Perception of the Academic Lecturer's Profile: From Research Orientation to Pedagogic Orientation, and Implications for the Digital Learning of Students

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ABSTRACT

Aim. This study aims to examine the effect of lecturers' teaching orientations, as perceived by students, on students' digital learning patterns, differentiating between research-oriented and pedagogy-oriented teaching approaches.

Methods. A survey method was employed to collect data from undergraduate students regarding their perceptions of their lecturers' orientations and their own digital learning patterns. Descriptive statistical analysis, Pearson correlation, and mediation models were utilised to analyse the relationships between variables.

Results. The findings indicate that when students perceived the lecturer as research-oriented, no significant indirect association mediated by the digital learning experience was found between the lecturer's profile and both active and passive digital learning patterns. However, the association between the research-oriented lecturer and active digital learning was partially mediated by the student's reading habits, while the association with passive digital learning was fully mediated by reading habits. For pedagogy-oriented lecturers, both active and passive digital learning patterns were partially mediated by the student's learning experience, with no significant mediation by reading habits.

Conclusion. The study suggests that research-oriented lecturers influence active digital learning through students' reading habits, while pedagogy-oriented lecturers influence both active and passive digital learning through students' digital learning experiences. Understanding these dynamics can help educational institutions support lecturers in their professional development and improve student learning outcomes in digital environments.

Keywords: pedagogic and research orientation, teacher-lecturer, reading habits, learning experience, learning pattern, digital learning

Introduction

The Covid-19 pandemic significantly impacted higher education, introducing a new teaching and learning reality characterised by social isolation and the absence of face-to-face interactions. Academic institutions faced the challenge of continuing studies despite physical closures, leading to an urgent shift to remote learning without prior preparation. As a result, traditional learning was rapidly replaced by online learning, with academic staff integrating techno-pedagogic tools on the fly (Davidovitch & Wadmany, 2021).

Lecturers were thrust into online teaching with minimal training, requiring them to quickly adopt new technologies and adjust their teaching methods to ensure continuous learning. This period presented both challenges and opportunities for incorporating online learning into future academic programs. The Covid-19 crisis marked a turning point in higher education, forcing a swift and unprepared transition to online learning, both globally and in Israel. This transition created a unique learning experience, shaped by the tensions and anxieties inherent in emergency situations (Charnsil et al., 2020).

In such conditions, students may be less available for learning, yet continued education provides a vital anchor, helping maintain routine and offering emotional support. Therefore, supporting learning during emergencies is crucial for students' well-being and academic success.

This study aims to examine the effect of lecturers' teaching orientations on students' digital learning patterns in the post-Covid era. It is pioneering in distinguishing between

research-oriented and pedagogy-oriented teaching and in exploring the implications of active versus passive digital learning.

Research Literature

Traditional Teaching Tested by Covid

The shift from face-to-face to online teaching during a crisis led to a significant increase in online courses at higher education institutions worldwide. These courses, which typically ran alongside traditional ones, became essential as institutions were forced to transition to online learning immediately due to Covid-19. This required a rapid reorganisation, adapting lessons to an online format that included technological tools, communication channels, and suitable content, all without prior preparation (Davidovitch & Wadmany, 2021).

Leanne Martin et al. (2020) highlighted that lecturers, unfamiliar with online teaching methods, faced a new reality with no prior experience. Support from academic institutions was crucial for successfully navigating this transition (Stone & O'Shea, 2019). Techno-pedagogic support, including guidance, planning, and ongoing technical assistance, plays a vital role in integrating technological innovations in both routine and emergency situations. In an emergency, there is limited time to prepare and convert traditional courses to an online format, so efforts focus on managing technological tools and ensuring participant engagement during lessons (Zhang, 2020).

These circumstances challenge lecturers to maintain both regular teaching and the quality of instruction while staying connected with students. Some argue that in such a dynamic environment, a flexible, student-centred course structure is necessary to ensure engagement, participation in discussions and activities, and timely submission of assignments (Tanis, 2020).

Between Traditional Teaching and Online Teaching

Traditional teaching, one of the oldest methods, is characterised by the teacher controlling the lesson, face-to-face interactions, and a structured learning environment where the teacher is the sole source of knowledge. In contrast, online learning occurs in an online environment using internet-connected devices like computers, tablets, or smartphones, requiring digital literacy.

The research literature highlights several key differences between traditional and online teaching:

Communication — In online teaching, especially without physical interactions, communication remains crucial. Tools such as email, discussion forums, online office

hours, and messaging platforms are essential for maintaining the relationship between students and faculty (Freeman & Jarvie-Eggart, 2019). Frequent communication is linked to higher student engagement, success, and the formation of learning communities, reducing loneliness. Technological tools used in online learning, which had begun to replace face-to-face methods even before the crisis, now support increased student engagement and interactivity with the study material, facilitating gradual progress and peer evaluation (Gloria & Uttal, 2020).

Techno-pedagogic Competencies – The transition from traditional to online teaching required faculty to develop new competencies, such as managing virtual classrooms and using digital tools instead of traditional whiteboards. This was particularly challenging during the crisis, where the emphasis was on managing online learning without sufficient focus on pedagogy.

Privacy – The use of technological tools in online learning raises concerns about privacy and information security. Lecturers worry about the misuse of online content, which could harm their academic reputation (Chen & Bryer, 2012). The rapid transition to online teaching created a sense of instability among faculty, who faced challenges such as inadequate policies, insufficient infrastructure, and the need to quickly familiarise themselves with new tools (Mansbach & Austin, 2018; Zhang, 2020).

