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Editorial Board *phone/fax 00387 33 640 407*  
*ttem\_bih@yahoo.com, http://www.ttem.ba*

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# Mitrovica Speaks: A Postmodern Urban Tale

Blerta Breznica<sup>1</sup>, Marigona Rexha<sup>1</sup>, Florina Jerliu<sup>2</sup>

<sup>1</sup> Public Space Equity, Mitrovica, Republic of Kosovo,

<sup>2</sup> Faculty of Architecture, University of Prishtina, Republic of Kosovo.

## Abstract

Predominant studies on Mitrovica, a city in Kosovo, have traditionally employed linear, historical urban narratives that adhere to a universal truth, often diverging from the complex realities perceived by its inhabitants. As this method of narration oftentimes overlooks certain dimensions of urban storytelling, this paper embraces non-linear narration, advocating for a postmodern methodology in framing the urban tale of Mitrovica.

Drawing from the longstanding analogy between architecture and language, the proposed narrative framework envisions the city as a communicative entity, similar to the way words are assembled into sentences within a linguistic structure. It explores how urban components combine to form a cohesive urban identity, thus challenging the conventional notion of urban expression.

The paper analyzes visual and textual materials, coupled with postmodern urban tales, to expand on how Mitrovica articulates its narrative, its syntactic composition, and the auditory perception of its inhabitants. This exploration ultimately sheds light to the complex interplay between urban identity, postmodern narrative techniques, and the communicative potential inherent in cities like Mitrovica, offering new insights into the ways urban spaces are interpreted and engaged with.

**Keywords:** *Mitrovica; Postmodern Narration; Urban Identity; Reticence; Paralepsis.*

## 1. Introduction

Mitrovica epitomizes a city historically rooted in civic engagement, economic prosperity, cultural dynamism, and urban development. To unravel Mitrovica's complex identity over time, it is essential to construct a multidimensional narrative using symbols and fragments that have defined the city at various points. Contemporary discourse highlights a stark contrast between the current perception of the city and nostalgic memories of its past.

As cities evolve, they risk losing the distinctive characteristics that form their unique cultural signatures and intrinsic essence.

The challenge extends beyond Mitrovica's urban evolution to include the potential erosion of its identity. Components that once defined Mitrovica, such as: diverse cultural life, industrial affluence, economic vibrancy, and dynamic intercultural interactions, are at risk of fading away, due to its politically tailored urban profile [1].

These components form the fragments through which Mitrovica communicates its narrative. It is a linear historical narrative consisting of the very fragments, and the voids in between, thus demanding closer examination and revealing of those parts appearing as voids. This paper explores Mitrovica as an analogue to language, an entity that communicates through its elements and its prolonged silence. The city's taciturn nature offers a unique case study for examining people's reactions to its urban language, and the dual interpretations of its silence: *reticence* and *paralepsis* [2].

Mitrovica has persistently spoken through its fragments, many now silent or extinguished. Uncovering these missing pieces that render Mitrovica's narrative incomplete provides insight into how this narrative is perceived and what remains unspoken. This analysis enhances the understanding of Mitrovica's urban identity and illuminates the broader implications of urban silence and communication within architectural theory.

The exploration of these fragments and the silence they embody, emerges from a methodology liberated from the confines of chronological time and theological interpretations of history - the Postmodern Methodology. This approach suggests that historical events and interpretations are not necessarily interconnected but can be deconstructed into independent fragments that form new entities. This fragmented, subjective, and often contradictory nature, underscores the multidimensionality of perceptions, allowing for diverse



interpretations. Hence, the postmodern approach deconstructs the binary nature of traditional narratives:

- Linearity is supplanted by non-linearity and fragmentation (Stewart, 2022);
- Objectivity and the notion of uncontested truth give way to subjectivity and multiple possible truths (Derrida, 1980);
- Certainty and coherence are replaced by uncertainty, contingency, and contested knowledge (Stewart, 2022, pp. 110-112);
- The chronological totality of the modern approach is complemented by the autonomous fragments of the postmodern perspective (Lyotard, 1984);
- Instead of a single linear narrative, there are multiple contextual narratives;
- The seriousness of modern expression is challenged by the ironic and humorous treatment of facts in postmodernism (Literary Theory and Criticism, n.d.);
- Comprehensive narration is substituted with localized narration, focusing on specific contexts, experiences, and dimensions;
- General truths diverge towards the postmodern appreciation of contextual, localized, regional, and collective sensitivities (GetSetNotes, n.d.).

We consider the historical knowledge as a dynamic variable, informed by experiences and collective memory, and we find fundamental the understanding of the city as a language, with its words being the fragments that constitute its identity. This paradigm promotes a deeper comprehension of how architecture, as a communicative medium, conveys the collective memory, identity, and urban and cultural evolution of a city. Consequently, the paper addresses two main axes:

- The fragmented voices of Mitrovica (through notions of Time, Space, Event, and Architecture).
- The silenced fragments of the city (those extinguished through time and space).

Mitrovica, the city that struggles with the unrelenting passage of time, now faces an identity crisis. The crisis worsens when certain aspects of the city are neglected in its documentation, construc-

tion, planning, and interpretation. Drawing from here, the paper aims to identify the fragments that constitute Mitrovica's linguistic pattern, to rely on and use these components to uncover the city's silent meaning, and to engage empathetically with the city by closely listening to the significance behind its muted expressions. Consequently, we embark on a historical journey through Mitrovica's time and space, offering a thus far unattended postmodern urban tale.

## 2. The Urban Tale of Mitrovica

This is the tale of Mitrovica, and how the city of industry, economy, and culture was created:

»Ages ago, three rivers flowing freely decided to form a pact. The Ibër, Sitnica, and Lushta Rivers, united their forces with Rogozna and Kopaonik mountains, to build a city, anchored by nailed bridges, where wise and hardworking people would walk and create a life. They created the heart of the city at the confluence of the Ibër and Lushta Rivers, where public architecture raised, expanding into thriving neighborhoods in its surrounding area. They discovered the nearby mines and unearthed giant wealth of what would be known as Trepça, spreading prosperity across the Western Balkans.

It was foretold that the city would become so rich and renowned that no conqueror could resist it. And so it happened; conquerors would come and go, but citizens would always remain resolute, never allowing their lands to be ravaged. Yet, the pact of rivers and mountains did not foresee this future of ours: one river choked with stones and concrete (Lushta), another stained with blood (Ibër), whilst the mountains witnessed these tragedies in silent terror, powerless to intervene. In the abyss between these petrified mountains, the city remains exposed and vulnerable, ensnared by invisible chains and haunted by imaginary ghosts (of modern-day turmoil). Oblivious individuals tread upon the open pits of the city's foundations - pits left as scars by the destruction of theaters and streets, the stripping of memories. Suspended over this void, the lives of Mitrovica's citizens are more precarious than those in other cities. Lifeless. «

The urban tale unfolds as an enigmatic journey into a poetic, dreamlike exploration, travers-

ing leaps in time. Different eras intermingle in non-linear harmony, defying traditional narratives that confine history within chronological boundaries. As the dreamer's gaze wanders through the cityscape, buildings emerge as silent witnesses to the passage of time, ruins as remnants of the city's evolution, etched into the nostalgic memories of the older generation who recalls Mitrovica with a longing heart. Stories of urban transformation unfold amid the covered Lushta streams (a straightforward resolution of post WWII sanitation problems), the ruins of the Hotel Adriatic (once an active social hub), the City Hammam repurposed as a restaurant, the vanished cinemas (once seven, now none), and bridges bearing the weight of human perception (the stigmatized Ibër Bridge which divides the city), the once-glorious Cultural Centre now overshadowed by a shopping mall, adorned with capitalist insignia. The journey of a harsh urban transformation discloses the battles lost in guarding the pact between rivers and mountains; a pact that paled alongside historic discontinuity.

The city has taken on new odd contours, still in the making. Cinema screens have darkened, theater curtains have fallen forever. Life moves in, life moves out. A forgotten city, a city reborn. And it lost most of its charms of the past, yet it remains special; perhaps the true essence of Mitrovica lies in the way its narrative flows over layers of time. Those who remember how Mitrovica was built and how it once thrived, cannot traverse its streets or view its buildings without conjuring nostalgic images of its former self. This city, unable to forget its past, stands like a retired Olympic medalist, forever haunted by memories of its glorious days.

## 2.1 The Fragmented Voices of Mitrovica: Time, Space, Event, and Architecture

Fragmentation is a hallmark of postmodern literary practice, representing a departure from notions of wholeness and completion, embracing instead discontinuity, isolation, and instability. Fragmented narratives decompose the overarching plot into discrete fragments, integrating them with diverse elements. Jean-François Lyotard, in his seminal work *The Postmodern Condition: A Report on Knowledge*, argues that metanarratives - grand, overarching explanations of human his-

tory - are inherently limiting and stifle the debate. He posits that the fragmentary nature of historical narratives and knowledge encapsulates a multitude of conflicting truths and perspectives, fostering a richer understanding of the world.

In architectural discourse, the city represents a holistic entity, materialized through a symphony of specific events and the spaces where these events unfold. Events, in this context, are not mere spontaneous occurrences; they emerge from the city's intrinsic circumstances and resonate in the collective memory, contributing to the continuous development of the urban structure. Spaces, whether vivid squares, narrow alleys, or architecture, are interconnected nodes within the intricate web of city's identity. Their significance is derived from the events that occur within and around them (Jacobs, 1961).

- **Time:** This paper treats time as a non-linear concept, where the boundaries between past, present, and future blur, allowing them to coexist. Historical events are viewed not as a hierarchical chronology but as a complex interaction of different temporal layers (Ricoeur, 1983). Mitrovica's narrative is shaped by multiple overlapping historical strata, from the transformative impacts of recent ethnic conflicts to its first mention recorder in 1499 when under the Ottoman Empire, and back to 1303, when the Trepça mine, predating the city itself, was first noted down. These temporal snippets highlight the subjective nature of experiencing time.
- **Space:** The phenomenology of space and its association with acts or sets of acts is crucial to forming a brief program and translating it into physical reality. Various parameters enrich and sustain the program, emphasizing the diversity of spatial interpretations and the blurred boundaries between physical and conceptual space. Space is not merely a neutral backdrop but a product of social practices, culture, and development (Lefebvre, 1991). Mitrovica's identity is forged through these interwoven concepts and the unique spatial dynamics they create. At times, Mitrovica is symbolized by a bridge not used anymore as public space, but as a physical reminder of the divided

city; other times, by the industrial legacy of Trepça, reduced today into a not more than a space of potentials; or by the now-idle transformative influence of the 1874 railway. Amidst these grand narratives, countless smaller stories unfold in neighborhoods and streets, each adding to the city's cacophony of voices, often unheard.

- **Event:** In physics, an event is defined as an occurrence at a specific time and place in space-time (French, 1968). Derrida considers events as disruptive moments that challenge the stability of spatial and temporal frames. Events hold the potential to reshape both physical and conceptual spaces. Postmodern discourse acknowledges the importance of events in shaping historical narratives and architectural experiences (Derrida, 1973). Deleuze and Guattari draw a parallel between events and the process of thinking, unfolding in a non-linear, interconnected manner that challenges traditional chronological structures (Deleuze & Guattari, 1987). Mitrovica's urban fabric is woven precisely from key events spanning political, cultural, economic, and social spectra. These events, from usurpations and wars to protests, separations, migrations, and cultural festivals, collectively shape Mitrovica's multifaceted urban narrative.
- **Architecture:** In many postmodern studies and theories, architecture transcends its physical form to become a language (Jencks, 1977). When equated with language, architecture is read as a series of fragments that form a coherent corpus within reality. Architecture resembles a masked figure, elusive and hidden behind attraction, words, principles, customs, and myriad stories (Tschumi, 1977). This fills it in with meaning, making it a crucial part of city's heritage. Architecture serves as the common denominator of time, space, and events, materializing these abstract concepts into tangible forms.

In conclusion, Mitrovica's story is told through fragmented voices of time, space, events, and architecture, each contributing to the city's complex iden-

tity. A narrated photographic frame (Figure 1) is one example of figurative tale on city's transformation:

The buildings along the timeless Ibër River mark the origin of this narrative, embodying historical whispers (letter A – primer). The muffled screeches of citizens, echoing through the city's streets, reflect their struggles and aspirations (The Ooo-s). A perpetual transformation is evident in the ongoing dialogue between events and architecture (T–transformation), encapsulating Mitrovica's dynamic evolution, while numerous other conversations intertwine with the city's monologues. This figuration reveals the interconnectedness of fragments, and highlights the importance of understanding the city as a dynamic, evolving narrative.

