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Teachers as Forced Digital Immigrants in Post-Covid-19 Reality: Does Hybrid Identity Facilitate Successful Integration in Fully Digital Online Teaching Environments?

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Abstract

The current study adopted a model from immigration literature in order to equate the transition of teachers to digital teaching environments to geographical immigration. The study focused on teachers' hybrid (digital and traditional) identity as digital immigrants during their "immigration" process and examined the role of innovative school climate and technological training as moderators. Data was collected from 145 secondary school teachers in Israel. The findings indicated that both teachers' digital and hybrid identity significantly predicted their objective and subjective integration process as digital immigrants, particularly when the school's innovative climate and teachers' digital training levels were low.

Key Words: Digital immigrants, objective and subjective integration, digital world, online education, hybrid identity

Public Interest Statement:

Much like certain people find themselves forced to immigrate to new countries due to external reasons beyond their control – teachers found themselves forced to become "digital immigrants" in a new fully digital online teaching environment due to the restrictions of Covid-19. The current study examined the impact secondary education teachers' hybrid identities (traditional and digital) had on their integration into this new digital reality, as well as the mediating effect of school climate and teacher training. Findings could contribute to further understanding of how to facilitate educator's transition to modern 21st-century pedagogy, characterized by increased usage and utilization of digital online environments.

1. Introduction

The current study examines teachers' transition to the relatively new digital work environment of remote online learning. The use of digital technology in the classroom is by no means an innovative concept or phenomenon, as harnessing the proven and inherent didactic and pedagogical advantages of computers (Al-Bataineh & Brooks, 2003; Tezer & Soykan, 2011), laptops (Bleyer, 2017; Gonzales & Jackson, 2020) and portable smart devices (Kim, Choi, & Lee, 2019; Salcines-Talledo, González-Fernández, & Briones, 2020) has become globally prevalent in the past decade (Kalolo, 2019; Shatri, 2020; Singh, 2021). However, as is often the case leading to the emergence, acceptance and/or utilization of new technology, circumstances arising from the global occurrences in recent years have called for expedited innovative solutions.

The outbreak of the COVID-19 pandemic and the ensuing global crisis have significantly impacted the work environment in a vast variety of fields, as the globally accepted requirement for social distancing led to a dramatic shift in the basic nature of professional practice from face-to-face interaction to digital communication (Gupta, et al., 2023). This shift, which hasn't skipped the governmental services sector, has especially impacted the educational systems throughout the world. The crisis forced students, educators and administrators alike to swiftly adapt to a new reality, which in turn accelerated the integration of remote online learning, a relatively groundbreaking digital and technological tool, into global pedagogy (Ahmed & Opoku, 2022; Chehri et al., 2021; Reich et al., 2020).

In order to adapt in practice to this new reality of distance learning and perform their professional obligations, teachers had to acquire and utilize new tools. In other words, they

had to transform their professional perceptions and pedagogical perspectives in order to better integrate themselves into the 21st century digital world (Chehri et al., 2021). While educators throughout the world have long recognized the potential advantages of digital technology in education and expressed positive attitudes towards its utilization in modern classrooms – many teachers have expressed concerns and even anxiety due to the coerced transition to remote online teaching during the Covid-2019 crisis, particularly due to low self-efficacy, the sense of being ill-prepared and feelings of discomfort due to the loss of professional autonomy and choice (Andarwulan, Fajri, & Damayanti, 2021; Chang & Fang, 2020; Marpa, 2021; Rahayu & Wirza, 2020; Tzivinikou, Charitaki, & Kagkara, 2021).

Based on theoretical models adapted from current literature on immigration research, this study proposes an equation of these teachers' experiences following the forced transition to remote online teaching to those of geographical immigrants following the forced move to a new location, society and culture. Similar to forced geographical immigration to a new country, immigration to the new digital sphere of online learning requires altered and adapted conceptualization of the didactic process, as well as the acquisition of new educational skills. In this instance of immigration, the students are defined as the natives who were born and raised in the digital reality, while the teachers are the immigrants forced to relocate due to external circumstances. In order to adequately and successfully engage the "digital natives" (the students), the "digital immigrants" (teachers) must transform themselves to become better acquainted with their new environment, its characteristics and rules of conduct (Jarrahi & Eshraghi, 2019; Kesharwani, 2020; Prensky, 2001).

Recent studies have found that immigrants' integration into the society and culture of their new country requires a dynamic hybrid identity, i.e., holding on to some fragment of identity from their country of origin while adopting a new local identity. In other words, multiple identities, rather than abandoning the "old" identity and ultimately adopting a new identity, would result in a better integration (see: Bommes, 2021; Stavissky, 2020). This is specifically true in the case of forced immigration (Dolberg & Amit, 2022; Stavissky, 2020). Additionally, certain factors have been shown to have a moderating effect on the integration of immigrants into their new societies, pointing to the process being complex and interdependent (Araújo et al., 2020; Miconi, Moscardino, Altoè, & Salcuni, 2019). The same is suggested for teachers' digital immigration.

The current study examines the integration of teachers' (the immigrants) into the new society (digital society) based on models adapted from immigration research, particularly forced

immigration. The study also focuses on the role of school innovation climate and teachers' technological training as potential moderators that may potentially facilitate the beneficial effects of hybrid identity on integration into the digital sphere.

2. Literature Review

This section discusses the current state of the art literature concerning the study's theoretical framework (teacher as digital immigrants) and research independent (hybrid identity), dependent (integration into fully digital online teaching environment) and moderating (innovative climate and teacher training) variables. Publications referenced in this section were chosen based on relevance and updated contribution.

