FROM PASSIVE TO IMMERSIVE: METAVERSE AS A PEDAGOGICAL APPROACH IN HISTORY CLASS - PRESENTING A CONSTANT REMINDER OF HISTORICAL REMNANTS AND A CUSTOMIZABLE REALITY FOR FUTURE PREFERENCES; BEIRUT AS A CASE STUDY

HIBA MOHSEN
Faculty of Architecture—Design and Built Environment, Beirut Arab University, Lebanon, h.mohsen@bau.edu.lb

MOHAMAD TOHME
Faculty of Architecture—Design and Built Environment, Beirut Arab University, Lebanon, m.tohme@bau.edu.lb

RAWAN NASHI
Faculty of Architecture—Design and Built Environment, Beirut Arab University, Lebanon, rawannashi2002@gmail.com

Follow this and additional works at: https://digitalcommons.bau.edu.lb/apj

Part of the Architecture Commons, Arts and Humanities Commons, Education Commons, and the Engineering Commons

Recommended Citation
MOHSEN, HIBA; TOHME, MOHAMAD; and NASHI, RAWAN (2023) "FROM PASSIVE TO IMMERSIVE: METAVERSE AS A PEDAGOGICAL APPROACH IN HISTORY CLASS - PRESENTING A CONSTANT REMINDER OF HISTORICAL REMNANTS AND A CUSTOMIZABLE REALITY FOR FUTURE PREFERENCES; BEIRUT AS A CASE STUDY," Architecture and Planning Journal (APJ): Vol. 28: Iss. 3, Article 38.
DOI: https://doi.org/10.54729/2789-8547.1233
FROM PASSIVE TO IMMERSIVE: METAVERSE AS A PEDAGOGICAL APPROACH IN HISTORY CLASS - PRESENTING A CONSTANT REMINDER OF HISTORICAL REMNANTS AND A CUSTOMIZABLE REALITY FOR FUTURE PREFERENCES; BEIRUT AS A CASE STUDY

Abstract

It is widely acknowledged that passive, non-immersive strategies of teaching adopted in history classes in Lebanon do not offer the right platform for knowledge retention in students. With that said, virtual reality and the use of Metaverse as a pedagogical approach is prophesied as the most apt to invoke a positive attitude from children towards the topic being studied, and thus, in this case, it increases their awareness of the existing built heritage they live amidst. This research sets out from a recent project implemented by Beirut Arab University, together with three UN agencies. The latter aimed for “developing children emotional attachment to the territory of Beirut Blast through activating their participation in the construction of cognitive maps by playing with spatial maps strategically designed in a game environment”. A thorough assessment of the outcomes of the activities implemented throughout the project, including the executed physical models and game boards that simulate myriad neighborhoods in Beirut, is carried out, followed by an analytical comparison of these outcomes with those from using the proposed innovative digital tools. A pilot study is conducted on Martyr’s square to assess how virtual tools can enhance the sensory experience and perception of the built space, making youth active learners rather than passive. It illustrates how introducing children to educating architecture from a young age not only nurtures their awareness of their local neighborhoods, but also generates responsible citizens. The outcome of this study can be divided over a timeline of past, present, and future. The virtual recreation of old Beirut aims to enhance the virtual learning experience as opposed to that from books and chalkboards. Children are expected to formulate a better understanding of their heritage, become more attached to the remnants of the latter, and set out to customize the reality to their preferences or vision of how a better, sustainable Beirut looks like.

Keywords


This article is available in Architecture and Planning Journal (APJ): https://digitalcommons.bau.edu.lb/apj/vol28/iss3/38
FROM PASSIVE TO IMMERSIVE: METAVERSE AS A PEDAGOGICAL APPROACH IN HISTORY CLASS
PRESENTING A CONSTANT REMINDER OF HISTORICAL REMNANTS AND A CUSTOMIZABLE REALITY FOR FUTURE PREFERENCES - BEIRUT AS A CASE STUDY

HIBA MOHSEN, MOHAMAD TOHME, AND RAWAN NASHI
Faculty of Architecture - Design and Built Environment, Beirut Arab University, Lebanon
h.mohsen@bau.edu.lb
m.tohme@bau.edu.lb
rawannashi2002@gmail.com