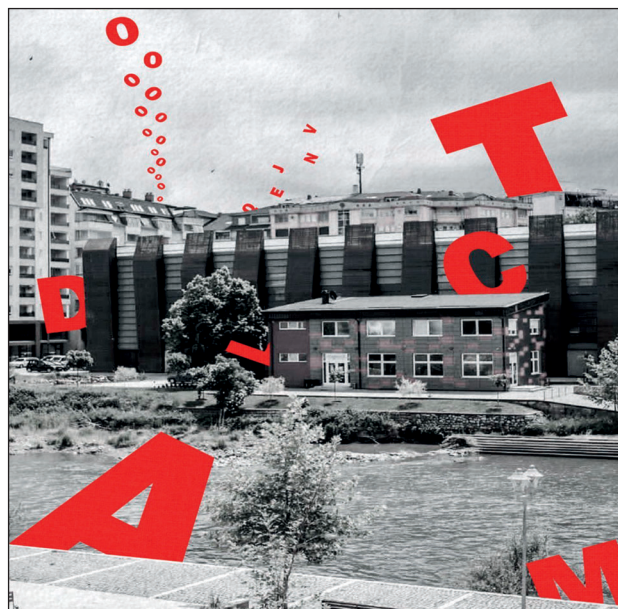


Figure 1. *Mitrovica speaking through its segments* (by authors, 2024)

### 3. How does Mitrovica speak?

How does Mitrovica speak to us? And how can we speak about Mitrovica? Can we start with the question: Who it was and who is now?

Is Mitrovica the city of rock music, more than the bearer of legacy of Trepça? Which one is fundamental to its urban identity? Or, do the people, time, space, events, and architecture speak louder? Who holds the answer to Mitrovica's true identity?

Perhaps, Mitrovica struggles to understand who it is, what it represents, and for whom (and by whom) is being represented? If so, why has this confusion arisen? Did it silence the city?



Can we interpret Mitrovica's silence, its reticence, as a form of speech? How can we understand Mitrovica, if we fail to listen to its way of speaking?

Is Mitrovica's silence a call for abandonment, a cry for help, or a plea for rediscovery? How should we respond? Conceal the fragments of silence and loudness of persisting socio-spatial realpolitik?

### 3.1 Mitrovica's Reticence - Tales of Speaking in *Silence*

The Mitrovica of today cannot mirror its former self; even if it could, they would remain distinct entities. Time has the power to negate certain values, preserve others, and amplify some. The Mitrovica of the present communicates through its fragments, both those it possesses and those it lacks, resulting in a fragmented language, devoid of rhetorical flourish. This incomplete narrative, characterized by reticence, still conveys meaning. Between the two versions of Mitrovica that converse and observe one another, there exists affection, understanding, and love. Stories and fragments that once shaped its identity no longer exist, except in the memories, which echo louder than words, and call for attentive listening, reading between the lines, uncovering hidden truths.

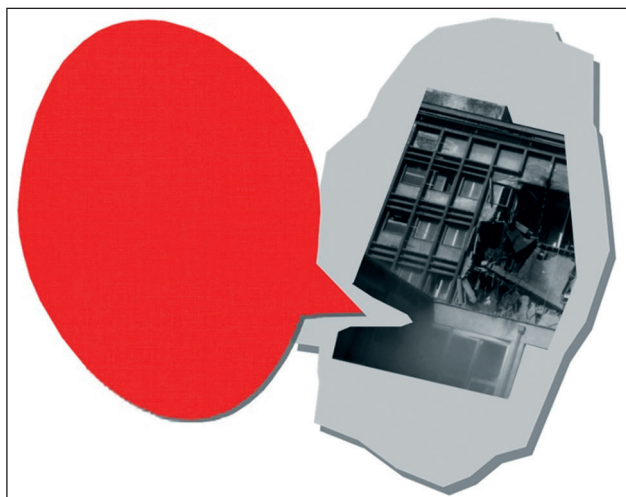


Figure 2. *City tales narrated in silence; Story of Hotel Adriatiku (by authors, 2024)*

Multiple narratives of Mitrovica are present in the city's silent screeches, such as the tragic story of Hotel Adriatiku. This iconic landmark of the 20th century collapsed in 2019, resulting in the death of one person (Prishtina Insight, 2024).

Once a bustling meeting point and a central hub for the city, Hotel Adriatiku's legacy has been overshadowed by this tragic event. The ruins continued to speak for some time, their voices falling on deaf ears or, more accurately, resonating as a muted call (Figure 2).

» Since the 1970s, a grand building stood beside the Lushta River, one of the most luxurious of its time, featuring 50 rooms, a conference hall, and a discotheque. Each room had a globe. Each globe a utopian model of the city of Mitrovica. From year to year, Mitrovica encapsulated in the Hotel Adriatiku, remained in the collective memory, an imagination in retrospect. The future was not to be introduced into the globe... the past was already a utopian vision. Years later, and the rooms were no more... neither were the globes... A new "utopian" model of Mitrovica has to be carved... one with the Hotel Adriatiku in it; a version that can only exist in the imagination, because the Adriatiku is no more.«

What does the story of this iconic history convey today? Is it the destruction of the city's cherished architecture? The loss and unsafe working conditions of its citizens? What about the silence that lingers between the death of a building and that of a citizen? Is it truly the silence, or rather a parepsis, subtly highlighted by the history and the void of what once was.

Mitrovica's parepsis, found in the case of the Hotel Adriatiku reveals tales unfolding in various dimensions: the city's morphology, physical presence or loss of certain parts, cultural, social, economic, and political aspects. Such tales underscore the complexity of city's identity: a reticence that is indirect, yet assertive. The absence of certain fragments, highlighted by Mitrovica's taciturnity, becomes a tool of emphasis, drawing attention to what is left unsaid. This stillness is not empty but filled with intentional gaps that urge further questioning and exploration. By attuning to this quietness, whether perceived as a reticent pause or the omissions of parepsis, deeper meanings and unspoken tale of Mitrovica reemerge.

#### *A Tale of Morphologic Reticence – "Changes"*

The metamorphosis of Mehë Uka Square is a symbol of the city's commitment to increasing urban vitality and prioritizing the urban experience.

From a bustling street to a pedestrian square, this transformation redefines the square as a vibrant core of the city, inviting residents to reclaim public space. Figure 3 illustrates the transformation of the Square through pictures in different times (*then vs now*).

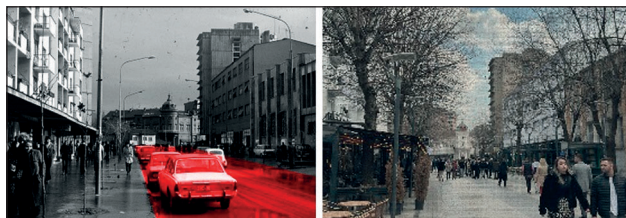


Figure 3. The old road which was used by cars, now serving as Mehë Uka Square (City Museum Archives; by authors 2023)

»A road that was traversed by the noise of cars, now embraces an existence of calmness, liveliness of people... Light steps of passers-by in the twilight of the night, between dim lights of bars closed at midnight, whispering behind the back between the cold walls, transformed the square into a realm of mystery... In a poetic convergence of past and present, a theatric play starts to unfold. A troupe of foreign artists, shedding their jackets onto the ground, begins to play the haunting chords of Frank Sinatra’s “Strangers in the Night” on a solitary guitar, invoking a timeless atmosphere that bridges eras and invites introspection. «

### *A Tale of Physical Reticence – “Building’s Secrets”*

After World War II, socialist architecture became a dominant feature of Mitrovica, though unevenly spread across the city. Pieter Troch argues that this led to a division between the northern and southern parts of the city. The north was progressive and symbolized future development, while the south remained conservative and less urban, with limited transformation potential. This division persists today. The recent conflict, with its destruction, reconstruction, and illegal buildings, has further disrupted the socialist city’s image, adding more chaos to the urban landscape (Maciulewicz, 2019). Some of the buildings constructed in the past century, such as Bankos and Zvezda (Figure 4), still stand tall in the city center. However, the

architectural identities of these structures, along with others in the city, are often at odds, leading to a disjointed urban landscape.



Figure 4. View of the Bankos and Zvezda buildings (collective housing); in 1896 and nowadays (City Museum Archives; by authors 2023)

»Under the pale veil of the moon, in Mehë Uka square, a mysterious affair unfolded between former buildings of Bankos and Zvezda. As the clock ticks toward midnight, a melody flashes the concrete veins of Bankos, awakening memories from the past and inviting Zvezda to waltz. Haunted by memories... all the years they lived there, together... facing each other like two parallel verticals... their shadows joined hands in a dance. Balconies, windows, walls, dressed and changed... chronicling shared secrets from many years ago to today. Stoically, the day finds them resuming their silent dialogue with the city, adding another layer to Mitrovica’s architectural chronicles. Another day dawns for both, with some stories locked in their concrete mouths—stories and secrets without an end. «

### *A Tale of Social Reticence – “Continuity”*

The banks of the Ibri River at the central part of the city used to serve as primary recreational spaces of Mitrovica (Figure 5). Today, this figure is harshly silenced and substituted with the divided city maxim – the river being at the heart of the division, despite the efforts of changing the narrative of the river today.



Figure 5. The Ibri River; as a recreational spot in 1967 and in 2022 (City Museum Archives; Mitrovica Guide, 2023)

»The banks of the Ibri River narrate a serene tale of time’s passage. The river whispers: “... children’s laughter splashed my waters... playful footsteps slid across thousands of stones... the nervous voices of little ones dipping their heads into the big brooms took over my days.” The river shares many stories and chuckles: “You know nothing... ha-ha... you know nothing, no, it’s fortunate that I am a river and I don’t speak... I see much, I know much... but I don’t talk. «

***A Tale of Cultural Reticence – “The City of Seven Cinemas”***

During the last century, Mitrovica gained recognition for its vibrant culture, rock music, arts, and sports. However, after the 1999 war, the city’s prominence as a cultural, economic, and industrial center began to diminish. Once home to seven active cinemas, today it has none (Figure 6). The Pallas Hotel Cinema was demolished shortly after the war, followed by others. Despite efforts at cultural revitalization, post-war Mitrovica has experienced a steady decline (Hajdari, 2024).

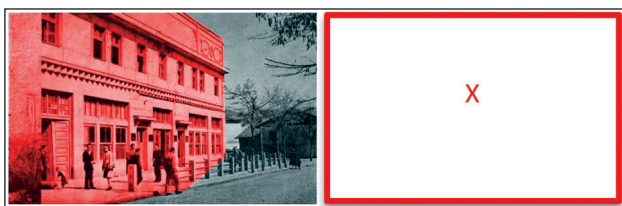


Figure 6. Hotel Palace Cinema then vs its inexistence today (City Museum Archives, by authors 2023)

»Doors of buildings, nest to doors of cinemas, nest to windows of new horizons... into the world of art, culture, and cinema... an encyclopedia. At a time when the city was surrounded by 7 cinemas from all sides, one worry loomed larger than the others: the endless que to buy tickets. Dreams materialized on screens. The film is titled *When Mitrovica meets Mitrovica after 20 years*: a utopia of parallel cities, where the cinematic landscape echoes a surreal monologue, in paranoid dimensions, where the city itself fails to know itself better. Once a drawer of dreams, now it stands empty; the cinematographic archive of a city, which mostly spoke about culture through such fragments as theater scenes and cinema halls. Faded

in memories are the ques, the movie posters, and with them, a touching tale of the loss of living scenes... now replaced by emptiness. Mitrovica remains eager for the cinematic magic that used to paint its evenings, liveliness and happy voices in the corridors of hotels, centers, and improvised buildings, all nests to cinema halls. Mitrovica in 2024 silently bows its head, in defeat in a battle that has not even started... “THE END... “

“How about we go for another comedy movie?”

“Yes, the most watched movie of 2023 is playing tonight at the Ylli cinema, I suggest we watch it”... «

***A Tale of Physical and Economic Reticence – “The Intensive Care Unit – Trepça”***

The history of the Trepça mine and its surrounding area is long and rich, culminating in the ethnological, political, and economic stagnation that has persisted since the last war (Feraud, Maliqi, & Meha, 2007). The majority of the industrial sites and buildings that once supported Trepça’s industrial development now lie abandoned (Figure 7).