2.1 Teachers as digital immigrants

Immigration is characterized as moving from one country to another, from one cultural code to another. Several motivations and reasons to immigrate are recognized, such as the offspring's future, a war in the origin country, economic factors, a better educational and medical system in the host country, and more (Bommes, 2021; Remennick, 2007). Usually, the immigrants actively choose to immigrate to their destination, but in some cases, immigration might be forced.

Studies have shown that the decision to immigrate is one factor that affects positive integration. For example, recent studies have found that the reason for immigration during adolescence usually being less successful, among other reasons, is that the immigrant's parents are the ones who decided to immigrate. In other words, the immigrant, according to their subjective perception of the matter, did not actively and voluntarily decide to immigrate but has been forced to do so (Amit, 2012; Dolberg & Amit, 2022; Remennick & Prashizky, 2019; Stavissky, 2020). Similarly, teachers' transition to the online reality can be seen as forced immigration due to the constraints of the Covid-19 pandemic (Andarwulan et al., 2021; Marpa, 2021).

The concept of "digital immigrants" refers to individuals who were not born and raised in the digital age and may struggle to adapt to new technology. In contrast, "digital natives" are those who had been born into the digital age and learnt to use state of the art modern technology devices and apparels during their early childhood (Prensky, 2001). However, this does not mean that the distinction between digital "native" and "immigrant" is made solely

based on their date of birth or generation. In fact, the distinction depends greatly on the individual's level of digital literacy, i.e. their degree of competence and confidence using modern technology devices and operating in and around digital environments (Reddy, Sharma, & Chaudhary, 2020). Thus, while it's safe to assume a negative correlation between one's age and their level of digital literacy (Jin, Reichert, Cagasan Jr, de La Torre, & Law, 2020; Reddy et al., 2020) – it does not constitute a generalizable fact.

For instance, most of today's teachers were born during the decade between the mid 80's and the mid 90's, a generation group that is generally considered to be "digital immigrants", while the students, born between the mid 2000's and the mid 2010's, are considered "digital natives" (Oblinger & Oblinger, 2005; Prensky, 2012). However, younger teachers born in the mid 90's and the early 2000's are still considered "digital immigrants" in a pedagogical sense, due to lack of digital teaching competence, both in the technological and pedagogical sense. An individual born in the 21st century who hasn't gained the necessary level of proficiency using ICTs (Information and Communication Technologies) cannot be defined as a "digital native". Similarly, a relatively young teacher born in the early 2000's who hasn't acquired and utilized 21st century teaching skills and/or hasn't gained experience using modern ICTs during their academic studies and in practice training would still be considered a digital "immigrant"(Ratheeswari, 2018).

In conclusion, the coerced transition to remote online teaching due to social distancing during the Covid-19 crisis can be seen as a form of physical immigration to a new country, society and culture, similar to forced geographical immigration due to external circumstances. As such, it is expected that certain "digital immigrants" would successfully transition and integrate into the new online teaching environment, while others would find the process to be more challenging and taxing (Watkins, 2009).

This is also true in the particular case of secondary education teachers. As recently reported by Cheung (2023), the coerced transition to using the Zoom application to teach Junior High and High School students has posed significant and substantial challenged to teachers. These teachers found themselves forced to quickly adapt to the new teaching environment, its innovative features and its shortcomings, as they succeeded in teaching their lessons but at the price of fewer and less meaningful teacher-student interactions. Research findings also showed that the teachers' attitudes towards online instruction and their own perceived ability to utilize the digital environment successfully greatly impacted their overall degree of success and their students' achievements.

This study reaffirms the results of a previous study, which focused specifically on secondary education science and mathematics teachers (Marpa, 2021). These results showed the teachers' attitudes towards instructing their students using a fully digital online teaching environment were the most significant and influential predictor of their students attitudes and disposition towards the online class.

2.2 Hybrid identity as a facilitator

This study argues that hybrid identity (digital and traditional) may assist the teacher in moderating the difficulties integral to the process of digital immigration. Hybrid identity means the individual or group hold two dynamic identities, which allows teachers to have the ability to maintain their traditional teacher identity while gaining a new identity as an online teacher. For instance, Hinman et al. (2021) discussed the advantages of teachers' hybrid identities as both instructors and educators, allowing them to better perform the tasks and obligations associated with each role.

In the past, it was argued that a successful immigration process should include the complete abandonment of the old identity and adoption of a new identity (for review, see Bommes, 2005, 2021). However, recent findings have indicated that maintaining two interacting dynamic identities is an essential component in the transformation process in traditional geographical immigration, as it is related to better integration in the new community (Amit, 2012; Dolberg & Amit, 2022; Remennick, 2007; Stavissky, 2020).

The traditional component of the hybrid identity is expressed by the teacher viewing and perceiving themselves as responsible for transferring didactic knowledge in accordance with the school's curriculum, maintaining discipline during classes, being responsible for correctly and accurately instructing students and being generally responsible for all students' activities during the lesson. Further, the traditional teacher is the center of knowledge and invests time in explaining the material while the students are taking notes and asking questions (Mascolo, 2009).