The Transition from Traditional Teaching to Online Teaching – in Theory and in Practice From the Teachers' Perspective

Martin et al. (2020) found that the abrupt transition to online teaching left lecturers feeling helpless and unprepared, despite their years of experience. The sudden shift created uncertainty regarding their readiness for online teaching.

In a study by Nizar Bitar and Nitza Davidovitch (2024), lecturers reported that the time required for online teaching was considerable and challenging. Tasks such as lesson planning, learning techno-pedagogic tools, creating and adapting evaluation methods, and establishing communication channels were demanding yet essential for maintaining teaching quality and covering the curriculum. Additionally, redesigning, guiding, and planning pedagogic and technological needs were critical for effective learning.

In higher education institutions, the implementation of learning, student experience, and adaptation to new circumstances are vital. Lydia R. Frass et al. (2017) found that guidance is a key factor influencing lecturers' approach to change and their confidence in handling it. The study emphasised the need to adapt teaching strategies to the lesson's nature and goals, compensate and recognise lecturers' efforts, provide designated workshops, ensure appropriate teaching equipment and spaces at home,

control the information accessible to students, manage the distribution of recordings, find alternative evaluation tools, and offer solutions for practical lessons.

The Role of the Lecturer in Shaping Students' Learning Experience in Online Courses

Interaction with the lecturer is crucial for shaping students' experiences in online courses. The lecturer's role in planning and managing the learning process—cognitively, emotionally, and socially—is vital. The ability to adapt to the online environment and engage students significantly enhances their learning experience and contributes to their success (Arbaugh et al., 2019; Whitaker et al., 2020). A lecturer's accessibility and social presence in the online environment lead to higher student satisfaction with both the lecturer and the course (Ladyshewsky, 2013).

In this study, a "research-oriented lecturer" is defined as one who prioritises imparting research knowledge, developing independent reasoning, and maintaining academic rigour. This approach aligns with the RMRCK-model, emphasising skills in reviewing research, methodological skills, reflecting on findings, communication, and content knowledge (Böttcher & Thiel, 2017). Research-oriented lecturers integrate research findings into teaching, engage in publication activity, participate in research networks, and advise students in research (Galimova & Halmetov, 2022). Conversely, a "pedagogy-oriented lecturer" focuses on clear teaching, effective course organisation, simplifying material, creating a positive atmosphere, and maintaining empathetic communication with students.

An empathetic lecturer enhances students' learning experience and success (Prichard & Trowler, 2018). Lecturers also play a key role in forming students' social experiences in courses. Encouraging a sense of community and stimulating social interaction leads to a more successful online learning experience (Overbaugh & Nickel, 2011). Student engagement significantly impacts their achievements and study process (Prichard & Trowler, 2018). While students must be willing to engage actively, lecturers must create conditions that stimulate engagement. This is particularly challenging in online courses due to the distance between students and lecturers (Wadmany & Davidovitch, 2023).

Students value lecturers' efforts to maintain communication, provide quick responses, and offer feedback, but are less appreciative of attempts to promote active and cooperative learning. This preference aligns with findings showing that students who transition to online learning often favour traditional face-to-face learning models and are less satisfied with alternative teaching strategies (Wong, 2013).

Students' Perspective

Hagit Meishar-Tal and Ariella Levenberg (2021) examined the learning experience of students who participated in online remote learning during the time of Covid-19. The study explored the association between the learning experience and how students participated in online lessons, versus how the course was managed by lecturers. The findings show that students' general learning experience was ranked as moderate, meaning that it was not experienced as very positive but also not as very negative. The transition to online remote learning appears to have been particularly detrimental to students' social experience, where they reported a low sense of proximity to their peers and to the lecturers during this semester. The study indicated that the impact of students' active engagement and lecturers' behaviour on students' learning experience during Covid-19 points to the considerable importance of students' empathy for shaping a positive learning experience, particularly in a time of emergency. In addition, the study illuminates the complexity involved in the activation component during online lessons. Although pedagogically, there is extensive agreement as to the importance of activating students for the pu*rp*ose of engagement in the lesson and its contribution to academic achievements, in the context of students' learning experience not only does this activity not contribute to the learning experience but rather it might also have a harmful effect.

Meishar-Tal and Levenberg (2021) focused on the pedagogic sphere, and particularly on online teaching. Their study relates to students' general learning experience where students' experience of the learning space, namely learning from home via technological means, was rated highest, indicating that adjustment to remote learning from home was not too hard for students and was experienced from certain angles as fairly comfortable. From the cognitive aspect, the learning experience was ranked moderate and low, indicating that students encountered difficulties with understanding and concentration and did not see this type of learning as efficient learning that contributes to their academic achievements. Students' social experience was ranked lowest of all aspects of the learning experience. The transition to online learning seems to have been particularly detrimental for students' social experience, where they reported a low sense of proximity to their peers and to the lecturers during this semester.