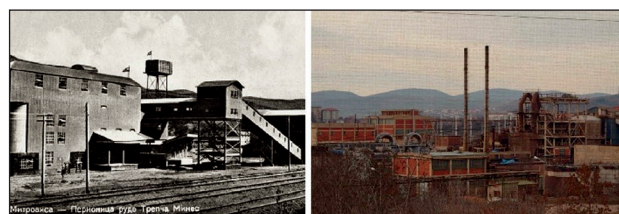


Figure 7. Trepça Industrial Complex in XX century vs in the abandoned state today (City Museum Archives, 2023) (City Museum Archives, Mitrovica Guide 2023)

»Among the white-clad walls, geometries born of necessity and work unfold. The building with a different uniform that is but a patina of an enduring heritage, stands there as a testament to a life that once flourished. Iron veins that once pulsed with mining wealth and prosperity penetrate a body that can no longer move. The windows are like empty eyes, open to an unknown horizon of the future, full of fog and uncertainty. Facades subjected to merciless time, betray a purposeful design with the chaos of human abandonment... But Trepça endures, a patient in this architectural ward that once promised life... today a skeletal remnant,



calls out pensively for a step... an electroshock... a spiritual revival... The heart that once resounded loudly with the vitality of industry now resounds with silence. Arteries blocked by the remains of abandonment no longer pump the blood of economic and industrial life. And Trepça remains motionless, trapped in an extreme melancholy of what it once was... carrying with it the weight of oblivion, of no returning. In this architectural ward, the heart of Trepça remains a silent witness of its economic mortality, a colossal body, physically existing and spiritually dead. And it calls out... it continues to call persistently, for an infusion... a human effort... for something that will give it life. «

### *A Tale of Political Reticence – “Once upon a time... right in this bridge”*

The Ibri Bridge has seen a drastic shift in perception since the 1999 war. Initially, it was a symbol of urban connection. Today, however, the Ibër Bridge is synonymous with division, overshadowed by political tensions. The current stigmatization is largely due to media and negative publicity, transforming a once significant city symbol into a point of contention (Figure 8).



Figure 8. The Ibri Bridge, view showing the northern part of Mitrovica in the 1970s (City Museum Archives, 2023)

From the under-bridge; a coherent dimension of years ago:

Under the bridge, life is happy... people shake hands as they cross the bridge... spoiled children tug at their mothers' sleeves... some cars pass, and some stop to take pictures of the Ibër River. Leaning on the wooden, then iron frames of the bridge structure, hundreds of people stop time there every day, right on the bridge. They pass here and there, sometimes you hear raised voices, and someone is always in a hurry, but no one gets in your way. No-

body stops... the bridge doesn't break... it doesn't divide, it doesn't break down.

From the over-bridge; known by the same name, in a parallel dimension:

Up the bridge, life unfolds differently... tension, protection, obstacles, separation, riots, north-south, news, headlines... forced perceptions. The bridge built by fear overlays a happy bridge beneath, unaware of its existence...

Is fear tangible?!

Who changed the narrative of the bridge? «

### 3.2 Mitrovica's Urban Palimpsest – The 'writing' of the city by its every single inhabitant

The concept of the urban palimpsest is a crucial tool in urbanism discourse, clarifying its nature as a complex cultural phenomenon. Traditionally, a palimpsest refers to a reused manuscript bearing remnants of earlier writings (The Gale Group, 2005). In urban contexts, it signifies a space with visible layers of different temporal aspects beneath its surface. These layers, whether temporal, spatial, or imaginative, embody the continuous transformation of an urban entity (Buckler, 2014a).

Understanding a city like Mitrovica, with its multifaceted identity, from multicultural hub to industrial powerhouse, requires recognizing the interplay of preserved, transformed, and overlapping components that form its dynamic urban landscape. Michel de Certeau, in *The Practice of Everyday Life*, relates the creation of an urban palimpsest with the unconscious 'writing' of a city by its inhabitants through daily life. While the broader urban framework might be perceived from a distance, those on the ground are often unaware of their crucial role in crafting the city's 'urban text' (Buckler, 2014b).

This concept extends beyond individuals to include all forces shaping the city, such as time, space, events, and architecture. By examining the unfolding layers, the true nature of an urban entity can be understood. Perceiving a city as a palimpsest is essential for grasping its continuous evolution, expansion, and recreation of multiple urban layers.

To comprehend Mitrovica's spatial and morphological changes over the years, urban maps and plans from 1950 to the present have been layered,

revealing the city’s evolving narrative (Figure 9). Every line, shape, and layer of this map was crafted by inhabitants of Mitrovica, as well as by countless passers-by, each leaving their permanent marks on the city’s evolving narrative. These collective imprints, formed through daily interactions and fleeting moments, weave a complex tapestry that reveals the echoes of Mitrovica’s rich and dynamic history. The city’s streets, buildings, and public spaces are inscribed with written stories and spoken tales, each contributing to the vibrant and multifaceted identity of Mitrovica. Through these intertwined narratives, the city speaks, bearing witness to its past and continuously shaping its future.

### 3.3 The meaning behind Mitrovica’s silence – What we need to listen to

Beneath Mitrovica’s apparent silence lie countless stories and voices. This silence serves as a rich canvas painted with the hues of history, culture, and transformation. To truly understand this art, one must listen closely and empathize with the city’s unique mode of expression. Mitrovica’s reticence is not merely a sign of absence or reluctance to share but is a potent form of communication,

demanding a deeper engagement with its phenomenological associations.

The challenge lies in how people respond to its silence. Do they hear it as a call to leave [3], a sign of neglect, or a plea for help? Or do they recognize an opportunity to rediscover and reconnect with the city’s hidden layers?

By engaging with Mitrovica’s reticent language, the unspoken words and the hidden fragments behind the layers of time, its identity and legacy can be uncovered. This methodological approach should be integrated and prioritized in the city’s planning and urban development processes to ensure comprehensive and sustainable growth.

The city’s true narrative is found in what is unsaid, what is omitted, and what is left to interpretation, it is exactly this aspect – *paralepsis*, that should be acknowledged in attempts to reconcile the complex dialogue between its past and present, its articulated and unarticulated words.

## 4. Conclusion

The city is a complex, multidimensional, and holistic entity, its present form the result of continuous evolution over the years. Equally intricate

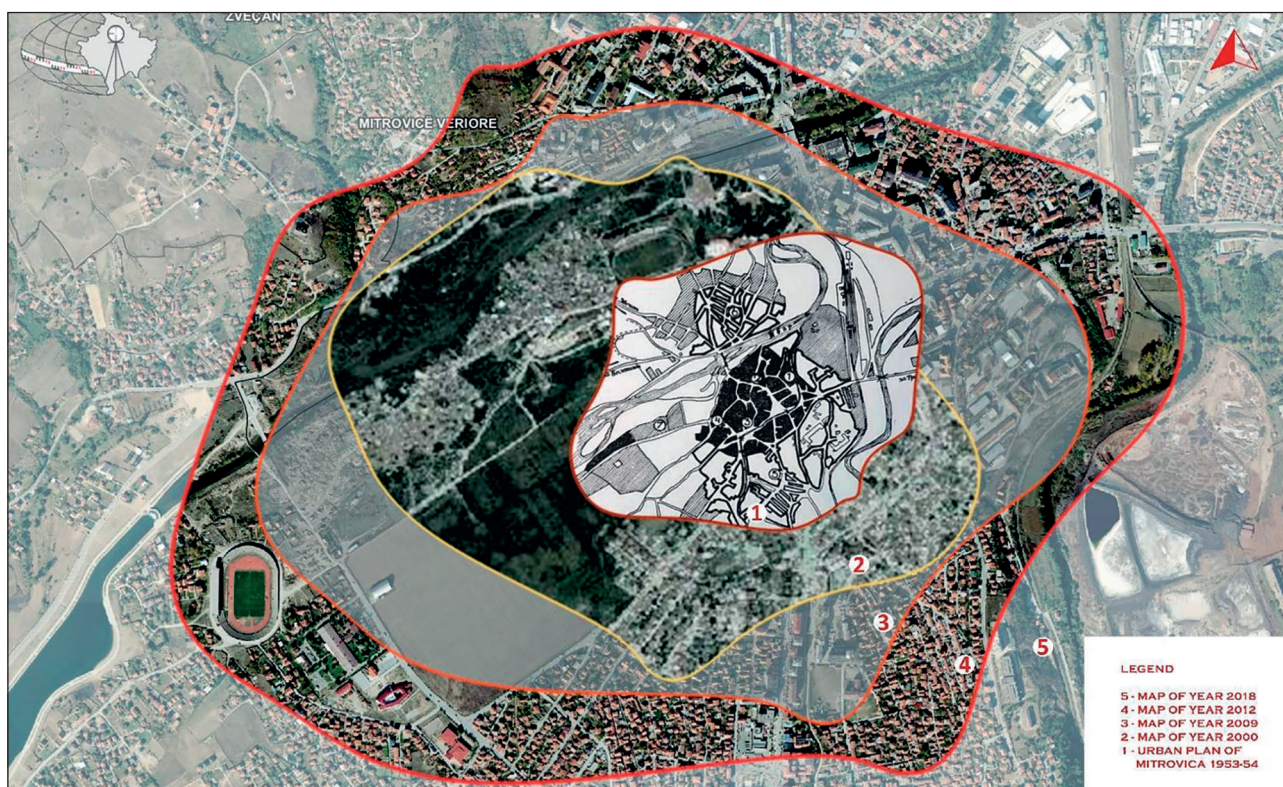


Figure 9. Mitrovica’s urban palimpsest (by authors, 2024)



is the question of its identity and the various epithets it acquires and sheds during its development. Such is the case with Mitrovica, a city once recognized as a multicultural settlement, an industrial giant, a strategic garrison, an economic center, and a hub of art and rock music. Mitrovica embodied all these roles and more.

Acknowledging Mitrovica as it once was, a promising city of the future, this study seeks to understand its current identity, the multidimensional fusion of past and present, and to explore the city through a postmodern lens. This research pioneers a new narrative paradigm for Kosovar cities, emphasizing non-linear development and liberation from the constraints of traditional historical narratives. While cities are often represented through historical chronicles, the missing pieces of urban histories remain largely untouched and unexplored. Such elements are crucial in articulating a comprehensive urban identity, based not only on the materiality of architectural and urban forms but also on immaterial attributes like actions, traditions, and ways of living.

The application of proven theoretical methods, including photographic interpretation as material evidence of a time and place, establishes a new tradition and interpretive approach. In the case of Mitrovica and its urban tale, this highlights the significant role that narrative plays in achieving a deep understanding and visioning of the city. This study proposes future trajectories for cities by encouraging the preservation of their unique stories. However, Mitrovica's Urban Tale is not merely a theoretical exploration; it unveils a paradoxical reality where the city's story remains intact, while essential fragments of its identity are lost and muted, creating voids within its urban fabric.

This paper addresses the inherent challenge of preserving and conserving identity amidst the changes imposed by time. It prompts a deeper inquiry into the forces that shape city narratives and the implications for architectural practice and future urban planning.

## Endnotes

- [1] Following the Kosovo War of 1998-99, Mitrovica has become a symbol of ethnic division. The city has been divided between an Albanian-majority part south of the Ibër River, and a Serb-majority part north of the River, an area of about 1.5 square kilometers. Following the 2013 Brussels Agreement this area was granted the status of municipality: The Municipality of North Mitrovica. The city's division has reinforced its socio-economic crisis fueled by ethnic tensions.
- [2] Paralepsis (or Omission) - a rhetorical strategy (and logical fallacy) of emphasizing a point by seeming to pass over it. While in reticence a direct suggestive figure leaves in silence to speak more forcefully, on the contrary, paralepsis is an indirect, suggestive, and harassing figure that denies in order to assert forcefully.
- [3] Mitrovica has witnessed significant migration due to economic struggles and political unrest, resulting in population decline particularly in urban areas. Job scarcity has driven many Albanian workers to seek opportunities abroad, while political conflicts, notably in northern Mitrovica, have displaced residents, intensifying demographic shifts. This persistent migration, fueled by economic instability and ongoing displacement, has strained relations between locals and newcomers, adding complexity to Mitrovica's demographic dynamics.

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Corresponding Author  
 Florina Jerliu,  
 Faculty of Architecture,  
 University of Prishtina,  
 Republic of Kosovo  
 E-mail: [florina.jerliu@uni-pr.edu](mailto:florina.jerliu@uni-pr.edu)

# MIS in primary education and IT user satisfaction as indicators of quality improvement

Sejla Delic, Mensura Kudumovic

Faculty of Educational Sciences, University of Sarajevo, Sarajevo, Bosnia and Herzegovina

## Abstract

In elementary school, in accordance with the development of information systems, it is necessary to adapt information systems to regular use in everyday work. The work will demonstrate the justification of increased demands for organizational changes, that is, reengineering basic education in order to ensure quality. This activity in the primary school will be presented as part of the joint activity of the school management, and the development of IT (Information Technology) applications in primary education through the distance learning paradigm will be presented, with special reference to the primary school where this application should lead to continuous improvement in teaching and business processes. The increased demands for organizational changes in the era of the COVID-19 coronavirus pandemic caused the reengineering of basic education, affecting the quality of teaching through the application of a distance learning platform. In addition to higher quality education, the goal is to reach more inaccessible users, improve information and communication technology, and ultimately improve communication, that is, the quality of teaching and the learning process itself. The method of systematic approach and the method of theoretical analysis led to the results of the research, which was carried out for the purpose of assessing the current performance of elementary schools in the field of education, as well as the importance of information systems in education. 55 school employees participated in the research. There are numerous problems with the establishment of new information technologies in any business environment, especially in the educational environment, which we have all witnessed in the past period. What should be the essence of reengineering is the establishment of a new system in order to improve the existing one, and how many difficulties we face, many researchers will write. It will be concluded that it is neces-

sary to improve the previous work in order to increase the effectiveness and efficiency of the results and investments in the teaching process.