There are advantages to having some components or ingredients of the traditional teacher identity in online reality. The teacher should be, for example, the facilitator of class discussion, even if he or she is losing primacy to the internet as the leading resource of knowledge. The teacher in the digital world should keep class discipline and curriculum (Clifton & Jordan, 2019). Thus, the current research posits that the teacher should intelligently navigate between the offline and online identities for the transformation would be successful – just as in

traditional immigration, a hybrid identity seems to be the desired one. The current study assumes that as hybrid identity is crucial for geographical immigration, it would have similar beneficial effects on digital immigration. In other words, having both a traditional teacher identity and a digital identity should facilitate the teacher's integration into a digital world.

Some empirical evidence supports this claim. For example, compared to teachers with traditional identity, teachers with hybrid identity were more likely to be creative in their use of technology and to use it in ways that enhance their teaching practices rather than simply using it as a replacement for traditional methods (Clifton & Jordan, 2019; Kwon et al., 2021). Further, it was found that, compared to traditional teachers, teachers with a hybrid identity were more likely to use technology to create new learning opportunities for their students and were more likely to use technology in ways that supported student-centered learning (Engeness, 2020; Kwon et al., 2021).

The positive relationship between teachers' hybrid identity and their integration into the digital world can also be seen in terms of their use of digital tools and resources. Teachers with a hybrid identity are more likely to use a broader range of digital tools and resources in their teaching and to use them to support their student's learning goals and objectives. Further, one study (Lin & Chen, 2019) found that teachers with a hybrid identity were more likely to use digital tools such as interactive whiteboards, educational games, and e-books in their teaching and were more likely to use them in ways that supported student engagement and active learning.

A study by Ertmer et al. (2012) found that teachers with high digital identities were more willing to use technology in their instruction and experiment with new digital tools and resources. Furthermore, teachers who are high in both traditional and digital identities are more likely to use technology in a meaningful and effective way (Warschauer & Matuchniak, 2010).

Moreover, the concept of a "hybrid identity" for teachers can provide insight into the factors contributing to the successful integration of technology in education and their integration into the digital world. Teachers who have a balance of traditional and digital identities are expected to be successful in the digital world, both in terms of their use of technology and in terms of their attitudes and perceptions towards technology (Clifton & Jordan, 2019).

Integration is a process in which immigrants embrace values and norms acceptable in the local culture (Bommes, 2005). Immigrants' integration into the new culture is essential to

transforming their identity into a hybrid one that includes both past and current identities (Stavissky, 2020). The following chapter focuses on the effects of a hybrid identity on teachers' objective and subjective integration into the digital sphere.

2.3 Parameters of integration

Objective parameters of integration are one facet of integration. Objective parameters include, for example, financial success, having local friends, and mastering the local language. Objective parameters of the teachers' integration into the digital reality could be: being a literate digital teacher and using online teaching methods during the teaching (Stavissky, 2020).

However, subjective measures could also measure integration (Stavissky, 2020). Subjective integration is characterized by a sense of belonging to the new society and a subjective perception of integration, usually accompanied by feelings of well-being (Stavissky, 2020). A subjective integration includes a "feeling of being at home" and feeling comfortable in the new society (Stavissky, 2020). This should also apply to teachers' digital immigration. Subjective digital immigration should include a feeling of belonging to the digital society. The current study expects that these measures of objective and subjective integration would be predicted by hybrid identity, as found in the previous research on forced geographical immigration (Remennick & Prashizky, 2019; Stavissky, 2020).

Moreover, as the process of geographical immigration is considered similar to the process of digital immigration, it is also expected a similar association between teachers' integration in the online world and their successful integration in online teaching. Similar to the integration of immigrants into the new society, it depends on the characteristics of the host society and the social mirror the immigrants are reflected upon (Remennick, 2003; Remennick & Prashizky, 2019; Stavissky, 2020). Individual integration into the digital world is largely influenced by social and institutional characteristics of the context in which teachers work.

This study focuses on key factors that may facilitate or hinder the development of teachers' hybrid identity: Innovative school climate and digital training.

2.4 Innovative climate

An "innovative climate" refers to the level of support and encouragement for the integration of technology and innovation within a school or educational institution (Moolenaar et al., 2010). A school with a strong innovative climate will likely provide teachers with the resources, training, and support they need to integrate technology effectively into their

teaching practices (Katyeudo & de Souza, 2022). This learning environment encourages creativity, critical thinking, and a sense of community among students and staff (Moolenaar et al., 2014). Further, this type of climate is characterized by strong leadership, clear expectations, effective communication, and opportunities for student engagement and participation (Moolenaar et al., 2010). It also often includes incorporating technology, flexible teaching methods, and focusing on student well-being and mental health. Additionally, an innovative school climate can also refer to sustainable and environmentally friendly practices being implemented in the school (Chou et al., 2019). Thus, an innovative school climate should play a role in the success or failure of the transition into digital reality.

Research has shown that schools with a strong innovative climate are more likely to have teachers who are comfortable and confident in their use of technology and are more likely to use technology in ways that support student learning. For example, a study by (Lin & Chen, 2019) found that teachers in schools with a solid innovative climate were more likely to report that they had a good understanding of how to use digital tools in their teaching and were also more likely to have a positive attitude towards the integration of technology in education. Similarly, it was found that teachers in schools with a positive technology-rich learning environment were more likely to use technology in ways that supported student-centered learning and collaboration (Becuwe et al., 2017; Dreer, 2022). Thus, the findings of PISA (2018), from OECD's reports, show that schools with a climate that urges innovation, openness toward innovative ways of teaching, and innovative perceptions of the principal were the indicators of the readiness of the school system for the transition to online teaching and the preparedness of teachers for this transition (Schleicher, 2019).