Regarding students' engagement in the lessons, students were found to have been engaged in the lesson to a moderate to high degree, where the main manifestation of engagement in the lesson was attendance of online lessons, passive listening, and carrying out assignments and activities initiated by the lecturers. In contrast, activities they themselves initiated in the lessons, such as asking questions and providing voluntary answers to the lecturer's questions, received only a moderate score. Finally, the fact that students reported only rarely turning on their video camera and being busy with other things during the lesson, indicates the possibility that their attendance of the lesson was merely physical and not cognitive. Indeed, examining

the association between students' level of active engagement in the lesson and their learning experience found that the higher students' active engagement in the lesson, the higher their cognitive experience. In addition, active engagement also contributed to the social experience. These findings corroborate previous findings emphasising the importance of students' active engagement in class for learning. Lecturers' conduct too had a considerable impact on students' learning experience. In basic management of lessons, i.e., preparing presentations, turning on their video camera, recording the lesson, and managing the course website, lecturers were found to receive high rankings. In the advanced management of the course, however, which includes not only one-way imparting of information but also interaction and activation of the students, lecturers' conduct was ranked slightly below moderate. Another important finding is that also for empathy and personal attention lecturers were ranked as merely moderate. This finding shows that lecturers are insufficiently aware of the importance of their empathy in times of emergency (Trust & Whalen, 2020). The lecturer's empathy and personal attention has a very significant contribution to explaining the variance in the learning experience. These findings indicate the power of empathy and its important status in shaping students' learning experience. Lecturers have major responsibility for cultivating empathy and personal attention in students in the transition to online learning in general and particularly in the context of the Covid-19 pandemic, which requires an empathic approach to students even more than in other situations (Bozkurt & Sharma, 2020).

Another finding arising from the research is that strategies for activating students by the lecturers using advanced technological tools were on one hand found to contribute to students' engagement in the lesson, as known from previous studies and reported by Davidovitch and Yael Yossel-Eisenbach (2019), but on the other were found to negatively predict the learning experience. Namely, the more lecturers activated the students the more they raised students' engagement in lessons, but this was also detrimental to their overall learning experience. This finding may indicate that activating students requires students to be more attentive and engaged in the lesson and thus to employ more effort, which is perceived as detrimental to the learning experience. As a result, an activity aimed at contributing to the effectiveness of learning in fact harms the learning experience. Students prefer to be passive, not to turn on their video cameras, and to be present only formally but not actively in the lessons, even at the cost of detracting from their academic achievements.

But how does research literature contribute to understanding the causes affecting the shaping of active and passive digital learning patterns? In this study we chose to focus on the effect of the lecturer's profile as perceived by the students, the students' learning experience, digital accessibility, the institution, the impact of the environment on learning, academic capabilities, and gender, on shaping two digital learning patterns: active and passive.

Research Questions

Active Digital Learning Pattern

- Is there an association between the student's experience of digital teaching, the student's perception of the lecturer's role in digital teaching, and the student's reading habits, *versus the student's active digital learning pattern?*
- Does the student's experience of digital learning have the effect of mediating the association between the student's perception of the lecturer's role in digital teaching *and the student's active digital learning pattern?*
- Do the student's reading habits have the effect of mediating the association between the student's perception of the lecturer's role in digital teaching *and the student's active digital learning pattern?*

Passive Digital Learning Pattern

- Is there an association between the student's experience of digital teaching, the student's perception of the lecturer's role in digital teaching, and the student's reading habits, *versus the student's passive digital learning pattern?*
- Does the student's experience of digital learning have the effect of mediating the association between the student's perception of the lecturer's role in digital teaching and the student's *passive digital learning pattern?*
- Do the student's reading habits have the effect of mediating the association between the student's perception of the lecturer's role in digital teaching and the student's *passive digital learning pattern?*

Method

Research Population

The study focused on undergraduate students in the 2022/23 academic year, a point in time that reflects dramatic changes in digital teaching and learning at institutions of higher education, following the Covid-19 crisis. This period was characterised by much experience with e-teaching in academia and high exposure of students to e-teaching in their high school and academic studies.

Source of the Data

The data was collected during the 2022/23 academic year. The questionnaire was distributed on social media. The sample consisted of 181 college students, 73% women and 27% men, and 161 university students, 76% women and 24% men.

Method of Analysis

- *Descriptive statistical analysis:* To examine the distribution of the research variables.
- *Pearson correlation:* To examine the linear association between each of the two dependent variables: active digital learning pattern and passive digital learning pattern, and the independent variables: digital learning experience, reading habits, pedagogy-oriented lecturer, and research-oriented lecturer.
- *Paired Samples T test:* To examine the average of the differences between pairs of observations, two samples that are dependent.
- *Mediation models:* to be explored with Andrew F. Hayes' (2022) PROCESS Macro Model 4. The significance and power of the mediation factors were explored.
- *Factor analysis:* Confirmatory factor analysis in the principal component method with Varimax rotation. A collection of statements that present a shared content world, ranked on a 5-point scale ranging from "Not at all important" (1) to "extremely important" (5), and merged to form a single variable in light of the factor analysis, by a weighted average of the statements that converged into the same content world.

Description of the variables

Dependent variables

- *"Active digital learning";*
- *"Passive digital".*

Four items were subject to a factor analysis with Varimax rotation (Table 1). They were grouped into two factors which explained a total of 72% of total variance. We labeled the two factors "active digital learning" (Eigenvalue=1.565) "Passive digital" (Eigenvalue=1.343)

Table 1

Loading of the "active digital learning" and "passive digital learning" questionnaire items

component	Item	Active digital learning	Passive digital learning
1	I attend class with an open camera	.904	
	I participate in the lesson actively: ask questions and express my opinions	.625	
2	I am accustomed to learning by watching recordings		.768
	I am accustomed to learning on Zoom while at work		.780

Note. p<.001. Factor Loading were obtained using Confirmatory factor analysis in the principal component method with Varimax rotation. Factor Loading <.40 were suppressed. The values (.904,.625, etc.) represent factor loadings.