**Key words:** *management information system, information technology, distance learning, reengineering, learning platform*

## 1. Introduction

The organization of teaching work at school has not changed significantly since J.A. Komenski introduced the class-hour system, the key elements and characteristics of which are the frontal form of work, equal teaching for all unequal students. There were and are alternatives, but they are left to the wishes of individuals. What has significantly changed teaching is the development and emergence of informatics and information systems. This introduced a new subject and approach to teaching. Now the teaching can be organized quite differently compared to the postulates set earlier. Unfortunately, the biggest application of information and communication technologies only happened in 2020, when the world started using these systems during the pandemic. The increased demands for organizational changes in the era of the COVID-19 coronavirus pandemic caused the reengineering of basic education, affecting the quality of teaching through the application of a distance learning platform - the teaching is of higher quality, multidimensional, and contents are more available at the individual level of each student.

## 2. Management information system, information technology and primary school

Experiments show that teaching and learning with the help of information technologies are more efficient than traditional teaching in terms of the quality and quantity of acquired knowledge, the

durability and applicability of that knowledge, and especially in terms of the student's mental mobility, his motivation to learn, as well as more dynamic, more humane and fairer evaluation and evaluation of student work. As the center of social power and social production moved to scientific, information and educational systems, the central problem is not how to organize efficient business, but how to organize decision-making, i.e. information processing (Kudumović, 2018). In this regard, management information systems should be viewed as part of a comprehensive business-teaching information system, while information technologies represent an apparatus for the development of management information systems that will enable the development and creation of competitiveness on the labor market for the organization that uses them, in this case an elementary school. In order to survive on the labor market, schools have decided on different learning platforms in order to offer users (students and teachers) as efficient, effective and high-quality learning as possible. It is not necessary to know the way of evaluating things and phenomena in our organizations in order to understand how influential individuals resist changes and the arrival of young, educated personnel (Dunderović, 2005). What is obvious is the fact that even these individuals will have to comply with the new practices if they want to continue working in the positions in which these changes found them. Taking into account the types of content, strategies of the educational process as well as the organization itself, the application of information technologies will depend (Radenković and Despotović, 2005). "In the future, new technologies will be maximally sophisticated, so they will require great intellectual and physical efforts to master them. Illiterates in the 21st century will not be those who do not know how to read and write, but those who are unable to learn, unlearn and learn again" (Kudumović, 2018, p. 6)

### 3. Aims

The goal of such changes in primary education is reflected in the following:

- Education becomes of higher quality - communication is facilitated and information is available to all participants of the educational process at any time.

- Education is available even to the health-impaired, in this case they do not suffer the consequences of their condition, and the teachers teach remotely for everyone, without difficulty.
- Improvement of information and communication technology in all schools, regardless of whether they are in urban or rural areas.
- The main goal was to investigate - to show that the use of IT improves communication, and thus the quality of teaching and learning expressed through the degree of teacher satisfaction, as one of the main indicators of quality measurement.

### 4. Material and methods

The research was conducted in the area of Central Bosnia Canton, Vitez municipality, Preočica village, primary school "Dubravica" in the period from March to June 2021. In this work, the method of systematic approach and the method of theoretical analysis was used. This is a very complex research that was carried out for the purpose of assessing the current performance of elementary schools in the field of education as well as the importance of information systems in education. 55 school employees took part in the research, of which 18 were male and 37 were female, of which 2 were under 25, 25-35 - 15, 36-45 - 21, 46-55 15 years old, 2 respondents over 55 years old. When it comes to the educational structure of the respondents, 3 respondents have completed a pedagogical academy, 37 respondents have completed a bachelor's degree, and 15 respondents have completed a master's degree. Statistical analysis of the process shows that there is a measurable statistical connection to the impact of the quantity and quality of information necessary for the decision-making process in elementary school.

### 5. Results

The results of the research show that employees are satisfied with communication through information technologies during the COVID-19 coronavirus pandemic. The quality of the received information has significantly improved compared to the period when information was exchanged only by words.



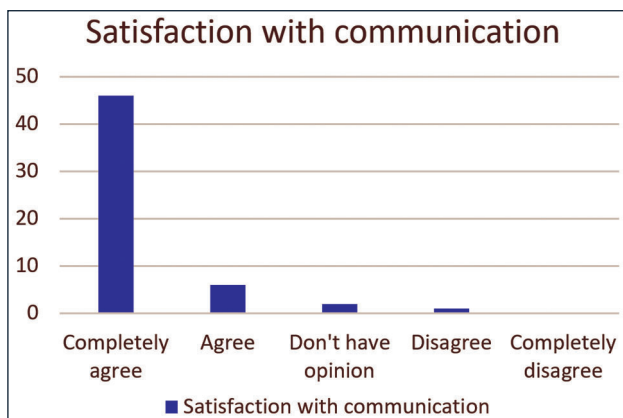


Figure 1. Satisfaction with communication

Furthermore, the respondents declared that they were satisfied with the way they were conducting distance learning and that information technology made it easier for them to teach students, assess their knowledge and cooperate with parents.

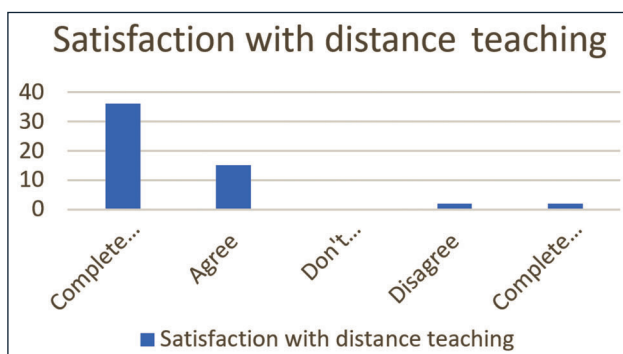


Figure 2. Satisfaction with distance teaching

The respondents declared that they were partially satisfied with the equipment they had for distance learning, communication with management, parents and students.



Figure 3. Equipment satisfaction

## 6. Reengineering and new information technologies

Similar situations are not foreseen in the Law on Basic Education SBK and its amendment (Ministry of Education of the Central Bosnian Canton, 2001, Ministry of Education of the Central Bosnian Canton, 2004). The reason for this is the obsolescence of the document and its irrelevance in relation to current practice. The school is managed by a director who is responsible for conducting pedagogical activities (Ministry of Education of the Central Bosnian Canton, 2001). There are numerous problems with the establishment of new information technologies in any business environment, especially in the educational environment, which we have all witnessed in the past period. If we emphasized the importance of young, school-trained people, we could initiate changes in the desired direction and at a speed that corresponds to our world of changes (Dunderović, 2005). One problem is the difficulty of establishing information requirements both for the individual user and for the organization itself. What should be the essence of reengineering is the establishment of a new system in order to improve the existing one, and how many difficulties we face, many researchers will write. Reengineering is a process that changes organizational culture, creates new processes, new systems, new structures and new ways to implement change and influence the success of a company, firm, business organization (Kudumović, 2018). “The characteristic of today’s information systems is that, in addition to information for management, it connects all workplaces for the formation, processing and use of information in the interactive work of each user with databases. They become a means of daily work for employees, replacing filing cabinets, letters, forms, mail deliverers, and auxiliary computing devices” (Kudumović, 2018, p. 10).

## 7. Conclusion

This research shows that the use of information systems and information technologies today is not a matter of choice but a matter of survival in the labor market. Certainly, their application in education and business in education is a revolutionary

phenomenon that should be supported by all participants in any process. Not only does the use of IT improve communication, and thus the quality of teaching and learning, but it also facilitates the education process for all participants in the class as well as for third parties, communication is facilitated and information is available to all participants in the educational process, and education is even available for health vulnerable, regardless of whether the participants are residents of rural or urban areas.

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*Corresponding Autor*

*Sejla Delic,*

*Faculty of Educational Sciences,*

*University of Sarajevo*

*Sarajevo,*

*Bosnia and Herzegovina*

*E-mail: [delicsejla95@gmail.com](mailto:delicsejla95@gmail.com)*

# Placemaking as an approach for enhanced healthy life in the cities: Case study of Sarajevo

Mirna Krpo

Landscape studio “AvliYa”, Sarajevo, Bosnia and Herzegovina

## Abstract

This work primarily aims to encompass and analyze the impact of “healing gardens” within local communities and their significance in facilities that provide users with necessary assistance during their treatment. The research is predominantly based on “healing gardens” for children with cancer and has been applied in practice through a case study at one of the facilities in Sarajevo where the Parents’ House for children with cancer is located. The research also included another case study implemented in one of the residential areas in Sarajevo, the Grbavica neighborhood, through which the needs of its residents for the arrangement of communal green spaces were presented. The work aims to provide guidelines for further design of “healing gardens” within local communities to most beautifully and effectively influence the psycho-physical condition of their users.

**Key words:** *placemaking, healing gardens, healthy life, green public space, landscape design, landscaping, landscape architecture.*

## 1. Introduction

As a comprehensive idea and practical approach to improving the appearance of public green spaces in cities, creating green spaces inspires and encourages people to collectively design public spaces as the heart of every community. Strengthening the bond between people and the spaces they share, placemaking refers to the collaborative process through which we can shape open spaces to draw attention to, and elevate the importance and communal value of, the space itself. The value lies not only in better urban design of the space. By creating such spaces, we facilitate creative patterns of green space use, paying attention to the physical, cultural, and social identities that define the city and influence its continuity in development.

The concept of “healthy” design is one of the most important and favored models that highlights the importance of a healthy environment, society, and their users. It is rooted in the planning and design profession of landscape architects and has long been one of the most significant models in landscape architecture design, particularly in the segment of “healing gardens.” Previous research has shown that the term “healthy communities” evokes the notion of communal medicine and public health. Hence, the Ottawa Charter for Health Promotion (WHO, 1986) provides ample space for planners and designers to balance ecosystems, sustainably use resources, and promote social justice and equity (Harpham and Allison, 2000). The accumulation of various “unhealthy” conditions signals that planners should take on the role of “better rehabilitation” for individuals affected by various health limitations and their healing needs.

In exploring a joint spatial-planning project extended by the idea of “healthy cities” and “healing gardens” (Barton and Tsouros, 2000; Boarnet et al., 2003), the public health rule by the local community represented the primary prerequisite for integrating the health impact assessment (HIA) approach. It answered questions about how existing or planned space use, designed communities, projects, and programs affect public health. The concept of “healthy cities” influences the psycho-physical condition of people and the standard of living in cities. Understanding and actions for the sustainability of modern cities should be of primary and crucial importance for every local community, where everyone has the right to a healthy life and to spaces that will enable all users to more easily and healthily navigate their days during treatment.

This work aims to demonstrate the significance and solutions of “healing gardens” for local communities and cities. Two case studies were presented in the city of Sarajevo, where we also applied



practical aspects with users. The first case study was conducted with parents and children residing in the Parents' House for children with cancer in Sarajevo. The facility is surrounded by green areas on all sides, including a terrace, green roof, and children's park. The second case study was conducted with the local community in a residential neighborhood of Grbavica, where we organized a green space arrangement action with children and residents. The program of this action included activities through cleaning, arranging, playing, and fundraising - donations. The results of both projects showed positive outcomes and concluded that such projects are crucial for the cities in which they are located, as well as for local communities and users during their most challenging days. Such green spaces represent a quality image for the urban matrix of the cities in the future.

## 2. Green public spaces and health

Public gardens also play a crucial role in improving air quality. Plants absorb harmful substances from the air and produce oxygen, thereby reducing pollution levels in urban areas. Numerous studies analyze various factors including the distance of parks from homes, the size of parks, and their amenities. For instance, a study conducted by the Public Health Institute in Croatia on people's movement habits in urban environments showed that people with easier access to green spaces, such as parks, are more likely to spend time in nature, whether walking, exercising, or simply relaxing. Furthermore, the study highlighted the positive characteristics of access to natural environments on mental health. People who have easier access to parks and green spaces are often less stressed and have lower levels of anxiety, which can motivate them to spend time in nature.

Many studies (Boarnet et al., 2003; Ošljaj, 2000) have shown that after a stressful event, images of nature quickly produce a calming effect. Within three to four minutes of looking at greenery, blood pressure, breathing rate, brain activity, and stress hormone production decrease, and mood improves.

In recent years, there has been a significant increase of interest in therapeutic gardens, or "healing gardens." These gardens are specifically

designed for various uses in healthcare, rehabilitation, and other therapeutic environments. Hartig et al. (2006) explained that it also represents a place, a process, and their intertwining. A "healing garden" is an environment where plants dominate, interacting positively with other natural elements. Interactions can be passive or active, depending on the garden design and the needs of the users. There are many subtypes of healing or therapeutic gardens, including healing gardens, rehabilitation gardens, meditation gardens, etc.