ABSTRACT
It is widely acknowledged that passive, non-immersive strategies of teaching adopted in history classes in Lebanon do not offer the right platform for knowledge retention in students. With that said, virtual reality and the use of Metaverse as a pedagogical approach is prophesied as the most apt to invoke a positive attitude from children towards the topic being studied, and thus, in this case, it increases their awareness of the existing built heritage they live amidst. This research sets out from a recent project implemented by Beirut Arab University, together with three UN agencies. The latter aimed for “developing children emotional attachment to the territory of Beirut Blast through activating their participation in the construction of cognitive maps by playing with spatial maps strategically designed in a game environment”. A thorough assessment of the outcomes of the activities implemented throughout the project, including the executed physical models and game boards that simulate myriad neighborhoods in Beirut, is carried out, followed by an analytical comparison of these outcomes with those from using the proposed innovative digital tools. A pilot study is conducted on Martyr’s square to assess how virtual tools can enhance the sensory experience and perception of the built space, making youth active learners rather than passive. It illustrates how introducing children to educating architecture from a young age not only nurtures their awareness of their local neighborhoods, but also generates responsible citizens. The outcome of this study can be divided over a timeline of past, present, and future. The virtual recreation of old Beirut aims to enhance the virtual learning experience as opposed to that from books and chalkboards. Children are expected to formulate a better understanding of their heritage, become more attached to the remnants of the latter, and set out to customize the reality to their preferences or vision of how a better, sustainable Beirut looks like.

Keywords: Metaverse, Pedagogy, History, Heritage, Beirut.
1. INTRODUCTION

Every single event that has led up to the present day gradually builds, brick upon brick, the people and the culture that currently exist. Just like past ancestors enrich their history, in return the history itself enriches the generations to come. With that said, Lebanon, the land that has been traversed by myriad cultures, momentous events, and significant periods, bares a profound historical background worth imparting. The latter entails stories that date back to the Canaanites, Phoenicians, and Romans, all the way to the Mamluks, Ottomans, and the French mandate. The timeline of the country intersected with several eras, leaving a trace of heritage and monuments that formulate footprints, each one of the latter connecting to the other to form a timeline of events, of which disclosing has become an obligation. (Barnett and Ochsenwald, 2022).

This paper tackles the effect of rebuilding Beirut in history classes, not as a bombardment of information, but as an immersive, non-passive environment. For that, the results of a project were Beirut was recreated in the form of 3D models were analyzed. The success of the latter allows for a theoretical assumption: the use of Metaverse (immersive 3D realities) as a pedagogy to educate children on their history will render positive results. A child’s ability to understand heritage, make the necessary decisions in the present, and create the “better” future is assessed.

2. BACKGROUND: CULTURAL HERITAGE, HISTORICAL AND CIVIC EDUCATION

There must exist a strong relationship between this cultural heritage and historical and civic education. Historical teachings should perform their “civic and moral functions” (Peters, 2008), by formulating a collective memory of these past events and passing them on to the younger generations, molding them into the responsible citizens they ought to be. The importance of these teachings lies in three different categories: on the level of the self and the others, on the level of the nation, and on the heritage level.

2.1. The Self and its Relations to the Others:

In each community, there is a certain culture that must be studied to identify what makes them Lebanese at core. Such a search for identity requires an understanding of self as well as of the other. The former brings the myriad divisions of a nation as small as Beirut to meet a certain standard of acceptance and perspective, indispensable for the coexistence of these groups. For the difficulty of targeting the adults whose viewpoints are built hardcore into their belief system, it is only logical that these classes are to be specifically introduced to the younger generations, molding them into the responsible citizens they ought to be. The preceding actions will therefore affect the community as a whole, and the positive effects will be prevalent on a national scale.

2.2. The Nation

Understanding that there exists a history shared by the nation, in both its treacheries and success, its wars and prosperities, would contribute to forming the identity by which this nation identifies. Identity, by definition, is an intersectional self-recognition by one-self of certain characteristics that attributed to him/her with the recognition by a second party of the same characteristics, and thus, when a group of Lebanese people believe that certain attributes belong to them and disclose this unified vision so that others believe likewise, the two parties together create the identity of the country. In addition, teaching history should be presented in critical and analytical frameworks so that students think beyond their current frame of reference and drift away from present-day conceptions.
2.3. Heritage

Hundreds and thousands of years of different cultures traversing the land have left behind monuments and historical buildings worth preserving, like the Roman Baths, Martyr’s Square, Beirut Souks, and Gemmayzeh Street. What is left of Berytus in the form of Beirut can only be preserved if the coming generations are aware of the vitality of the conservation of these buildings and the stories their walls disclose, and thus, this requires a cooperation in the preservation of part of what makes up the Lebanese identity.