Source. Own research.

Table 2

KMO Measure of Sampling

KMO Measure of Sampling		.535
Bartlett's Test of Sphericity	Approx. Chi-Square	342.122
	df	10
	Sig.	.000

Source. Own research.

Independent variables

The lecturer's profile: Two independent variables**:**

- *"Research-oriented lecturer";*
- *"Pedagogy-oriented lecturer".*

Fifteen items were subject to a factor analysis with Varimax rotation (Table 3). They were grouped into two factors which explained a total of 64.224% of total variance. We labelled the two factors "research-oriented lecturer" (Eigenvalue=3.670). "Pedagogy-oriented lecturer" (Eigenvalue=6.605)

Table 3

Rotated component matrix resalts "research-oriented lecturer" and "pedagogy-oriented lecturer"

component	Items	Research-oriented lecturer"	"Pedagogy-oriented lecturer"
	Imparting practical knowledge that will facilitate professional functioning in the field of the course	.622	
	Covering most of the relevant knowledge in the course	.612	
1	Imparting research knowledge and research capabilities	.755	
	Developing the capability to learn and reason independently	.605	
	Imparting wide general knowledge	.777	
	Promoting the student's oral expression capabilities	.779	
	Teaching clearly and comprehensibly		.765
	Organising the course and the lesson		.843
	Simplifying the study material		.739
	Forming a pleasant learning atmosphere		.834
2	Allowing the students to ask questions and to answer them clearly and pleasantly		.763
	Adapting the level and nature of the teaching to the majority of the students		.597
	Maintaining order and discipline		.609
	Allowing students access and readily available communication with the lecturer: e-mail before and after the lesson		.812
	Conveying empathy and caring		.796

Note. p<.001. Note: Factor Loading were obtained using Confirmatory factor analysis in the principal component method with Varimax rotation. Factor Loading <.40 were suppressed. The values (.622, .612, etc.) represent factor loadings

Source. Own research.

Table 4

KMO Measure of Sampling

KMO Measure of Sampling		.941
Bartlett's Test of Sphericity	Approx. Chi-Square	3366.104
	df	120
	Sig.	.000

Source. Own research.

"The digital learning experience"

The variable was ranked on a scale of 1-7 and measured with regard to the question: "On a scale of 1-7, how would you define your experience of remote learning, where 1 represents a negative experience and 7 a very positive experience.

"Reading habits"

Four items were subject to a factor analysis with Varimax rotation (Table 5). They were grouped into one factor which explained a total of 51.994% of total variance. We labeled the factor "Reading habits" (Eigenvalue=2.080).

Table 5

Rotated component matrix results: "impact of the environment on reading habits"

Component	Items	"Reading habits"
1	My parents influenced my reading habits	.625
	The teachers at school or a specific teacher influenced my reading habits	.812
	The lecturers at the university	.717
	Friends, acquaintances	.666
KMO Measure of Sampling		.705
Bartlett's Test of Sphericity	Approx. Chi-Square	220.307
	df	6
	Sig.	.000

Note. Factor Loading were obtained using Confirmatory factor analysis in the principal component method with Varimax rotation. Factor Loading <.40 were suppressed. The values (.625, .812, etc.) represent factor loadings. Higher values suggest a stronger association; p<.001.

Source. Own research.

Findings

Background Characteristics of the Students

The findings shown in Table 6 reveal that students' digital learning experience is not very high. The distribution of students' digital learning experience variable is in the range of -1.92 SD to +1.33 SD. Regarding students' reading habits, it is evident that the effect of the environment had a range of -1.736 SD to +2.74 SD .

Table 6

Distribution of Research Variables – Standardised

Variable	N	Minimum	Maximum
Active digital learning (Z score)	323	-1.72	1.4
Passive digital learning (Z score)	325	-1.32	2.45
Research-oriented lecturer (Z score)	313	-3.007	1.54
Pedagogy-oriented lecturer (Z score)	305	-3.625	1.011
Reading habits (Z score)	326	-1.736	2.74
Digital learning experience (Z score)	332	-1.92	1.33

Note. The variables were standardised to reach an equal scale of answers.

Source. Own research

Description of the Features of Digital Learning

Table 7 below shows the result of a paired samples T-test conducted to compare students' perceptions of digital learning, active digital learning and passive digital learning. The findings (Table 7) show that the mean of the student's active digital learning is significantly higher, (M=3.2, SD=1.277) than the mean of the passive digital learning, (M=2.381, SD=1.06); t(321)=10.144, p<.001. The effect size was large (Cohen's d = 1.462).

Table 7

Results of a paired samples T-test: differences between the students' perception of active digital learning and passive digital learning

Variable		N	M(SD)	t(294)	Skewness		kurtosis	
					Statistic	S.E	Statistic	S.E
Digital learning	Active digital learning	323	3.208(1.277)	10.144***	-.252	.136	-1.146	.271
	Passive digital learning	325	2.381(1.060)		.439	.135	-.515	.270

Note. ***p<.001.

Source. Own research.

Description of the Features of the Lecturer's Profile

The findings in Table 8 below show that the students had a significant preference for pedagogy-oriented lecturers (M=4.121, SD=.852) than for research-oriented lecturers respectively, (M=3.647, SD=.879); t (294) = -11.633, p<.0001. The effect size was large (Cohen's d = .7).