Basic characteristics may include wide and gently graded accessible entrances and paths, raised beds, planting beds, sensory elements, and plant selection focused on color, texture, and fragrance, as well as outdoor playsets. The characteristics of therapeutic gardens were originally developed in 1993 by the American Horticultural Therapy Association (AHTA) working team based on best practices and principles (American Horticultural Therapy Association, 1995).

These research results indicate that the availability of green spaces in urban areas is key to encouraging people to spend more time in nature. Creating and maintaining parks and green spaces can have a positive impact on the health and well-being of the local community. Greenery in urban areas is not just a luxury, but an important segment that contributes to better health, happiness, and quality of life for all who live in those areas. Creating and maintaining these green spaces should be a priority for all urban planning to build healthier and more sustainable communities for present and future generations.

Positive characteristics of healing gardens:

- Plants promote healing - Living plants can offer a place of peace and refuge, a place shown to boost patient morale.
- Plants reduce stress - Specially designed green oases create a calming environment where guests, employees, and patients can benefit from lower blood pressure and stress levels.
- Plants have been shown to increase productivity for those working in such facilities and caring for patients.
- Plants also improve the sense of sound - adding water features can reduce hospital noise (American Horticultural Therapy Association, 1995).

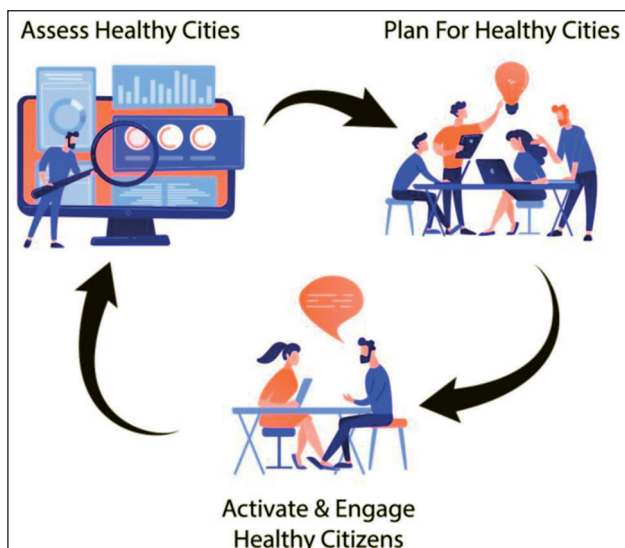


Figure 1. Positive impacts of green placemaking and its connection to urban planning (URBACT, 2022)

### 3. Placemaking

The term *placemaking* was first used in the mid-1990s, gaining popularity in the 1960s when urbanists Jane Jacobs and William H. Whyte introduced revolutionary ideas about designing cities for people, not just for cars and shopping centers. Their work mainly focuses on the social and cultural significance of neighborhoods and connecting public spaces: Jacobs encouraged ordinary citizens to take ownership of streets through the now well-known idea of “eyes on the street,” while William H. Whyte (URBACT, 2022) laid out key elements for creating social life in public spaces. Applying the wisdom of these urban pioneers, since 1975, the “Project for Public Spaces” has gradually developed a comprehensive approach to city planning.

A place diagram is one of the tools that the “Project for Public Spaces” developed to help local communities assess places. The inner ring represents the key attributes of a place, the middle ring its intangible qualities, and the outer ring its measurable data. The city planning approach in the “Project for Public Spaces” can be a springboard for the revitalization of local communities. Placemaking through this public space project is defined as: Community-driven, Visionary, Function before form, Adaptable, Inclusive, Focused on creating destinations, Context-specific, Dy-

namic, Trans-disciplinary, Transformative, Flexible, Collaborative, *Sociable* (Project for Public Spaces, 2007).

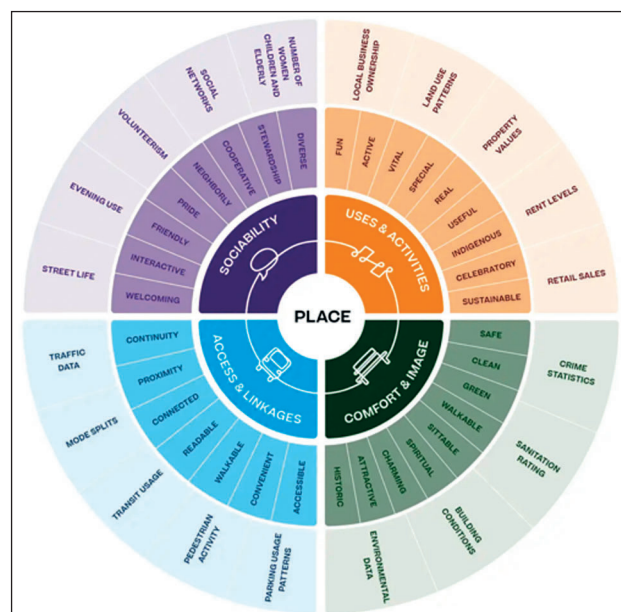


Figure 2. Diagram of place (Project for Public Spaces, 2007)

Today, the term “placemaking” is used in many environments—not just by citizens and organizations dedicated to improving the local community, but also by planners and designers who use it as a “brand” to imply authenticity and quality, even if their projects do not always fulfill that promise. However, using “placemaking” concerning a process that is not actually rooted in the public loses significance for its potential value. Placemaking is not the same as designing a building, designing a square, or developing a commercial zone. As more local communities engage in creating places and more professionals call their work “placemaking,” it is important to preserve the meaning and integrity of the process. A large public space cannot be measured solely by its physical attributes; it must also serve people as a community resource where function always exceeds form. When people of all ages, abilities, and socio-economic backgrounds can not only access and enjoy a place but also play a key role in its identity, creation, and maintenance, then we see true placemaking in action (Project for Public Spaces, 2007).

#### 4. Approach to enhance public health in Sarajevo

The current state in Sarajevo is still in the “awakening” phase regarding the awareness of the significance of such projects within local communities. For the city of Sarajevo, these projects are extremely important considering the ongoing struggle each year to address the issue of air pollution that the city is suffocating in.

By implementing such green spaces and using suitable plants that have been proven to purify the air, the concentration of unhealthy particles would be reduced within these facilities, providing refuge for their users on the most challenging days.

##### 4.1. Case study 1, residential area Grbavica

Sarajevo, as an already defined longitudinal city, has experienced longitudinal expansion during various periods. The zone analyzed in this pilot project is an area that began to be treated differently during the Austro-Hungarian period due to the railway, where residents from the entire Austro-Hungarian Empire who were oriented towards the railway settled. This structure of the city, which is the most picturesque cross-section of two civilizations, Eastern and Western, is manifested in this area, characterized by family houses and residential villas, which had not existed as characteristic buildings of the Austro-Hungarian period. Only residential buildings in blocks existed at that time. This construction certainly requires and opens up new possibilities for the development of private open spaces that were shaped differently due to the culture of life.

The aim of this pilot project was not only to create a model for the protection and restoration of private open spaces but also to enable the return of traditional values and to create interest of local communities in Sarajevo in using future guidelines for designing private open spaces.

During the restoration and protection of the Grbavica residential area, it was necessary to precisely define the exact framework within the private open spaces, which includes:

- The position of private open spaces in relation to the building and urban matrix, which primarily refers to the orientation

and access to the private open space from the terrain, so as not to disrupt the entire ambiance.

- The new private open space should not exceed more than 50% of the surface area of the building with which its implementation is planned.
- By researching and analyzing greenery (low and high vegetation), we concluded that its presence in private open spaces should not exceed approximately 70%, with seasonal flowers occupying 23.78%, perennials between 15-40%, potted plants up to 6.09%, and tall vegetation around 35%.
- The materialization of private open spaces should be from natural, authentic materials such as stone, wood, and cobblestone. Cobblestone is the most dominant element of the private open space and plays an extremely important role in the overall appearance of the space.

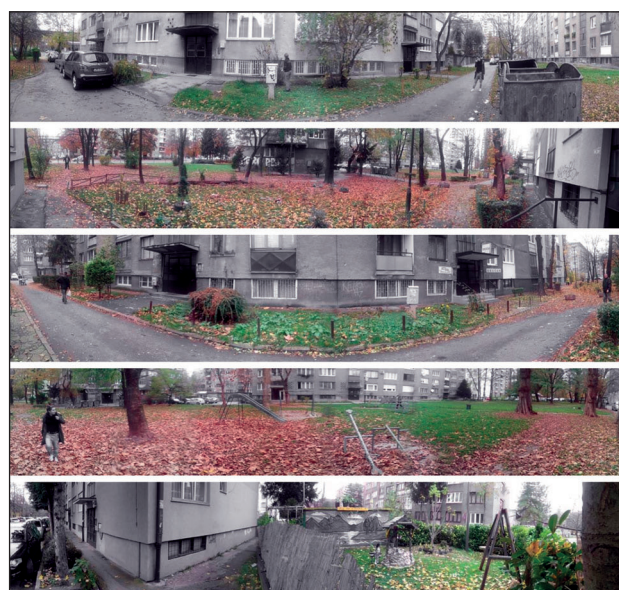


Figure 3. Existing condition on Grbavička Street (Krpo, 2015)





Figure 4. The first cleaning action, Grbavica, (Krpo, 2015)



Figure 5: Game program, Grbavica, (Krpo, 2015)

This action was implemented through four programs: cleaning, landscaping, playing games and fundraising for the implementation of landscaping. The work program served as a platform for promoting and developing entrepreneurial initiatives. The aim was to create a sufficiently large group of young people with diverse knowledge and skills who would collectively address the problems and needs of local communities. The fundraising program was a collective effort aimed at gathering and diversifying various sources of funding, providing education, counseling, and assistance in the creation and implementation of ideas. Through all these programs, we managed to achieve a positive outcome of the action and gift the local community and its residents with a beautifully landscaped green area where youth programs for play and education flourished.

#### 4.2. Case study 2, The Parents' House for Children with Cancer in Sarajevo

The aim of developing this pilot project was to create a model of a “healing garden” for children with cancer and their parents during their stay at the Parents' House in Sarajevo, and to define guidelines for the future design of similar projects within local communities.

The design process itself represented a significant responsibility. It was necessary to research the impact of plant material, their effects on patients with compromised immune systems, and to investigate the characteristics of plants that cause allergic reactions.

The Parents' House for children with cancer is located in Sarajevo. The goal was to provide its users, both parents and children, with a positive environment during their treatment and stay at the Parents' House. The preparatory work and activities spanned a month, during which parents and children collaborated with us to design and organize the garden.

The action proved to be a very positive example for their psycho-physical state during those days. The project involved landscaping all green areas with diverse plant colors, which further enriched the ambiance and green oases of the Parents' House. The project also included details of urban outdoor playsets, decorative paths, and the design of a canopy for the seating area in the garden, which directly connects to the house's living room, providing users with an “extended stay” connected to the outdoor green space where they can enjoy pleasant days.



Figure 6. Action ‘A Plant for a Smile of Parents and Children’ (Association Srce za djecu, 2024)





Figure 7. Action 'A Plant for a Smile of Parents and Children' (Association Srce za djecu, 2024)



Figure 8. Action 'A Plant for a Smile of Parents and Children' (Krpo, 2024)



Figure 9. Action 'A Plant for a Smile of Parents and Children' (Krpo, 2024)



Figure 10. Action 'A Plant for a Smile of Parents and Children' (Krpo, 2024)



Figure 11. Action 'A Plant for a Smile of Parents and Children' (Association Srce za djecu, 2024)

## 5. Discussion and Conclusion

The significance of the human-nature relationship only became apparent when it was disturbed. This underscores the tendency for humans to acknowledge the value of their connections only when they are threatened, including their bond with nature.

Maintaining nature is not a profession but a philosophy. This perspective is part of a unique interaction where we encounter various excavations, symbols of birth, labyrinths of memory, gardens of life, traces of love, shadows of hope, and paths to healing. In modern times, humans, understood as subjects, change the relationship between humans and nature. No longer seen as someone who



needs to harmonize with nature, humans are now perceived as capable of determining its rhythm. For them, nature becomes an object of study, planning, and use, making humans its rulers. The original harmonious relationship disappears, replaced by the subjugation of nature to human will. Our space encompasses nature and the external world, where cherished objects and memories reside, which we call our “living space” – nature and “healing gardens.”

Unlike typical gardens, healing gardens are sanctuaries specifically designed to promote better mental and physical health. They usually include spaces for walking and sitting, with elements added to have a calming effect on mental health.

Based on current research and practice (Moodscapesdesign, n.d.), we can conclude that these gardens offer multiple benefits, including the following:

### **Advantage 1: Stress and Anxiety Reduction**

The term “stress” has become commonplace in the modern, fast-paced world. Workplaces and contemporary home life tend to create high levels of anxiety, and doctors have found that such factors lead to numerous health issues. By establishing “healing gardens,” we create a space where we can escape a range of common stressors. Research has shown that these gardens can be beneficial to individuals suffering from post-traumatic stress disorder (PTSD). The soothing solitude helps these individuals temporarily avoid potential triggers. They also have a therapeutic effect on many other anxiety disorders.