3. MATERIALS AND METHODS

This study employs several tools and techniques to fulfill the research objectives. An in-depth analysis was first conducted to identify the levels of teaching history linking the way of teaching with the memory of the students and the cultivation of critical and analytical skills. Moreover, the outcome of the activities of the project entitled “Youth-led rehabilitation efforts to support local communities affected by the Beirut blast”, implemented by BAU Urban Lab in partnership with UNESCO, UNFPA, and UNODC Offices in Lebanon to develop children’s emotional attachment to the territory of Beirut Blast, were used as an application methodology in this study. Considering the lack of database of the barely standing and demolished historical buildings in Lebanon post-explosion period, including drawings such as plans and elevations, we used in this research old and existing photos to create the 3D physicals and virtual models. Martyrs Square is finally taken as a pilot study to apply 3D virtual tools.

4. DEVELOPMENT OF TEACHING HISTORY

4.1. Tell Them and They’ll Forget…

“I’ve memorized a myriad of historical data, causes, and effects then wrote them down on exam paper in order to get the “good” grade.” -Zeena Amkieh-

It is quite futile to take an initiative in critiquing the history material lectured from the textbooks. The content provides coverage for a wide range of topics, from different periods of time. However, it does not provide the framework for analytical or critical thinking.

A typical history class setting consists of a teacher reading from a textbook and explaining the content in a structured, organized manner as to depict the sequence of events in a comprehensible, easy-to-grasp method (Figure 1). The information retained, however, is most apt to be a short-term, temporary memory of the content. Students have become “passive” memorizers and no skills are cultivated or constructed in this process of learning. (Amkieh, 2015).

![Fig.1: discloses the flow of information in a typical classroom setting.](image)

Most of the information is discarded as it is rarely used in our daily lives. Retaining this information remains important until the day of the exam. (The Author).
4.2. Show Them and They May Remember…

More developed countries have presented history classes and lessons as an instructional model that turns the students into active learners, capable of resolving any form of historical inquiry, and relating events and settings in a visual timeframe and setting (Figure 2). This pedagogy followed promotes the importance of citizenship and the participation in decision-making processes. These skills are inevitably indispensable, specifically in Lebanon where involvement in the community and social cohesion are notions that must be enhanced. Some schools that are monetarily capable have started taking individual acts to better advance the teaching systems apart from any governmental decisions or imposed obligations. A number of them are now equipped with LCD projectors that are used to display documentaries and visuals from various media platforms, precisely YouTube. These movies allow a better comprehension of the setting and the succession of events that have befallen in the past.

However, COVID-19 has accelerated the necessity of transforming any 2D learning environment to one that lies way beyond watching YouTube videos. Online learning became a mainstream as attendance-based classes were disrupted in the break of the pandemic. The 2D environment could have been either synchronous or asynchronous. A synchronous learning environment requires the instructor and the receiver to both be on display simultaneously via web conferencing platforms like Zoom, Microsoft Teams, WebEx, and Skype. An asynchronous learning environment is implemented through learning management systems, LMS, via platforms like Moodle and Blackboard. Contrary to synchronous e-learning, this does not require both parties to be present concurrently (Synchronous and Asynchronous Learning, 2021). Although online-based learning was merely an adaptation strategy to a grim reality, it reverberates myriad repercussions and limitations (Tamm, 2022):

- The overuse or extended use of synchronous web-based platforms will stretch their limitations and inefficiencies, often revealing the inadequacies of these means of communication as lag and fatigue take over the latter.
- Most of the developing countries are not qualified for internet-based learning as the electricity is still not supplied 24/7 and glitches every now and then when it is available. Similarly, the internet is not stable on the scale of the country as a whole.
- Online-learning does not help in comprehending the emotional stress a student might be going through, and thus the way a student is addressed does not always hit the right strings. This delays knowledge retention or sometimes hinders it.
- Students are troubled with a low perception of their other classmates or of their relation with those with whom communication had been once natural.
- Distractions and losing focus become a norm when information is confined to a mere screen.

A new pedagogy, using the Metaverse, can resolve the dilemmas mentioned above.

![Diagram of the flow of information in a typical classroom setting that has incorporated a more analytical and critical approach that develops the skills of its students.](Fig.2)
4.3. Involve Them and They’ll Learn…

Extended reality is the umbrella beneath which lies augmented reality (AR), virtual reality (VR), and mixed reality (MR). It is the combination between the physical reality (human) and a virtual reality (computer generated graphics), and the resultant human-machine interaction (CARVALHO et. al, 2020).