Table 8

Paired samples T-test results: differences in student expectations from the lecturer: Research-oriented lecturer, Pedagogy-oriented lecturer

Variable		N	M(SD)	t(294)	Skewness		kurtosis	
					Statistic	S.E	Statistic	S.E
Lecturer's profile	Research-oriented lecturer	313	3.647(.879)	-11.633***	-.411	.138	-.028	.275
	Pedagogy-oriented lecturer	305	4.121(.852)		-1.248	.140	1.146	.278

*Note. ***p<.001.*

Source. Own research.

Pearson Correlations Between Variables: Active Digital Learning, Passive Digital Learning, Lecturer Profile, Reading Habits, And Digital Learning Experience

The findings in Table 9 show that active digital learning is positively and significantly associated with all the variables: the two styles of the lecturer's profile, research-oriented lecturer *rp* (310)=.320 p<.01; pedagogy-oriented lecturer *rp*(302)=.205 p<.01; the learning experience *rp*(323)=.176 p<.01 and reading habits *rp*(314)=.169 p<.01. In contrast, passive digital learning is not significantly associated with the lecturer's profile: research-oriented lecturer *rp* (320) =.20 p= n.s; pedagogy-oriented lecturer *rp*(304)= -.083 p=n.s, but is positively and significantly associated with learning experience *rp*(325)=.198 p<.01 and reading habits *rp*(316)=.260 p<.01.

Table 9

Pearson correlations between the variables: active digital learning, passive digital learning, lecturer's profile, reading habits, and digital learning experience

Variable		1	2	3	4	5
1."Passive digital learning"		-				
	N					
2."Active digital learning"		.229**	-			
	N	322				
3."Pedagogy-oriented lecturer"		-.083	.205**	-		
	N	304	302			
4."Research-oriented lecturer"		.020	.320**	.673**	-	
	N	311	310	295		
5.Digital learning experience		.198**	.176**	.167**	.133*	-
	N	325	323	305	313	
6.Reading habits		.260**	.169**	0.056	.124*	-.024
	N	316	314	297	306	322

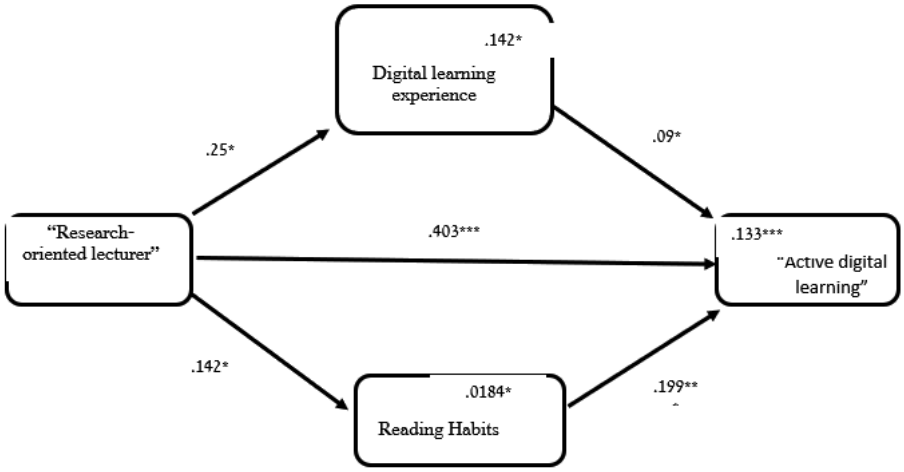
Note. **. Correlation is significant at 0.01 level (2-tailed); *. Correlation is significant at 0.05 level (2-tailed)

Source. Own research.

Examining the Mediation Hypotheses: Four Research Models

Figure 1

Direct effect of the "research-oriented lecturer" profile on the "active digital learning" pattern and indirect effect through two mediation variables: "digital learning experience" and "reading habits".



Note. Dependent variable: "active digital learning", independent variable: research-oriented lecturer; Direct effect of the "research-oriented lecturer" profile on the "active digital learning" pattern and indirect effect through two mediation variables: "digital learning experience" and "reading habits". Numbers on the lines are standardised indirect effects. The number on the middle arrow indicates the direct relationship between the independent variable and the dependent variable. Multiple squared correlations are presented to the right of the variable's name. *p<.05, **p<.01 ***p<.001.

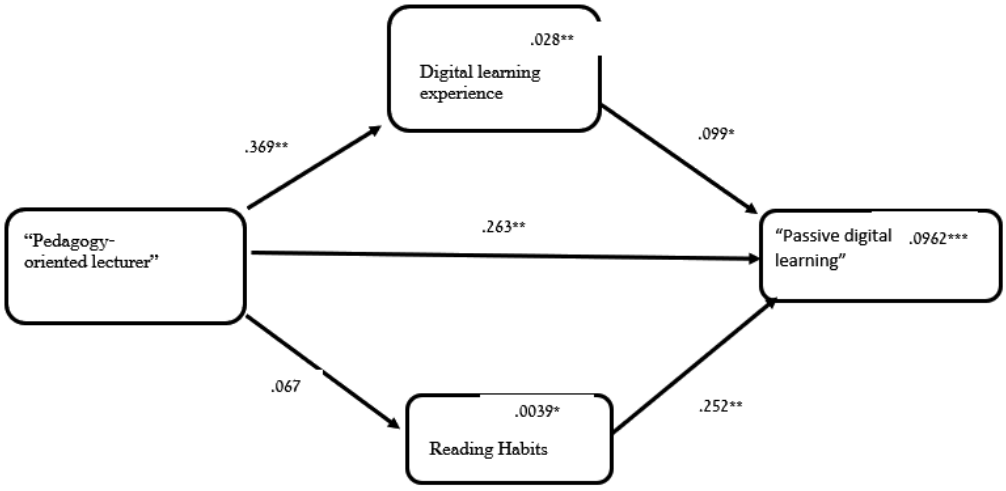
Source. Own research.