### **Advantage 2: Escape and Inspiration**

The main advantage of “healing gardens” comes in the simple escape after a hard day’s work. Even in an urban setting, a garden provides separation from the world. Rhythmic sounds like flowing water create a focus for the mind. Additionally, fresher air in the garden helps improve overall health. Healing gardens thus provide a place for meditation, allowing individuals to limit unwanted mental stimuli.

### **Advantage 3: Environmental Impact and Medicinal Plants**

Like all gardens, “healing gardens” help reduce carbon dioxide. Greenery also aids in purifying the air of pollutants, while larger plants also provide shade.

The involvement of local communities and future users creates a sense of belonging to the spaces, and thus responsibility for maintaining these spaces in the future. Collaborative efforts and support for such projects are crucial for maintaining the continuity of implementing “healing gardens” in cities.

Therefore, humans must change their exploitative relationship with nature and strive to overcome alienation from nature and establish a direct relationship with nature as nature in its essence, rather than nature as an object of exploitation.

*“We abuse land because we regard it as a commodity belonging to us. When we see land as a community to which we belong, we may begin to use it with love and respect.” - Aldo Leopold*

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*Corresponding Author*

Mirna Krpo,  
Landscape studio "AvliYa",  
Sarajevo,  
Bosnia and Herzegovina,  
E-mail: [mirna.krpo.la@gmail.com](mailto:mirna.krpo.la@gmail.com)

# Improving the professional development of teachers through learning management systems

Nejra Hadzic - Krnic, Mensura Kudumovic

University of Sarajevo, Faculty of Educational Science, Sarajevo, Bosnia and Hercegovina

## Abstract

At the core of professional development of teachers, it is sought to understand that professional development is in teaching teachers how to learn and transform their knowledge into practice, all with the aim of developing student abilities. The increasing need for online education makes us wonder what are the most effective practices for facilitating professional development using online platforms. Online professional development is defined as formal professional learning that is fully realised online (online), all with the aim of more efficient changes in the knowledge, behaviour and practices of teachers. The efficiency of this type of teacher education can be reflected in increased cooperation with internal and external associates, increasing the ability to think about their practice, as well as the implementation of teaching practices learned through learning management systems. In order to determine the satisfaction of the current way of professional development of teachers, a survey was conducted among teachers. Problems faced by teachers during their professional training were identified, as well as obstacles that lead to reduced use of online platforms for their education. The obtained research results will serve to improve the professional development of teachers, promote an online system for learning management, so that every teacher has access to online education and topics that they will be able to perfect when they want and at the pace they want.

**Keywords:** *professional development, teacher, learning management system, LMS, professional development*

## 1. Introduction

Until recently, when we heard the word training, training or upskilling, we would think of a

classroom where the lecturer lectures in front of students. In general, learning (training or training) is a process that requires a lot of time, resources and money. For large companies, conventional learning (e. g. on-the-job training) can be unprofitable and unsustainable, so many prefer methods that rely on e-learning. E-learning finds its basis in a dynamic environment and constantly changing trends, requires users and regulations that need to be constantly adapted. Given the circumstances, it is a challenge to organise conventional education for a large number of employees because it could disrupt the business routine. Therefore, e-learning is imposed as an adequate solution. E-Learning is a process that, in addition to *the* goal of improving the existing and acquiring new knowledge, does not have many points of contact with the traditional way of learning. Education in an online environment offers learning opportunities anytime, anywhere, on any device with Internet access. Consequently, today there are various systems to support learning in a virtual environment. These systems are designed in such a way that through courses they offer content that students, i. e. users, will adopt while having an insight into their activities and progress. Online learning or training has now become popular, especially at a time when online connectivity is more prevalent in-person dating. As companies, instructors and students see the benefits of virtual training, the eLearning market will continue to grow.

This paper will present the application of the Learning Management System. A theoretical basis on learning management systems as a problem solving tool will be offered. A survey of teachers will also be conducted to assess the current state of professional development, what shortcomings and advantages are present, as well as a way to improve the professional development of teachers.

## 2. Professional development of teachers

Although there are different definitions of professional development, Lauer et al. (2014) A number of authors have agreed that professional development refers to adult education, and is designed to contribute to positive changes in teacher beliefs, knowledge, skills or behaviour. Teaching as a professional act requires from teachers practical knowledge, conceptual understanding of education, but also the ability to interpret and form critical thinking about existing knowledge (Winch et al., 2015). In the era of education reforms, many see education and professional development of teachers as a key factor for improving education. (Hawley, Valli, 1999). According to Borko (2004), most training programmes offer fragmented and intellectually superficial seminars. The low quality of professional training prevents teachers from implementing new curricula and educational reforms in the right way. The need for lifelong learning and continuous professional development of teachers leads to the creation of new ways of professional development, so that all teachers have equal opportunities for professional growth and development. The overcrowded schedule of teachers, their obligations as well as the unavailability of all resources in certain geographical areas, stimulated the creation of an online environment for the professional development of teachers. On the other hand, the rapid development of technology as well as the COVID-19 pandemic has also accelerated the need for online training. Furthermore, online formats offer additional opportunities for individualised mentoring and support within online communities of practice, and the asynchronous, textual and dialogical character of online teaching has the potential to engage teachers in rich and constant thinking about their practice. (Dede et al., 2009; Borko et al., 2010). Professional training enables educators to upgrade their existing competences. In addition, they provide a wide range of interactive activities aimed at improving professional knowledge, contributing to their personal, emotional and social growth (Wasserman, Migdal, 2019). Kuka (2012) states that professional training takes place outside the formal education system. Their purpose is for students to acquire different knowledge and skills.

There are different types of online professional training, which are: synchronised, synchronised and hybrid online training. (Bates et al. . 2016)

- Synchronised online training takes place in real time. These are mostly distance education offered by universities in the form of webinars on a specific topic, as well as virtual training.
- Synchronised online training takes place at different times for different participants. These are mostly websites where teachers share their ideas with each other, as well as websites where external experts share their professional learning tools, videos and various resources. The main difference between asynchronised learning and synchronised learning is that the teacher chooses what, how, and when to learn.
- Hybrid online training includes courses or workshops that require virtual collaboration or the completion of other online tasks between sessions. These hybrid options can use synchronous or asynchronous online tools, depending on the specific goals of personal sessions.

One example of professional development in the digital environment is present on the eTwinning platform. This type of teacher training was started by the Agency for Mobility and EU Programmes, where teachers have the opportunity to participate in several days of online education on various topics. In the neighbouring Republic of Croatia, teachers are able to participate in the training of European Schoolnet. According to Klemše (2021), the Ministry of Science and Education of the Republic of Croatia conducted an experimental programme „School for Life“ by designing education in virtual classrooms using the Loomen platform. The education included 48 primary schools and 26 secondary schools, where teachers actively participated in training in virtual classrooms. Unfortunately, in Bosnia and Herzegovina, such a way of training has not yet been devised by the Ministry.

With the development of digital competences for learning and teaching, educators will more easily use online available sources, tools and applications for professional development and in everyday work and changing/improving pedagogi-



cal practices. CARNET developed a framework of digital competences for three groups of e-Schools users, in three dimensions, and developed them by areas and for the initial, intermediate and advanced level (CARNET, 2016)



Picture 1. Digital competence framework for e-School users

The OECD Education 2030 project identified three further categories of competencies, the so-called. “Transformative Competencies” which together address the growing need for young people to be innovative, responsible and aware.

1. Creating new values – to be ready for 2030, people need to think creatively, develop new products and services, new jobs, new processes and methods, new ways of thinking and living, new business models and new social models.

2. Reconciliation of tensions and dilemmas – to be ready for the future, individuals need to learn to think and act in a more integrated way, taking into account interconnections and interrelationships between contradictory or incompatible ideals, logic and position from both a short-term and a long-term perspective. In other words, they need to learn how to be systemic thinkers.

3. Taking responsibility – indicates a sense of responsibility, morality and intellectual maturity by which a person can think about and evaluate their actions in light of their experiences, personal and social goals, what they have learned and said, and what is right or wrong. Ethical conduct involves asking questions related to norms, values, meanings and limitations, such as: What should I do? Was I right to do that? What are the limits/limits? Knowing the consequences of what I did, should I have done it?

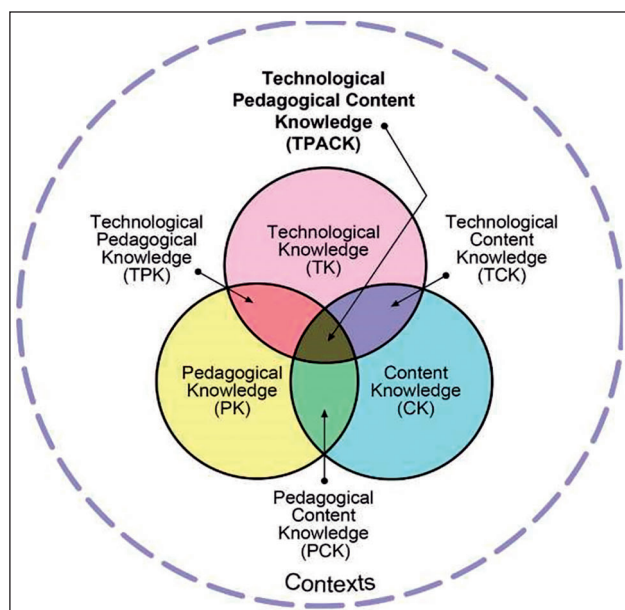
The Partnership for 21st Century skills is a collaborative organisation of government and enter-

prises that have defined a framework for developing skills, attitudes and preferences to succeed in the workplace and in society of the 21. century. They list three types of competences: (1) learning skills (creativity and innovation, critical thinking and problem solving, communication and cooperation), (2) literacy skills (information literacy, media literacy) and life skills (flexibility and adaptability, initiative, social and intercultural abilities, productivity and responsibility). (Tecnologico de Monterrey). To apply the components of the new education, Vengas and sar. (2021) Recommended to go beyond developing thinking in class, to computer thinking using robotics and programming and developing student skills through emotional management/management. Van Laar et. al. . (2017) provide a systematic overview of the correlation between the 21st century competence framework and the digital competence framework. Studies have described STEAM competencies that are being developed in the robotics laboratory. Although it is expected to develop competencies among students, it is still necessary to create models that will satisfy teachers and school management, and provide the necessary resources to strengthen educational institution. As stated by Van den Hurk et. al. (2019) In its theoretical model, there are three types of factors that can affect persistence in STEM learning, namely:

- environmental factors;
- school-level factors;
- factors at the student level.

Schools need to make better decisions to equip the environment for Gen Z pupils with a recreational, comfortable, sustainable and accessible space. Looking at all the trends in learning, it means that teachers must be able to integrate technology into their teaching. An approach that requires teaching is needed in terms of the interaction between what teachers know and how they apply what they know in interesting situations in their classroom. Modern learning requires 21st century skills that include communication and collaborative skills and the use of information technologies in learning. The development of learning through ICT<sup>1</sup> integration significantly contributes to the level of student pedagogical practice. Teachers are also required to possess IT literacy skills in teaching, with different methods and approaches in the classroom. Recent

research explains that the success of learning in the 21st century includes understanding of matter and content, teaching methods, and the integrated use of information technologies.



Picture 2. Koehler's technical - pedagogical - content framework

Koehler devised a technical-pedagogical-content framework abbreviated TPACK<sup>2</sup>, which builds on Shulman's idea of PCK<sup>3</sup> and attempts to capture some of the intrinsic qualities of knowledge needed by teachers to integrate technology into their teaching while also addressing the complex, multiple and situational nature of teacher knowledge. At the heart of the TPACK framework is a complex interaction of three basic forms of knowledge: Content - *Content* (CK), Pedagogy - *Pedagogy* (PK) and Technology - *Technology* (TK). (Koehler et al. 2014).

Pedagogy, curriculum, school rules and climate, assessments and skills acquisition are all key factors on which 21st century skills are developed and monitored. Classroom is the first environment that leads to the culmination of these factors that lead to the development and acquisition of skills. Also, classrooms are a place where students observe a model of these skills from their teachers. Therefore, it is equally important to prepare and train teachers not only in acquiring the skills for the 21st century, but also in disseminating those skills. Teachers of the 21st century need to take into account the needs of their students and prepare them with challenges in the future. The job of a teacher is considered de-

manding and complex. To create a quality professional teaching force, it is important to have a quality teacher training programme. The development programme shall include the use of integration technology in teaching.

### 3. Methodology

#### 1. Subject of research

The subject of the research is to improve the professional development of teachers through learning management systems. It is necessary to examine how familiar teachers are with digital professional development and how satisfied they are with the existing opportunities for digital professional development, and whether existing training contributes to their professional development.

#### 2. Research objective

The aim of the research is to determine how satisfied teachers are with the current professional development through a learning management system, and to identify specific areas in which the professional development of teachers can be improved through LMS. The aim will be to identify the problems faced by teachers who are professionally trained in the digital environment, to avoid these problems and to find ways and strategies for action in future professional development that will be in line with the opinions and needs of educational workers.