2.5 Pedagogical training in online teaching and permanent technical support

Training in online teaching, in the form of both technical and pedagogical, is one of the focuses of the current investigation. It seems that when the teacher is not digital-oriented or trained, he or she might have difficulties in integration. Thus, training in online teaching is essential for teachers who are not digital-oriented because, in order to teach digital natives, teachers must possess technical and pedagogical skills (OECD, 2022). Further, teachers must have a digital learning experience before being expected to be digital teachers; otherwise, they simply map traditional practices onto the new medium (Gold, 2001). Accordingly, Nelson and Bohanon (2019) posit that technology training is an essential ingredient to technology use by teachers and, as a result, will serve as a factor for integration.

Moreover, according to the findings of PISA (2018), training is necessary to require technical and pedagogical skills to integrate digital devices into policies and instructions and the teachers into the digital world (Schleicher, 2019). Thus, I claim that without proper pedagogical training and online experience, teachers will continue to replicate their best existing practices onto the online medium and will not integrate.

2.6 Summary

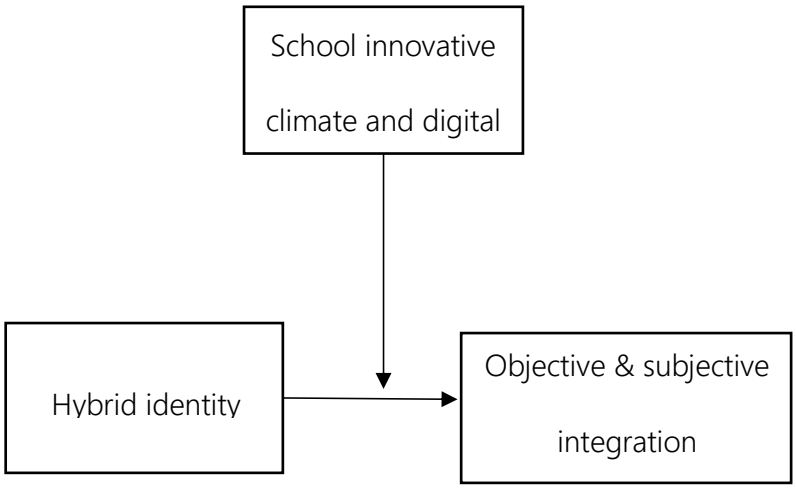
Covid-19 was declared a world emergency that forced almost all countries worldwide to adopt a sequence of emergency management mechanisms (Gordon et al., 2021; Guo et al., 2020; Horesh et al., 2021; Tandon, 2020). Many countries took the strategy of lockdowns, including closing schools, which were extensive in Israel. This accelerated the transformation of the education system into a digital reality (Masry-Herzallah & Stavissky, 2021a, 2021b). The transformation of the whole world to digital reality changes the education system entirely, and we have the opportunity to observe these changes (Ariawan & Malang, 2020). Moreover, the school educational system's future depends on teachers' success with modern digital competencies (Blau & Shamir-Inbal, 2017).

Holding a hybrid dynamic identity of both traditional and digital teachers should facilitate immigration to the digital sphere – similarly to physical geographical immigration. This should result in better subjective and objective integration, which may improve the teacher's transition into online teaching. A school culture that encourages innovation and sufficient digital training is expected to facilitate the relationships.

2.7 Hypotheses

Hypothesis 1: Teachers' level of hybrid identity will be positively related to their objective and subjective integration in fully digital online teaching environments.

Hypothesis 2: The positive relationship between teachers' hybrid identity and their objective and subjective integration in online teaching environments will be moderated by the school's innovative climate and training – which are essential for digital integration.



3. Method

3.1 Participants

145 secondary school teachers volunteered to participate in the study. Of them, 42% are female, 32% are male, and 26% did not mention their gender. The teacher's mean age was 43.53 (*SD* = 11.68, min = 23, max = 77). All teachers gave their consent to participate in the study after we promised to keep their anonymity and explain the general purpose of the study. Recruiting a sufficiently large and heterogeneous sample of participants proved to be the key challenge for the study, as this stage took considerably more time than initially expected.

3.2 Tools

A research questionnaire composed of 46 items divided into four sections (excluding basic socio-demographic questions used for statistical segmentation). A self-reported questionnaire is one of the most popular and commonly use research tools in quantitative empirical studies, as it allows the empirical examination of correlations between dependent, independent and moderating variables, as well as the production of factual, objective and mathematically accurate data and analyses. Considering the stated goals of the current study to examine the correlation between teacher's level of hybrid (traditional and digital) identity and their integration into a fully digital online teaching environment, as well as the moderating effects of school digital climate and teacher training, a research questionnaire is the most suitable tool for the current study.

3.2.1 Independent variables

Variables were measured using 21 items adapted from Stavissky (2020).

- Section 1 composed of 6 items measured participants' *traditional teacher identity* (α = .77), sample item: *"I see myself as a teacher whose primary role is to teach, compose exams, examine the students, and evaluate them at the end of the process"*.

- Section 2 composed of 12 items measured participants' *digital teacher identity* (α = .86), sample item: *"I see myself as a teacher that learns, innovates, and creates novelty in her work"*. For all items, teachers marked their agreement on a Likert scale ranging from 1 ("*completely disagree*") to 5 ("*completely agree*").

Teachers that received scores below the traditional identity median score (2.83) and below the digital identity median score (3.91) were categorized as low in both identities (*n* = 40); Teachers who received scores below the traditional identity median score and above the digital identity median score were categorized as low in low in traditional identity and high in digital identity (*n* = 37); Teachers who received scores above the traditional identity median score and below the digital identity median score were categorized as high in traditional identity and low in digital identity (*n* = 39); Teachers that received scores above the traditional identity median score and above the digital identity median score were categorized as teachers with a hybrid identity (*n* = 29).