The findings in Figure 1 show that the regression coefficients representing the associations between the independent variable and the mediating variables are significant. Moreover, the regression coefficients representing the associations between each of the mediating variables and the dependent variable "active digital learning" are significant as well. The findings indicate that the association between *"research-oriented lecturer"* and *"active digital learning"* is not mediated by the variable "digital learning experience". This is shown by the findings indicating that the direct effect of the association between the "research-oriented lecturer" profile and the active digital learning pattern is significant, t=5.06, p<.0001, while the indirect association, the mediation effect, is not significant. Upper Limit of the Confidence Interval)ULCI(=.062, Lower Limit of the Confidence Interval)LLCI(= -.0028.

Namely, the effect of students' perception of the research-oriented lecturer on active digital learning is not mediated by their learning experience. In contrast, the variable of "reading habits" was found to partially mediate the association between "research-oriented lecturer" and active learning. The direct effect is significant, and the indirect effect is significant, ULCI=.069, LLCI=.0013.

Figure 2

Direct effect of the "Pedagogy-oriented lecturer" profile on the "Passive digital learning" pattern and indirect effect through two mediation variables: "digital learning experience" and "reading habits".



Note. Dependent variable: "active digital learning", independent variable: profile of the pedagogy-oriented lecturer; Numbers on the lines are standardised indirect effects. The number on the middle arrow indicates the direct relationship between the independent variable and the dependent variable. Multiple squared correlations are presented to the right of the variable's name. *p<.05, **p<.01 ***p<.00.

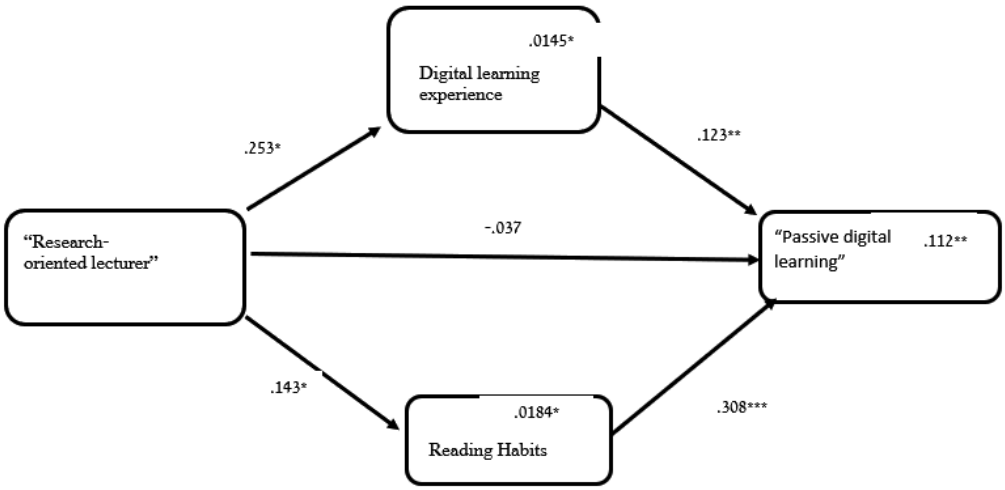
Source. Own research.

The findings in Figure 2 reveal that the direct effect of the variable *"pedagogy-oriented lecturer"* on *"active digital learning"* is significant, t=3.07, p<.01. Also, the indirect effect through the mediating variable "learning experience" is significant, ULCI=.086, LLCI=.0024. Namely, the effect of students' perception of the "*pedagogy-oriented lecturer"* on *active digital learning* is partially mediated by their digital learning experience.

Another finding is that the indirect effect of the mediating variable "reading habits" is not significant, ULCI=.057, LLCI= -.0145. This means that the variable "reading habits" does not mediate the association between "pedagogy-oriented lecturer" and active digital learning.

Figure 3

Direct effect of the "Research-oriented lecturer" profile on the "Passive digital learning" pattern and indirect effect through two mediation variables: "digital learning experience" and "reading habits".



Note. Dependent variable: *"passive digital learning"*, *independent variable: research-oriented lecturer*; Third mediation model: Direct effect of the *"research-oriented lecturer"* profile on the *"passive digital learning"* pattern and indirect effect through two mediation variables: *"digital learning experience"* and *"reading habits"*. Numbers on the lines are standardised indirect effects. The number on the middle arrow indicates the direct relationship between the independent variable and the dependent variable. Multiple squared correlations are presented to the right of the variable's name. *p<.05, **p<.01 ***p<.001

Source. Own research.

Figure 3 shows that the regression coefficients representing the associations between the independent variable "research-oriented lecturer" and the two mediating variables are significant. Moreover, the regression coefficients representing the associations between each of the mediating variables and the dependent variable *"passive digital learning"* are significant, while the coefficient of the direct association between the dependent and independent variables is not significant, t= -.551, p=.581. Also, the indirect association through the mediating variable "digital learning experience" is not significant, ULCI=.074, LLCI= -.002 .

