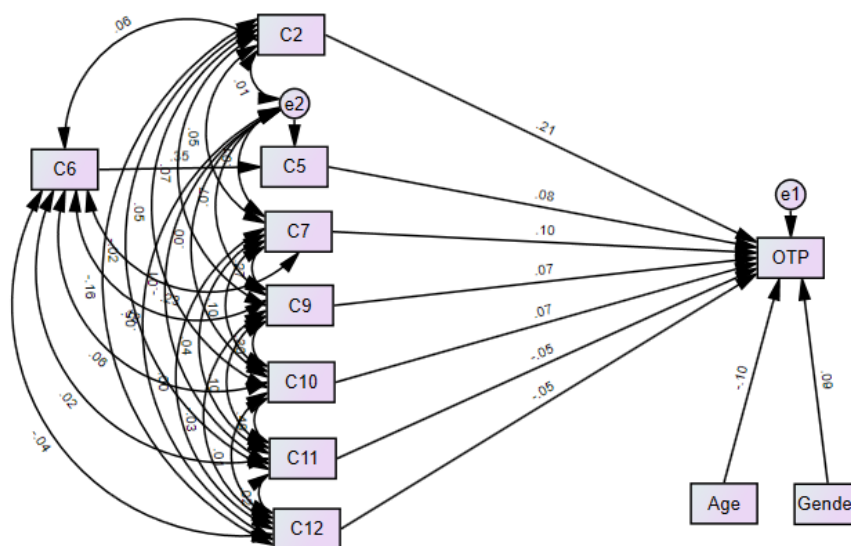


Figure 1. Model and standardized coefficients.

Table 3. Variables effects

Independent	Dependent	Significance
C6	C5	$p < .001$
C2	OTP	$p < .001$
C5	OTP	$p < .001$
C7	OTP	$p < .001$
C9	OTP	$p < .01$

C10	OTP	$p < .05$
C11	OTP	$p < .05$
C12	OTP	$p < .05$
Age	OTP	$p < .001$
Gender	OTP	$p < .001$

The hypothesized model showed good fit: CMIN/DF = 3.3, CFI = .97, NFI = .96, TLI = .92, RMSEA = .04, SRMR = .02. All the variables had an effect on OTP; C11, C12, and Age had a negative effect on OTP, and the remaining variables show a positive effect on OTP (Table 3). Age had a negative effect on OTP ($\beta = .10$, $p < .001$), meaning that the older the students, the more they prefer online studies. Gender had a positive effect on OTP ($\beta = .09$, $p < .001$); Gender was binary coded, and the results therefore show that female students prefer online learning more than male students. C5 mediated the indirect effect of C6 on OTP and was significant ($\beta = .03$, $p < .001$). Bootstrapped Confidence Interval (CI) ranged between [.02, .04].

Discussion

This study focused on the relationship between learning method, motivation, and self-discipline as factors that affect students' perceptions of online learning from a retrospective perspective. The findings of our study show that, with respect to self-discipline, distractions and disruptions at home make it difficult for students to study online but they do not adversely affect the perceived quality of online teaching. It appears that students learn how to combine online learning into their daily lives, and what seems to be a shortcoming in the short term will become positive as they advance in their studies. Moreover, online teaching requires students' self-discipline, but does not affect perceived quality of teaching. However, when students' motivation for learning diminishes due to online teaching, we find that students have less self-discipline, which lowers perceptions related to teaching. In addition, students are bothered by the paucity of social ties with their classmates, as a result of online learning, but it does not affect their learning.

The findings of this study may have a contribution to improving teaching and learning when students use digital tools, especially in academic institutions where frontal learning remains relevant and significant. The findings of this study support the significance of the

association between learning method, motivation, and self-discipline, as factors that affect students' retrospective perceptions of online learning. The question is whether it is the instructor's responsibility to generate motivation to help students increase their self-discipline or whether motivation and self-discipline are the exclusive responsibility of students.

The academic campus is a significant factor in students' lives. Traditionally, most efforts were directed to students' cognitive achievements and how to ensure excellent research performance. The findings of this study shed light on another role that the campus and instructor play, a role that strengthens learners' motivational factors, self-discipline, and learning methods that involve social partnerships, and students' learning community. All these are relevant learning outcomes for the digital generation, outcomes that may promote and improve students' academic achievements and affect their overall functioning on and off campus.

Limitations and Future Research

Another important challenge that should be explored by future research is the effect of socio-economic status on students' perceptions of online learning. Online media stress the need for basic technological resources: Most but not all students have these resources. The younger generation is inundated by technological noise, especially social media and information sharing on technological platforms. Students who lack basic technological means encounter a daily challenge to take their place in the social environment where such means are required. However, when it comes to education, the system should ensure that all students have access to a shared foundation. The covid pandemic with its frequent physical lockdowns prevented students in need from accessing computers in local libraries or community centers and as a result, needy students encounter yet another layer of challenges. Future studies that explore this issue will offer important information on how to deal with some of the potential problems that the use of digital media creates, especially in our challenging times.

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