#### 3. Research Tasks

- Examine whether teachers are satisfied with the existing digital professional development opportunities
  - Examine whether existing trainings contribute to the professional development of teachers
  - Examine the possibilities of improving the professional development of teachers
  - Examine what are the challenges of online professional development that teachers encounter.
  - Examine and determine the forms of online professional development that respondents prefer.
- Thus, the aims of this research are set as:
- To examine if teachers prefer professional development in an online environment.
  - To determine if teachers need additional technical support and training to make better use of learning management systems.

- To examine if teachers need a greater choice of courses and resources covering different areas of teaching, pedagogical strategies and new technologies.

#### 4. Research methods

To improve the professional development of teachers through learning management systems, we can use a survey to help us collect information. In this study, the method of testing, the technique of interviewing, was used. The survey consists of two parts. The first part required data on the age and length of service of the subjects. The second part of the survey examined teachers' attitudes regarding professional development in the digital and physical environment.

Also, descriptive-analytical method was used, which was applied in the data collection phase, to, assess and compare, evaluate and interpret the data obtained in the process of analysis and drawing conclusions.

#### 4. Research results and disucssion

Table 1. Distribution of subjects by age

	Number of respondents	% of total respondents
25 - 30	11	22%
31 - 40	12	24%
41 – 50	15	30%
50 and up	12	24%
Total	50	100%

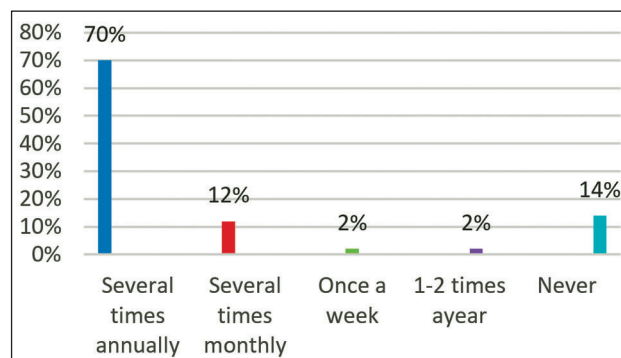
Of the 50 respondents, 11 (22%) are between 25-30 years old, 12 (24%) are between 31-40 years old, 15 (30%) are between 41-50 years old, and 12 (24%) are 50 years old and older.

Table 2. Distribution of respondents by length of service

	Number of respondents	% of total respondents
0 - 5	13	26%
6 – 10	4	8%
11 - 20	11	22%
20 and up	22	44%
Total	50	100%

Of the 50 respondents, 13 (26%) work for up to 5 years, 4 (8%) work for 6 to 10 years, 11 (22%)

work for 11 to 20 years, 22 (44%) work for 20 years and older.

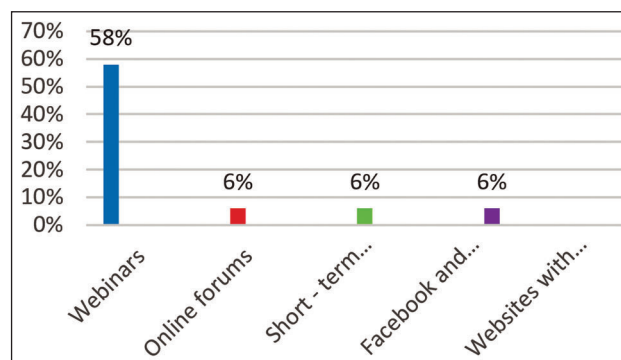


Graph 1. How often do you participate in an online training programme? (Online modules, webinars, virtual classrooms. . . )

Table 3. How often do you participate in an online training programme?

	Number of respondents	% of total respondents
Several times annually	35	70%
Several times monthly	6	12%
Once a week	1	2%
1 – 2 times a year	1	2%
Never	7	14%
Total	50	100%

When asked how often teachers participate in an online training programme, the largest number of respondents, 35 (70%) stated that they participate in online professional training several times a year, and 7 (14%) of respondents never participate in online professional training.



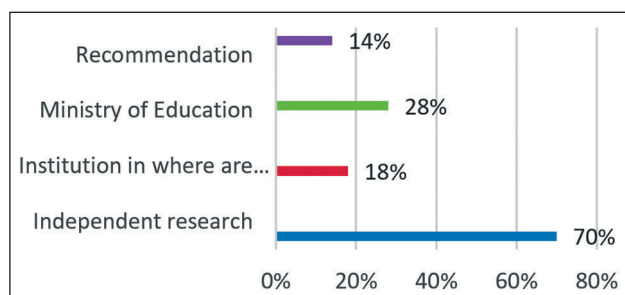
Graph 2. Which of the above online education have you most often attended?



Table 4. Which of the above online education have you most often attended?

	Number of respondents	% of total respondents
Webinars	29	58%
Online forums	3	6%
Short – time online courses	3	6%
Facebook groups and similar	3	6%
Websites with information which you can preview in time when suits you	11	22%
Total	50	100%

The largest number of respondents, 29 of them (58%) most often attend webinars as a form of online professional training, 11 respondents (22%) use websites with information that they can view at a time that suits them, while 3 respondents most often attend other forms of online education. It can be concluded from the enclosed that the largest number of teachers use webinars as a form of online professional development.



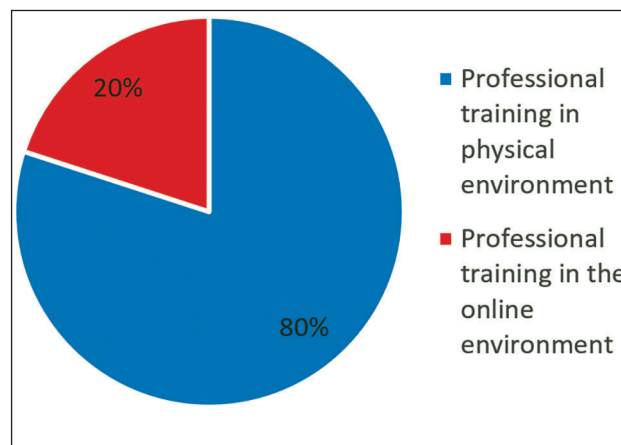
Graph 3. How did you get the information about maintenance of online professional training?

Table 5. How did you get the information about maintenance of online professional training?

	Number of respondents	% of total respondents
Independent research	35	70%
Institution in which you are employed	9	18%
Ministry of Education	14	28%
Recommendation	7	14%
Total	50	100%

When asked how teachers get information about online professional training, 35 (70%) of respon-

dents independently research online professional training, 14 (28%) learn through notifications to the Ministry of Education, 9 (18%) receive information from the institution where they are employed, and 7 (14%) of respondents find out information about certain online professional training on recommendation. Also, teachers do not have systemically organised professional training, but mostly through independent research and recommendations they learn about certain online education.

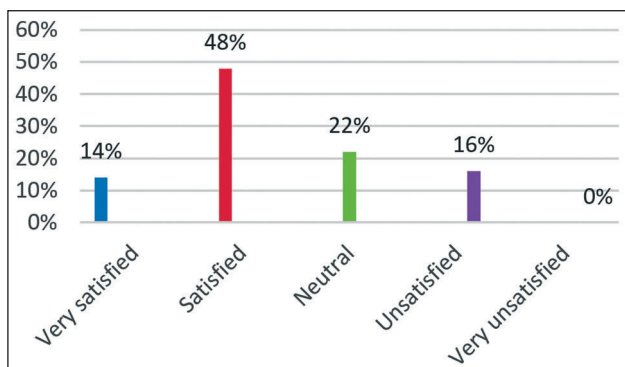


Graph 4. Which type of professional training do you prefer?

Table 6. Which type of professional training do you prefer?

	Number of respondents	% of total respondents
Professional training in a physical environment	40	80%
Professional training in the online environment	10	20%
Total	50	100%

Although a number of shortcomings in teacher training are listed, 40 (80%) of respondents prefer to choose professional training in a physical environment, while 10 (20%) prefer professional training in an online environment. From the above results, we can conclude that teachers prefer professional development in the online environment. The results show that 40 respondents, despite the shortcomings of professional training in the physical environment, still prefer to choose this type of professional training.

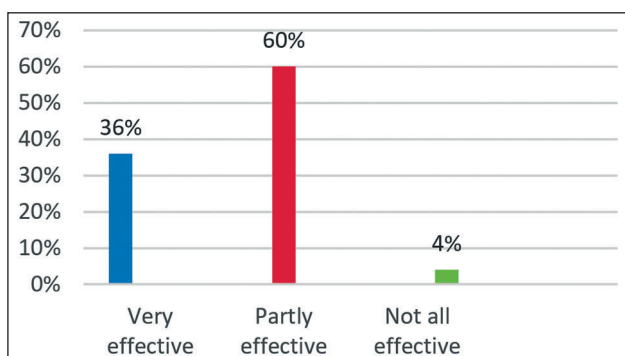


Graph 5. How satisfied are you with your professional development in a physical environment?

Table 7. How satisfied are you with your professional development in a physical environment?

	Number of respondents	% of total respondents
Very satisfied	7	14%
Satisfied	24	48%
Neutral	11	22%
Unsatisfied	8	16%
Very unsatisfied	0	0%
Total	50	100%

When asked how satisfied teachers are with professional development in a physical environment, 24 (48%) of respondents said that they are satisfied, 7 (14%) of respondents are very satisfied with professional development in a physical environment. Eleven (22%) respondents are neutral, while 8 (16%) respondents are not satisfied with professional development in a physical environment.

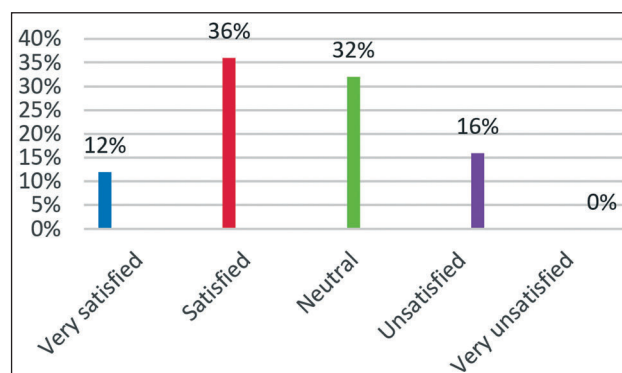


Graph 6. How effective do you think webinars, online workshops and other professional training are?

Table 8. How effective do you think webinars, online workshops and other professional training are?

	Number of respondents	% of total respondents
Very effective	18	36%
Partly effective	30	60%
Not all effective	2	4%
Total	50	100%

Most teachers think that online training is effective, 30 (60%) think that it is partly effective, 18 (36%) think that it is very effective, and 2 (4%) of respondents think that online professional training is not at all effective.

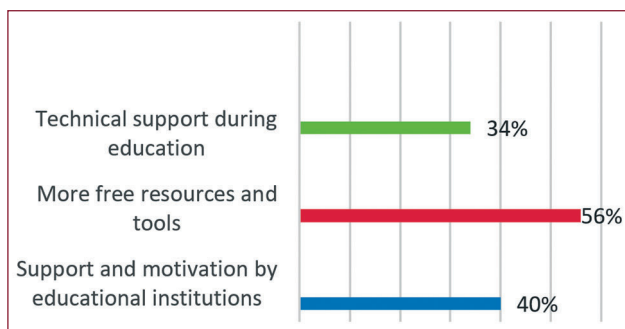


Graph 7. How satisfied are you with availability of online professional development?

Table 9. How satisfied are you with availability of online professional development?

	Number of respondents	% of total respondents
Very satisfied	6	12%
Satisfied	18	36%
Neutral	16	32%
Unsatisfied	8	16%
Very unsatisfied	2	4%
Total	50	100%

When asked how satisfied they are with the availability of online professional training, 6 (12%) are very satisfied, 18 (36%) respondents are satisfied, 16 (32%) respondents are neutral on this issue, 8 (16%) respondents are dissatisfied, and 2 (4%) respondents are very dissatisfied with the availability of this type of professional training.



Graph 8. What would encourage you to use more often online professional training?

Table 10. What would encourage you to use more often online professional training?

	Number of respondents	% of total respondents
Technical support during education	20	34%
More free resources and tools	28	56%
Support and motivation by educational institutions	17	40%
Total	50	100%

The largest number of respondents, 28 (56%) said that more free resources and tools would encourage them to use online professional training more frequently. Also, 20 (34%) of respondents believe that they need technical support during education, and 17 (34%) of respondents expect support and motivation from the educational institution.

This confirms that, more teachers need technical support during education, given that 40% of respondents think that they need this type of support to access professional training in the online environment.