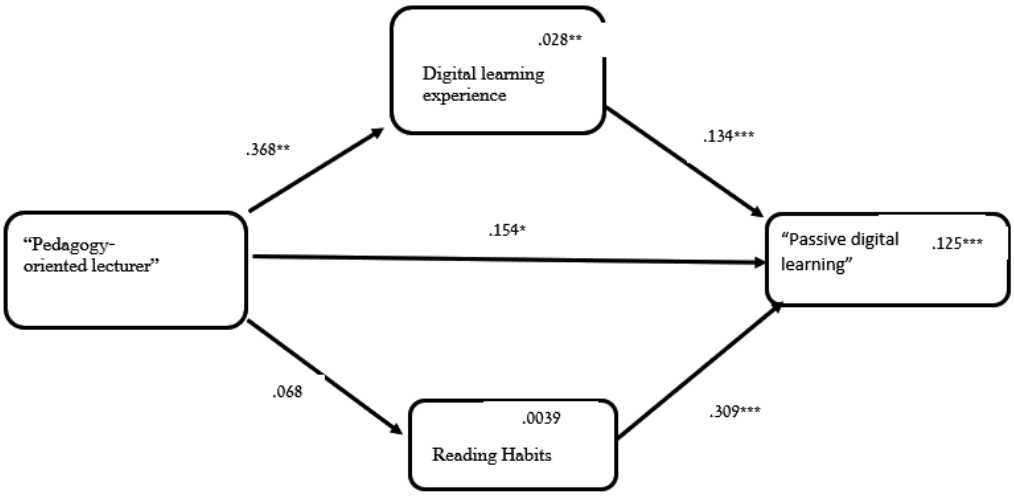
Namely, the variable of "digital learning experience" does not mediate the association between "research-oriented lecturer" and "passive digital learning". This means that the effect of students' perception of the "*research*-oriented lecturer" on *passive digital learning is not* mediated by their digital learning experience.

In addition, it appears that the indirect effect of the association between "research-oriented lecturer" and "passive digital learning" through the mediating variable "reading habits" is significant, ULCI=.093, LLCI=.0044. Therefore, the variable "reading hab-

its" fully mediates the association between the perception of the "research-oriented" lecturer and passive digital learning.

Figure 4

Direct effect of the "Pedagogy-oriented lecturer" profile on the "Passive digital learning" pattern and indirect effect through two mediation variables: "digital learning experience" and "reading habits".



Note. Dependent variable: "*passive digital learning", independent variable: pedagogy-oriented lecturer;* Numbers on the lines are standardised indirect effects. The number on the middle arrow indicates the direct relationship between the independent variable and the dependent variable. Multiple squared correlations are presented to the right of the variable's name. *p<0.05, **p<.01 ***p<.001.

Source. Own research.

The findings in Figure 4 reveal that the regression coefficients representing the associations between the independent variable "pedagogy-oriented lecturer" and the mediating variable "digital learning experience" are significant and the coefficient of the mediating variable "reading habits" is not significant. Moreover, the regression coefficients representing the associations between each of the mediating variables and the dependent variable *"passive digital learning"* are significant. The coefficient of the direct association between the dependent and independent variable is significant as well.

In addition, the findings show that the direct effect of the association between the "pedagogy-oriented lecturer profile" and the "passive digital learning pattern" is significant, t=-2.2, p=.028, while in the indirect association through the mediating variable "learning experience" the mediating effect is significant, ULCI=.102, LLCI=.0097. The meaning of this finding is that the variable "digital learning expe-

rience" partially mediates the association between "pedagogy-oriented lecturer" and *"passive digital learning"*.

In addition, the findings show that the indirect effect through the mediating variable "reading habits" is not significant, ULCI=.0647, LLCI= -.0189. This means that the association between "pedagogy-oriented lecturer" and "passive digital learning" is not mediated by the variable of "reading habits".

The study shows a significant association between *"research-oriented lecturer"* and *"active digital learning"*, which is not mediated by the "digital learning experience" of the student. In contrast, the indirect association between the variable of students' reading habits is significant and partially mediates the association between the profile of the research-oriented lecturer and the active digital learning pattern. This, in contrast to a situation where students perceive the profile of the lecturer as pedagogy oriented. In this situation the learning experience partially mediates the association between the profile of the lecturer as pedagogy-oriented and the active digital learning pattern, while students' reading habits do not mediate the association.

Namely, students' learning experience is significant for explaining the indirect association between the lecturer's profile and the active digital learning pattern when the lecturer is perceived as pedagogy-oriented, and reading habits are significant for explaining the indirect association between the lecturer's profile and the pattern of active digital learning when the lecturer is perceived as research-oriented.

The findings reveal that in the case of the effect of research-oriented lecturer on students' passive digital learning, "digital learning experience" does not mediate the association while the variable of "students' reading habits" fully mediates the association between research-oriented lecturer and passive digital learning. Namely, the effect of students' perception of the "research-oriented lecturer" on passive digital learning is fully mediated by students' reading habits.

In contrast, when the students grasp the lecturer as pedagogy-oriented, the association with passive digital learning is (partially) mediated by the variable of learning experience and is not mediated by the variable "reading habits" (insignificant mediation effect).

Discussion

The findings of this study generated two characteristics of academic teaching: active digital teaching and passive digital teaching. In addition, the findings reveal two types of lecturers in accordance with their manner of teaching as perceived by the students: research-oriented lecturers and pedagogy-oriented lecturers.