- Section 3 composed of three items directly measured *Hybrid identity* (α = .67). Sample item: *"I am a teacher that can teach both traditionally when needed and innovatively when needed"*. Teachers marked their degree of agreement on a Likert scale ranging from 1 ("*completely disagree*") to 5 ("*completely agree*").

3.2.2 Dependent variables

The dependent variables *objective and subjective integration into the digital sphere* were measured by section 4 adapted from Stavissky (2020):

- Objective integration was measured using 11 items (α = .82). Sample item: *"I am integrating diverse digital tools in my teaching such as Kahoot"*.

- Subjective integration was measured using seven items (α = .85). Sample item: *"I am feeling comfortable when using digital tools in my teaching"*. Again, teachers marked their degree of agreement on a Likert scale ranging from 1 ("*completely disagree*") to 5 ("*completely agree*").

3.2.3 Moderating variables

Section 4 measured moderating variables using seven items based on the research tool in Ejvall (1996).

- *The school's innovative climate* was measured using four items based on Ekvall's (1996) tool. Teachers were asked to what extent the school where they teach was "innovative", "takes advantage of opportunities", "takes risks," and "Tries new things" (α = 81).

- *Digital training* which was measured by three items based on Ekvall (1996) (α = .77). Sample item: *"I have received proper and satisfied training on how to teach digitally"*. Teachers marked their agreement on a Likert scale ranging from 1 ("*completely disagree*") to 5 ("*completely agree*").

3.3 Procedure

Teachers received a link to a Qualtrics survey through social media (e.g., Facebook, WhatsApp, etc.) and emails. Responses were collected during October and November 2022. Data were analyzed with SPSS version 28.

4. Results

Table 1 presents the means and standard deviations of the study's variables, as well as Pearson correlations between the variables.

Table 1. Descriptive statistics and Pearson correlations between the study's variables

Variable	Mean	SD	1	2	3	4	5	6	7
1. Traditional identity	2.90	0.84	-	-	-	-	-	-	-
2. Digital Identity	3.85	0.58	.17*	-	-	-	-	-	-
3. Hybrid Identity	3.67	0.75	.07	.53**	-	-	-	-	-
4. Innovative Climate	3.34	0.83	.32**	.21*	.23**	-	-	-	-
5. Digital Training	3.34	0.86	.31**	.32**	.24**	.55**	-	-	-
6. Objective integration	3.73	0.67	.06	.55**	.33**	.17*	.30**	-	-
7. Subjective integration	3.82	0.70	.01	.47**	.36**	.11	.31**	.57**	-

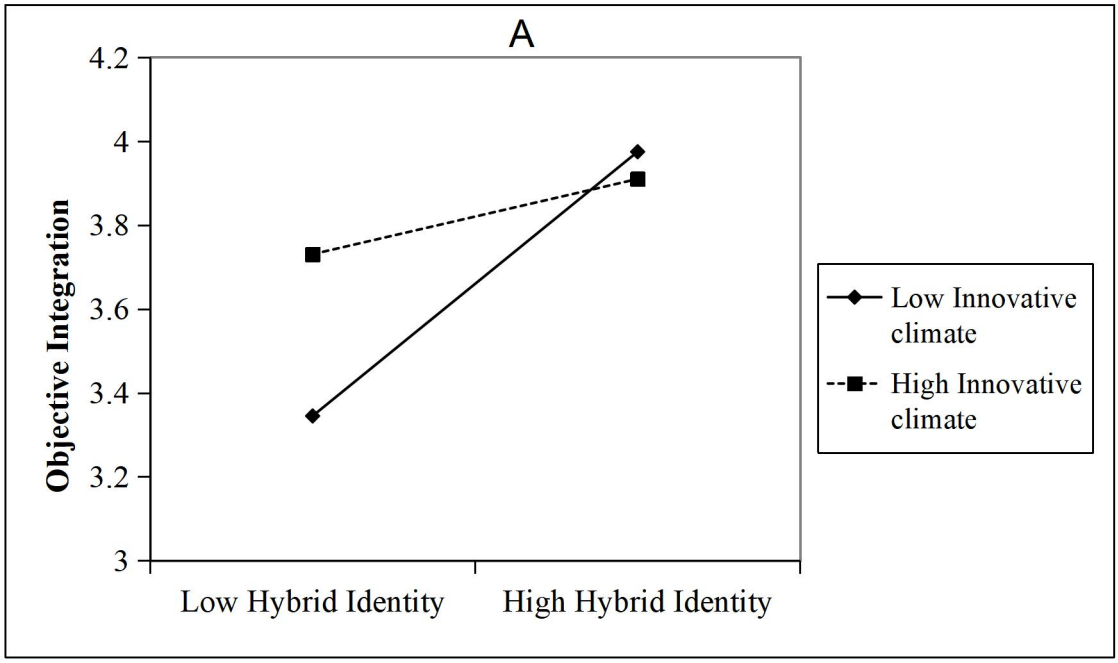
Note: $N = 145$; * = $p < .05$, ** = $p < .01$.