The disadvantages of professional training in the physical environment cited by the respondents are as follows:

- „Large number of people, inadequate time“
- „Realisation distance, theorising“.
- „Too much talk, a little practical knowledge. . “
- „Inability to reconcile business or other previously agreed obligations with the term of training, too large a group of participants“
- “Inadequate preparation of the lecturer; disinterest of the teacher; most often the frontal form of work:“ „Time (duration, hourly rate), place (distance from the place of residence), very often

*non-compliance with working hours or misunderstanding of superiors“*

*„Always the same topics, just new educators. It’s been going around in circles for 18 years. All education is in vain, when you do not have support in the institution where you work.“ „Lack of concrete solutions. . “*

*“Small halls or classrooms, but also flexibility and adjustment of other teachers.“ „Not enough. What she has, I finance myself“*

*“Sometimes, non-creative lecturers do not present the content in the right way. . ,*

*„More creative examples, which we can apply. . “*

The main shortcomings of professional training in the physical environment are the inability to harmonise time and space with everyday obligations, as well as the lack of creativity by educators.

The most common challenges in online training are:

*“Lack of focus, insufficient commitment of both participants and lecturers”*

*“Internet connection. ”*

*“Practical part, show, experience”*

*”Good concentration requires a nice and pleasant environment, calm down, focus on what we do. . . and it is not always possible to have that at home if we follow online education. . . “The only advantage we have is that we participate from our own home. . ”*

*“Insufficient IT literacy of participants in which we include ourselves”*

*“Design educations that will meet the needs and interests of a wider audience; topics must be applicable, current and significant for professional development. ” “Many monologues. . ”*

*“I don’t think it’s a challenge at all”*

*“The quality of presentations and training, but also the possibility of active participation. The biggest challenge is to animate the auditorium. ”*

*“Acquiring new knowledge at your own pace”*

*“Online professional training is quite constructive, and can provide almost the same results as in the physical environment, and as for the challenges, there can be fears of poor internet connection and the like. . ”*

*“Problems with internet connection and inability to discuss quality. . ”*

*“Be clear and fun”*

*“Make a decision to get involved”*



The respondents' answers indicate that teachers still do not have sufficiently developed digital competences for the use of online resources, since the biggest challenge in online professional training is insufficient IT literacy. Also, one of the challenges is the inability to convey the real experience and the lack of focus during online education. All this points to the design of online education in a different way with the aim of improving the focus of participants, more accessible and interesting topics and educations in which participants will be active, not passive participants.

In order to improve and improve the professional development of teachers, respondents answered the following question. Which specific topics or areas would you like to be covered by online professional training?

*"Psychological topics, educational topics. . ."*

*"Practical working methods"*

*"IT training. "*

*"Education for a new time, working with gifted children, how to improve the concentration of students. "* *"Specific forms of work. . ."*

*"Working with parents and class community, experiments in teaching, "*

*"Any area that is not based on the platitudes of lecturers who conceal unpreparedness"*

*"Areas of working with children from the autistic spectrum, but also socialisation of children coming from socially vulnerable families, and recognition of selective mutism in children. "* *"Examples from practice and coping with today's conditions. "* *"Family. . ."*

*"Integrated teaching, teaching based on defined learning outcomes, school of the 21st century. ( education and training). "*

*"Education in the broadest sense (support, examples of practices. . . ), media and financial literacy"* *"New learning methods, examples of good practice. . ."*

*"Practical training, free tools"*

*"Introduction to techniques and tools suitable for teaching. "*

*"Modern teaching methods and techniques, strengthening teacher competencies for the 21st century"*

*"Reading with understanding, working with children with problems of reading, writing, computing. . ."*

*"Evaluation, multimedia in teaching. "*

*"How to motivate students"*

*"In general, everything is interesting and welcome that is related to the teaching process, but with practical examples without a dominant theory"*

*"Working with children with disabilities, concrete tips and examples"*

How would you improve the professional development of teachers in order to better meet your needs?

*"By organising quality workshops where you can hear something new (mostly the same lecturers, other topics, nothing new teachers do not learn). "*

*"Lectures and concrete demonstrations of individual methods of work"*

*"More different options according to your own interest, bring better-known educators".*

*"To be specifically related to the topics and contents of the class in which I work, best in August and January. "*

*"Every training must have a decisive goal and outcomes as good teachers do in the teaching process. In addition, the best among the participants was the exchange of experiences. There's a lot of people in the class who've been working since '93, '94, . . . we've been listening to training and really good things. "*

*"To organise various educations, workshops and other activities for teachers during the month of August before the beginning of the school year"*

*"First to improve the status of teachers in society"*

*"Workshops, conversations, exchange of experiences. "*

*"Better interaction between lecturers and teachers".*

*"Any professional training with a clear goal and good preparation of the lecturer meets my needs. I'm not a fan of professional training whose only goal is "to organise something. " "*

*"Specific situations(- problem-solution). "*

*"Educate in schools"*

*"Practical training and free tools"*

*"Technical support in the institution where I work Means, we do not have a copy machine, printer, wifi, paper I buy, no matter what is needed"*

*"As many seminars and as much understanding as possible by the parents"*

“Higher quality educators from abroad, more modern topics and active participation of all present.”

“Do not limit the time for online learning. In a physical environment: Ready (competent) realizers focused exclusively on the realisation of topics with as many concrete examples as possible. Throw out redundant activities (familiarisation and the like), which only serves to fill the training time.” “Make them easily accessible. . .”

“Adapt the contents of the same to the needs of teaching”

“More frequent education with concrete examples, experience from practice”

In order to improve and improve the professional development of teachers, respondents' answers were singled out on what is needed for professional training to meet their needs in educational work and what topics they would like to cover during professional training. It can be concluded that teachers want to modernise the way of professional development, primarily from the topics offered, the way of presentation by educators, and then the existence of greater opportunities for online learning. This confirms that teachers need a greater choice of courses and resources covering different areas of teaching, pedagogical strategies and new technologies. The need for easier access to the content of professional training is also required, which can be achieved through the use of certain learning systems. Teachers believe that the topics that are currently represented in the course of professional training contain a lack of concrete and practical examples. It also mentions the constant repetition of the same topics, which do not contribute to solving the problems that teachers face in educational work.

## 5. Conclusion

The aim of this research was to point out the need to improve and modernise professional training for educational workers through learning management systems. The results showed that a larger number of teachers believe that insufficient creativity, lack of practical and concrete solutions reduce the efficiency of professional development. It is also an underdeveloped computer

Literacy prevents teachers from using online forms of education more often. The results show

that teachers, through independent research, come to information about the organisation of certain professional training, which indicates the need for better promotion of professional training by the Ministry, as well as educational institutions. It is necessary to improve the ways of professional training to make teachers more positively orientated to online education, since in this way they can exchange experiences and practices with educational workers from other countries.

The conducted research is of a smaller scale, with a smaller sample of respondents. The obtained results indicate that teachers need more technical support when using online education, but also the need for more creative, concrete topics, which will facilitate the educational work of teachers. A concrete training plan for teachers in line with current educational reforms would facilitate teacher training. Designing concrete online virtual classrooms that will be accessible and that will allow teachers to have access to the materials even after training. Results of the research obtained,

They point out that it is necessary to work on further training of teachers, especially in the development of digital competencies, all with the aim of improving the educational process and successful implementation of educational reform. In order for this type of professional development to be realised in practice, teachers should be provided with the opportunity to master the ways of online education, explain the use of the learning management system and provide an adequate incentive.

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Coresponding Author  
 Nejra Hadzic - Krnic,  
 University of Sarajevo,  
 Faculty of Educational Science,  
 Sarajevo,  
 Bosnia and Hercegovina,  
 E-mail: [hadzicnejra@gmail.com](mailto:hadzicnejra@gmail.com)



# Preparing the Camera Ready Paper for TTEM Journal

First Author<sup>1</sup>, Second Author<sup>2</sup>, Third Author<sup>3</sup>

<sup>1</sup> First affiliation, City, Country,

<sup>2</sup> Second affiliation, City, Country,

<sup>3</sup> Third affiliation, City, Country.

## Abstract

In this paper are given the instructions for preparing camera ready paper for the TTEM Journal. The recommended, but not limited text processor is Microsoft Word (docx). Insert an abstract of 150-200 words, giving a brief account of the most relevant aspects of the paper. It is recommended to use up to 5 keywords. The Keyword should appear on the new line following the last line of the abstract, without a line space, set in Times New Roman 10pt.

**Keywords:** *Article, ready paper, TTEM Journal.*

## 1. Introduction

In order to affect high quality of the papers, the authors are requested to follow instructions given in this sample paper.

Title page - Every article has to have a title page with a title of no more than 10 words: name (s), last and first of the author (s), name of the institution the author(s) belongs to, abstract, keywords, introduction, etc.

The paper has to be typed on a standard size paper (format A4). All materials, including tables and references, have to be typed single-spaced. Main text should be set in 11 pt Times Roman, not in bold. All of the text should be printed as a double column and JUSTIFIED throughout.

Regular length of the papers up to 12 pages, (preferred text length is between 5000-7000 words). Footnote-comments, explanations, etc., cannot be used in the paper. Where cannot be avoid end noted should be used after conclusion with given numbers in a squared bracket [1].

## 2. Instructions for the authors

Main text body - Times New Roman 12 point's font should be used for the text. The manuscript has to be prepared in two columns separated by 5 mm. The margins for A4 (210×297 mm<sup>2</sup>) paper are given in Table 1.

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Sections can be split in subsections, which should be typed in 10 pt *Italic* options. Figures should be one column wide. If it is impossible to place the figure in one column, two column width figure is allowed. Each figure must have a caption under the figure. For the figure captions 10 pt font should be used.

### 2.1. Tables and Pictures

Tables have to be numbered and shown by their order, so they can be understood without having to read the paper. Pictures also have to be numbered as they appear in text. All illustrations (pictures, drawings, diagrams, photos, figures etc.) have to be original. Authors are obligated to take Copyright permission, and any misunderstanding or conflict of interest will be responsibility solely of Author. Preferably the picture format is TIF, quality 300 DPI.

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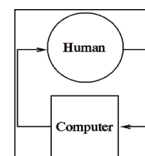


Figure 1. Text here (2018)

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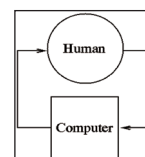


Figure 2. Text here (Esmer, 2018)

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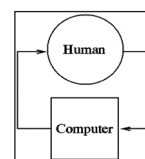


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### 3. Use of abbreviations

Use of abbreviations has to be reduced to minimum. Conventional units can be used without their definitions.

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Be brief and state the most important conclusions from your paper. Do not use equations and figures here.

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References inside text body should be written as follows:

Single author: (Stewart, 2022)

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e.g. Kudumovic, Dž. (2009), *Nauka o čvrstoći I*, Univerzitet u Tuzli, Tuzla, Bosna i Hercegovina.

For book chapters: Surname, initials (year), "chapter title", editor's surname, initials (Ed.), title of book, publisher, place of publication, page numbers.

e.g. Kudumovic, L. (2018), "20th Century's Heritage of Bosnia and Herzegovina as an Integrated Part of Cultural Routes-Authentic Bosnia and Herzegovina Case Study: Mining town Banovici", Pasic, A., Juvanec, B. and Moro, J.L. (Ed.s), *The Importance of Place Values and Building Practice in the Historic Urban Landscape*, Cambridge Scholars Publishing, UK, pp.91-105.

#### - For journals

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e.g. Kudumovic, Dž., Cosic, S., Trakic, E. and Kudumovic, L. (2008). "Modelation And Optimisation Of Self Operating Pump Parameters", *Technics Technologies Education Management*, Vol.3 No. 2, pp. 51-56.

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Surname, initials (year of publication), "title of paper", in editor's surname, initials (Ed.), title of published proceeding which may include place and date(s) held, publisher, place of publication, page numbers.

e.g. Wilde, S. and Cox, C. (2008), "Principal factors contributing to the competitiveness of tourism destinations at varying stages of development", in Richardson, S., Fredline, L., Patiar A. and Ternel, M. (Ed.s), *CAUTHE 2008: Where the 'bloody hell' are we?*, Griffith University, Gold Coast, Qld, pp.115-118.

#### -Adding http and DOI

Where possible add after reference http or DOI For any http add also accessed date. Eg.

Zhu, G. and Yu, G. (2020), "Apine apple flavor imitation by the not method", *Food Science and Technology*, Vol. 40 No.4, pp. 924-928. Available at: <https://doi.org/10.1590/fst.26019> (accessed 20 October 2022)

Zhu, G. and Xiao, Z. (2017), "Creation and imitation of a milk flavour", *Food & Function*, Vol. 8, pp. 1080-1084. DOI: 10.1039/c7fo00034k

#### - For encyclopedia entries (with no author or editor)

Title of encyclopedia (year), "title of entry", volume, edition, title of encyclopaedia, publisher, place of publication, page numbers.

e.g. Encyclopedia Britannica (1926), "Psychology of culture contact", Vol. 1, 13th ed., Encyclopedia Britannica, London and New York, NY, pp.765-771.

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*Corresponding Author*

*Name Surname*

*Affiliation*

*City, Country*

*E-mail:*

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