The study indicates for the first time that, according to students' perception, research-oriented lecturers do not need the learning experience as a mediator of active and passive digital learning. This type of lecturer may bring with him integral research

values that are passed to the students through his style of teaching. These values seem to be associated with both learning styles and when they exist there is no need to make an effort to facilitate learning experiences that are external to research values. These findings align with Franziska Böttcher and Felicitas Thiel (2017), who also identified the critical role of research competencies in enhancing students' learning outcomes.

Moreover, research-oriented lecturers are associated with both types of teaching: active and passive digital teaching, through the environment's effect on students' learning and through students' reading habits. Namely, the student's background in the context of reading and learning habits may contribute to promoting the various teaching methods of research-oriented lecturers. This is consistent with the findings of Elvira G. Galimova and Timur A. Halmetov (2022), who highlighted the importance of research-oriented activities in shaping effective teaching practices.

In contrast, lecturers with a pedagogic orientation need to form a learning experience among students so that their teaching style will be associated with active learning. This type of lecturer may make an effort to generate a digital experience in order to promote active learning. Previous studies, such as those by Frass et al. (2017), also emphasise the need for pedagogically oriented lecturers to adapt their teaching methods to enhance student engagement in digital environments.

Moreover, pedagogy-oriented lecturers are not associated with active digital teaching through the effect of the environment on students' learning and reading habits. Namely, the student's background regarding reading and learning habits may not facilitate the promotion of digital teaching among this type of lecturer.

These findings may assist leaders of institutions of higher education and those engaged in promoting teaching and learning in current times, when teaching is significantly based on technology. To promote active digital teaching in academia there is room to distinguish between two types of lecturers and generate relevant ways of addressing each of the types in the context of activities for promoting and improving active learning and teaching.

This distinction is very valuable for lecturers, with the aim of adapting programs for promoting teaching according to their manner of instruction. Regarding the academic institutions, the expectations should be differential and suited to the research-oriented type and the pedagogy-oriented type. In this way, systems for promoting teaching and learning can be formed that are not hierarchical but rather reflect horizontal differentiation by the manner of teaching, while maintaining academic values.

The second teaching pattern revealed is passive digital learning. For this pattern it seems that the association between research-oriented lecturers and digital learning is not mediated by students' learning experience and is fully mediated by the effect of the environment on students' reading habits. Namely, to reach an association between a research-oriented lecturer and passive learning there is need for mediation by students' learning and reading habits. In contrast, a pedagogy-oriented lecturer needs the partial mediation of students' learning experience to form an association between his style

of teaching and passive teaching, while no mediation by students' learning and reading habits is needed. These observations corroborate with the findings of Meishar-Tal and Levenberg (2021), who examined the nuanced impacts of teaching styles on students' digital learning experiences.

The findings indicate that promoting active digital teaching is associated with the profile of the lecturer. Namely, the distinction between the different types of lecturers also helps promote and improve different types of learning. This distinction emphasises the importance of the lecturer in a time of technology-supported teaching. It appears that the lecturer's unique manner of teaching is significantly associated with different learning styles of the students. Therefore, the lecturer should be placed in the centre, empowering his style of teaching through tools and workshops that match his nature.

Conclusions

This study explored the associations between students' perceptions of their lecturers' roles, their digital learning experiences, and their reading habits in relation to both active and passive digital learning patterns. The findings reveal significant connections between the student's experience of digital teaching, their perception of the lecturer's role, and their reading habits with their active digital learning pattern. Specifically, research-oriented lecturers are positively associated with active digital learning when students have strong reading habits, indicating that students' background and habits play a crucial role in active engagement with digital learning materials. Conversely, pedagogy-oriented lecturers require a positive digital learning experience among students to promote active learning.

For pedagogy-oriented lecturers, the student's digital learning experience partially influences the relationship between the student's perception of the lecturer's role and their active digital learning pattern. This suggests that enhancing the overall digital learning experience is crucial for encouraging active participation. However, for research-oriented lecturers, the digital learning experience does not significantly influence this relationship. This highlights the need for pedagogy-oriented lecturers to focus on improving digital learning experiences to foster active student engagement.

The student's reading habits also play a crucial role in the relationship between the student's perception of the research-oriented lecturer's role and their active digital learning pattern. This underscores the importance of fostering good reading habits to enhance active digital learning when the lecturer is research oriented. For pedagogy-oriented lecturers, these reading habits are less influential, indicating different engagement dynamics based on the lecturer's orientation.

In terms of passive digital learning, there is a significant association between the student's experience of digital teaching, their perception of the lecturer's role, and

their reading habits. Research-oriented lecturers are linked to passive digital learning primarily through students' reading habits, whereas pedagogy-oriented lecturers are linked through the overall digital learning experience.

The student's digital learning experience also partly shapes the relationship between the pedagogy-oriented lecturer's role and the student's passive digital learning pattern. Improving the digital learning experience can enhance passive engagement among students for pedagogy-oriented lecturers. For research-oriented lecturers, students' reading habits are more directly related to passive learning, highlighting different pathways of influence.

The findings suggest that educational institutions should consider the distinct needs and strengths of research-oriented and pedagogy-oriented lecturers when designing programs to enhance digital learning. For research-oriented lecturers, fostering strong reading habits among students can significantly enhance both active and passive digital learning. Pedagogy-oriented lecturers, on the other hand, should focus on creating positive digital learning experiences to promote student engagement.

By understanding these dynamics, institutions can better support lecturers in their professional development and improve student learning outcomes in digital environments. This nuanced approach can lead to more effective teaching strategies tailored to the specific orientations of lecturers, ultimately benefiting the overall educational experience.

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