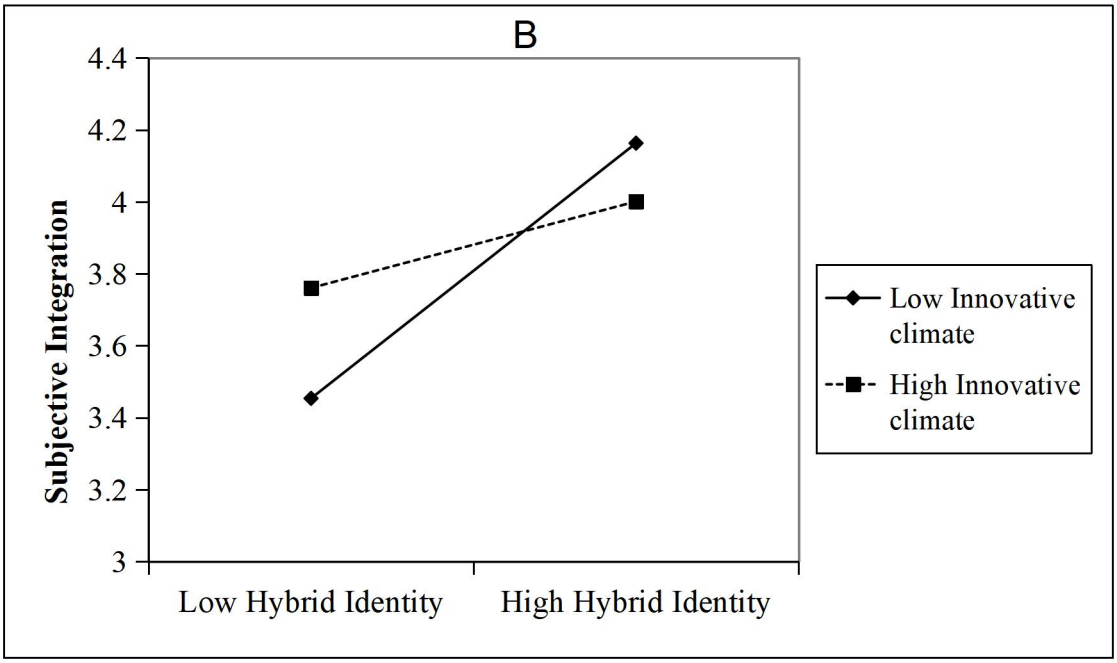
As can be seen in Table 1, both objective and subjective integration are positively correlated with hybrid identity. Objective and subjective integration of teachers into the digital sphere is

also positively correlated with digital identity, but not with traditional identity. Therefore, it is shown that both teachers' digital and hybrid (traditional and digital) identities positively affect their level of integration into a fully digital online teaching environment. Considering Hypothesis 1 stated that only hybrid identity would be found to be in positive correlation with said integration – it can be said that the hypothesis has been partially conformed. Further, it's noteworthy to state that digital training is positively correlated with both types of integration, and innovative climate is positively correlated with objective integration.

Next, the moderating effect of innovative climate and digital training on the relationships between hybrid identity and integration was analyzed in order to test the second hypothesis. For this. Hayes Process macro for SPSS was used to test moderations (Hayes, 2018). An interaction effect between hybrid identity and innovative school climate was found on both objective (B = -0.18, p = .04) and subjective (B = -0.19, p = .04) integration. Simple slopes analyses revealed that the correlations between hybrid identity and integration are significant only for those teachers who work in schools with a low level of innovative climate (see Figures 1a and 1b).

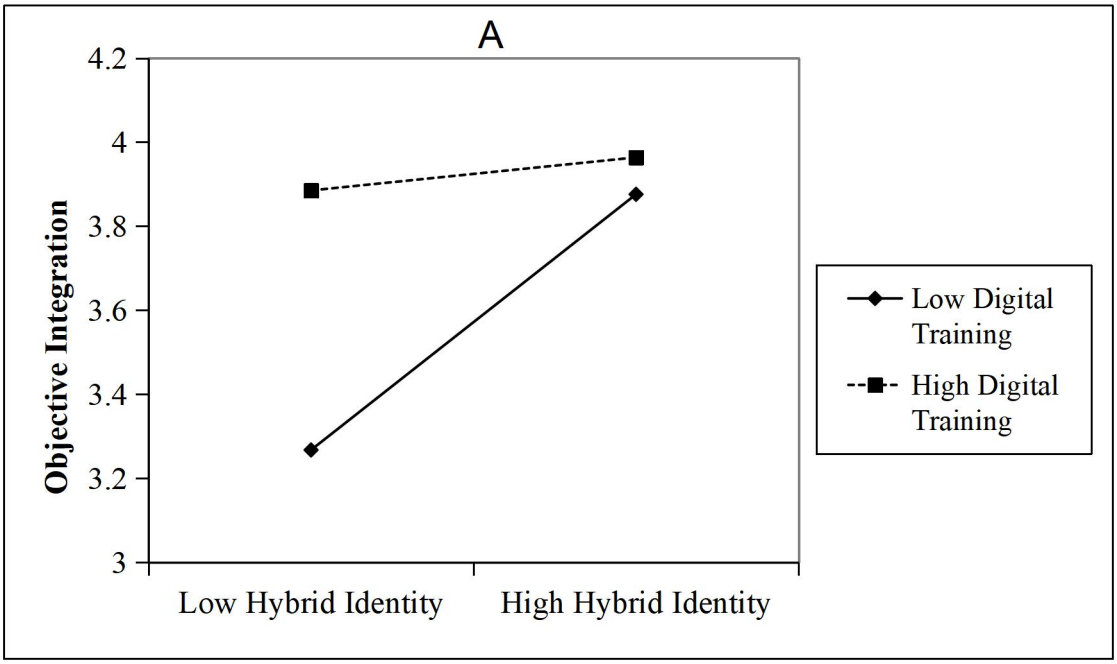
Figure 1. Interaction between hybrid identity and innovative climate on objective (Panel A) and subjective (Panel B) integration.

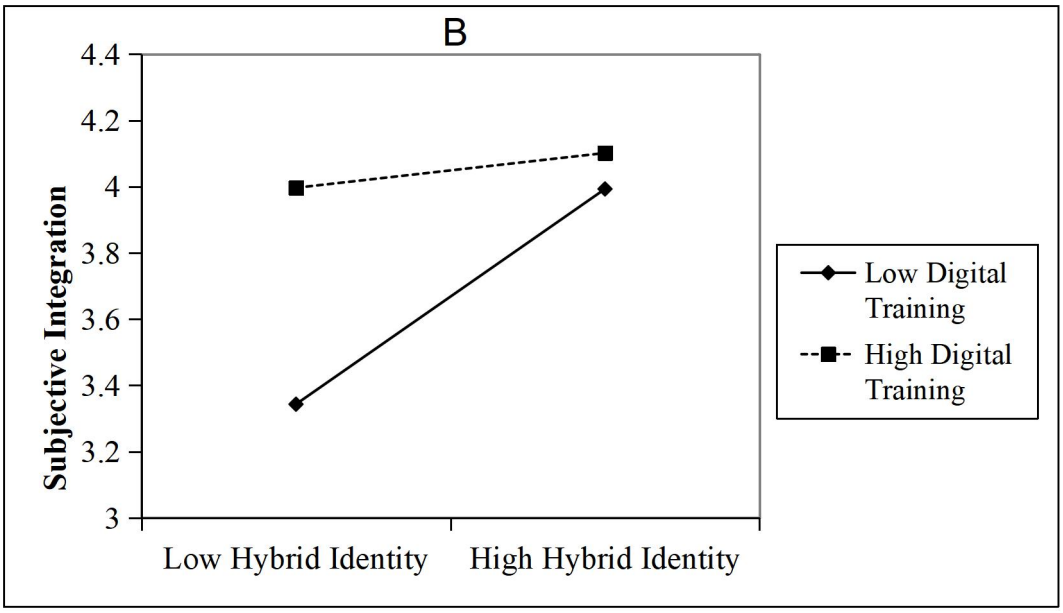




Similarly, digital training moderated relationships between hybrid identity and objective (B = -0.21, $p < .01$) and subjective (B = -0.21, $p < .01$) integration. Simple slopes analyses revealed that the effect is significant only for teachers who received minimal digital training (see Figures 2a and 2b). Based on these findings, it can be said that certain degrees of both school climate and teacher training indeed moderate the correlation between teachers' hybrid identity and their integration into fully digital online teaching environment, thus fully confirming the second research hypothesis.

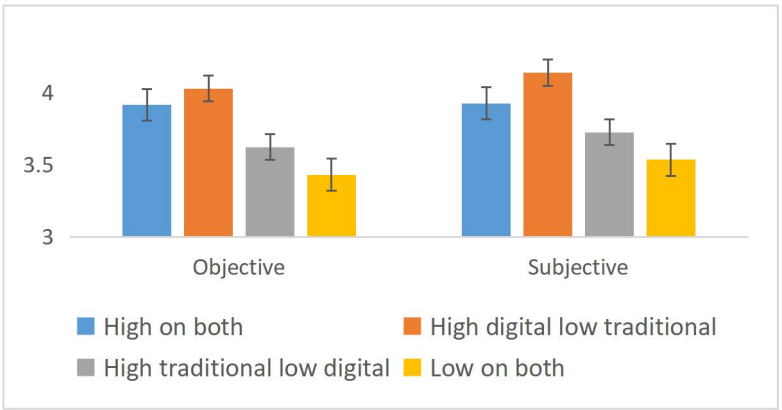
Figure 2. Interaction between Hybrid Identity and Digital Training on Objective (Panel A) and Subjective (Panel B) Integration.





Finally, the differences in integration between the four identity groups (high\low traditional identity X high\low digital identity) were examined. The test revealed differences between the four groups concerning both objective, $F(3,137) = 6.68$, $p < .01$, and subjective, $F(3,135) = 5.43$, $p < .01$, integration. Scheffe's post hoc analyses revealed that the low traditional and low digital identity teachers report significantly lower objective integration compared to the high digital identity teachers and the high on both traditional and digital identity teachers. Further, the high digital identity and high on both traditional and digital identity teachers reported higher objective integration compared to the high traditional and low digital identity teachers and low in both identities teachers (see Figure 3). A similar pattern was found regarding subjective integration as teachers with both traditional and digital identities and teachers with low traditional and high digital identity report higher integration than teachers with low digital and high traditional identities and low both identities (see Figure 3).

Figure 3. Objective and Subjective Integration of Teachers with High and Low Traditional and Digital Identity



5. Discussion

COVID-19 has accelerated digitization processes in teaching, and teachers must rapidly integrate into the digital world from a subjective and objective perspective. If not, they will find themselves trailing behind their students.

The current study adopts theories and models from research in the field of immigration and assumes that teachers' integration into the digital world resembles the same process of immigrants' integration. Beyond that, it is forced immigration that COVID-19 caused the teachers. From this point of view, the teacher's immigration into the digital world is like another forced immigration - the immigration of 1.5 generation whose parents forced them to leave their motherland and immigrate to another country. Therefore, the current study explicitly adopts previous models of forced migration (Dolberg & Amit, 2022; Remennick & Prashizky, 2019; Stavissky, 2020; Witteborn, 2022).

While previous studies have shown that teachers with a hybrid identity are more likely to be confident in their use of technology and feel more positive about integrating technology into their teaching (Ertmer et al., 2012; Warschauer & Matuchniak, 2010), the findings of the current study have shown that both digital identity and hybrid identity (traditional and digital) predict teachers' integration into the digital world. Thus, it seems that while a hybrid identity is crucial for the integration process of forced geographical immigrants – either a hybrid or an innovative (digital) identity is sufficient for the improved transitioning of teachers to remote online teaching in a fully digital environment.

The study focused on hybrid identity and found that its impact is moderated by two context variables: innovative climate and digital training. It was found that hybrid identity is particularly needed when there is a low innovative climate at the school and teachers receive minimal digital training. It may be explained that when the innovative climate is low, and teachers do not receive sufficient digital training, it can be difficult for them to effectively integrate technology into their teaching and educational practices and be integrated by themselves into the digital world (Cai & Tang, 2021; Glazer et al., 2005; Selvaraja & Pihie, 2015). In this scenario, a hybrid identity may be critical because it allows teachers to balance their traditional teaching methods with the use of technology to enhance student learning and engagement. This can help to bridge the gap between the lack of digital training and the need to integrate technology into the classroom, allowing teachers to continue to provide high-quality instruction despite the challenges they may be facing.

Technology integration in education has been a growing trend recently, with many schools and educational institutions moving towards incorporating digital tools and resources into their curriculum and teaching practices. However, this integration's success can depend on various factors, including the level of comfort and expertise teachers have with technology (Masry-Herzallah & Stavissky, 2021b; Olimov & Mamurova, 2022). This research further found that teachers with a hybrid identity (a balanced combination of digital and traditional identities), compared to teachers with low digital identity, will be more likely to successfully integrate themselves into the digital world in terms of actual use of technology and in terms of their perceptions and attitudes towards technology.

In summary, "hybrid identity" suggests that teachers who have a balance of traditional and digital identities or can seamlessly integrate technology into their teaching practices while still maintaining their traditional teaching methods are more likely to succeed in the digital world – even if innovative climate and digital training are lacking. In addition, this research found that objective and subjective integration of teachers into the digital sphere is also positively correlated with digital identity but not with traditional identity. This finding suggests that while having a balance of traditional and digital identities, or a hybrid identity, may be positively related to teachers' objective and subjective integration into the digital world, the effect of the digital aspect is the strongest. In other words, it suggests that a teacher's level of integration into the digital world is more closely linked to their level of comfort and expertise with digital tools and technology rather than their adherence to traditional teaching methods.

It is worth noting that while having a solid digital identity is positively correlated with teachers' integration into the digital world, it does not necessarily mean that traditional teaching methods have no value. Instead, it suggests that a teacher's ability to integrate technology into their teaching effectively depends on their level of comfort and expertise with digital tools rather than their adherence to traditional methods.

The current research findings also suggest that low traditional and low digital identity teachers may have difficulty integrating technology into their teaching and may not feel comfortable using digital tools. This can result in a low objective and subjective integration with the digital world. This finding corresponds with previous studies that have shown that teachers with low digital identities use technology in a limited and superficial way (Warschauer & Matuchniak, 2010). Furthermore, teachers who lack a solid digital identity tend to have less confidence in using technology and may avoid using it altogether (Ertmer et al., 2012). It may be helpful to provide these teachers with training and resources to help them increase their

confidence and competence with technology. It may be helpful to provide these teachers with additional support and resources to help them increase their use of technology in their teaching.

5.1 Limitations

The present study is correlative and, as such, cannot assume causality. Thus, we do not know if hybrid identity impacts integration, integration impacts hybrid identity, or both hybrid identity and integration simultaneously impact each other. A longitudinal study may help answer the question of the direction of relationships. Additionally, because the entire data set is based on self-reports, it is impossible to know if teachers reporting high integration in the digital sphere indeed integrate better. Moreover, categorizing teachers as 'low' or 'high on the relative identities on the basis of median scores is somewhat arbitrary and sample dependent. Future research should examine reports from different sources; for example, future research could also survey students and principals. Further, future research may also examine objective data such as students' grades.

6. Conclusion

The theoretical framework of the current study was the equation of modern teachers, dealing with the requirement to adapt with a largely shifting work environment following the Covid-19 crisis, to forced immigrants made to relocate due to external reasons. The research goal was to examine the effect of teachers' hybrid (traditional and digital) identity on their level of integration in their new, fully digital online teaching environment, as well as the moderating roles of school climate and teacher training. Findings indeed showed that teacher hybrid identity was important for the transition to online teaching, but not more than digital identity. Therefore, it was made apparent that the traditional teacher identity is slowly losing its important, and soon enough teachers would be required to focus mostly on their digital identity, as well as their hybrid identity composed of certain basic qualities and components of the traditional teaching methods and pedagogy. Furthermore, findings showed a school climate that supports and fosters the utilization of digital teaching tools and transition to digital online teaching environments, as well as sufficient focus on digital online teaching during teacher training, could in fact moderate less dominant digital and hybrid teacher identities. Therefore, it is recommended that both teacher training facilities and schools strive to encourage further digitation of the teaching process in order to meet the ever evolving

requirements of 21st century education.

7. References

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