VR is a synthetic, completely separate digital world. The user is utterly teleported to a world that is distinct from the physical reality using VR headsets, omnidirectional treadmills, and immersion helmets. This experience can be intensified by making it multisensory, targeting sound, sight, touch and any interaction with the virtually created objects.

AR uses a different approach. It embodies virtual objects, directions, or even information into the real world. This is the literal meaning of combining the virtual and the physical worlds. The result is a transparent layer of a number of virtual artifacts overlapping reality. This process is achieved through tablets, contact lenses, phones, glasses, or even VR headsets (Virtual Reality, 2022).

MR combines between elements of VR and AR (Figure 3). It enables the user interaction with both elements from VR and from AR. For instance, a virtual avatar or character presented by the MR facets and hardware would be able to recognize the physical world surroundings and react accordingly, sitting on a real-world chair to waving to someone passing by.

Fig.3: displays the branches of extended reality on a scale that defines the physicality and virtuality of each one with respect to the other, (The Author).

Metaverse is still in the prototype stage, and yet, it was capable of harnessing itself some significant notoriety. The Metaverse provides an immersive, interactive experience in a virtual, connected world. It is an incessant multiuser environment that relies on developing technologies, like VR and AR that allow a multisensory interaction with a virtual environment and all that it contains from objects to people or avatars. Similar to the “Internet” or the “Web”, there is only one “Metaverse”. It describes a complete interconnected web of immersive environments that are available on a multitude of multiuser platforms (Speicher et. al, 2019).

The main purposes for using VR in education which is location-based such as in classrooms and labs are as follows (Kundalakesi, et. al, 2017):

- The hardware allows the students to be involved in practices that are not readily available for them to rehearse such as piloting an airplane, driving a car, conducting surgeries, or even imitating ancient cultures and their lifestyles in history classes.
- This technology helps recreate an inconvenient situation such as the Lebanese Civil War where students can understand the gravity of the realities their parents had to endure. Using the VR, students can be taken on field trips that are considered quite impossible, such as visiting the current remnants of the Greek or Roman civilizations.

The level of immersion presented by the VR technology varies on four stages:

- The first stage is using VR to create a multimodal 360-degree YouTube VR.
- The second stage allows students to have an impact on the flow of the virtual display.
More autonomy is achieved in the third stage where they can navigate the Virtual world in a manner like navigating Google Earth VR.

The most immersive state is where students feel like they are actually present in the virtual world through a complete multisensory experience (Figure 4).

Pertaining to the aptitudes of the Metaverse in capturing 360-degree panoramic view or volumetric spherical videos, it can allow an entire mass of students to be educated about a certain era or culture and provide complete immersion in the events that occurred then. Moreover, new implementations and prophesies for the Metaverse in e-learning transcend that of 2D e-learning. Students hold one of the greatest impacts on the virtual curricula, personalizing it, and taking advantage of the hybrid learning experience where they are not limited to the interaction with a screen, but rather can see an entire hologram or representative avatar of a real-time figure (Mystakidis, 2022).

![Flowchart](Fig.4)

**Fig.4:** discloses the flow of information when VR compensates for the information lost after a critical, analytical teaching class. The sensory experience helps retain a wider scale of comprehension, (The Author).

## 5. APPLICATION OF IMMERSIVE TECHNIQUES IN THE CASE OF BEIRUT CITY

### 5.1. From 2D to 3D Using Physical Models

The explosion in Beirut, ranked as the sixth most destructive accidental and non-nuclear man-made explosion to be adopted by history. It scarred not only the city in its buildings and infrastructure, but also in its people. The project targets the population that has been mildly affected by the Beirut blast. It was carried out on three stages: inviting children to test the game boards in BAU, participate in activities arranged in Karantina neighborhood, and attend a miniature exhibition of Beirut in St Nicholas Stairs at Gemmayzeh neighborhood. This initiative thus offers an alternative for the 2D pictures and images of the pre-explosion state of Beirut neighborhoods by presenting them to the participants as part of a miniature of Beirut and giving them the opportunity to design their own neighborhood.

#### 5.1.1. Preparatory Procedures

The staff of the Beirut Arab University, in cooperation with its students, employed their technical, creative, and communication skills in BAU Urban Lab in order to achieve results that comply with the main initiative of the project (Figure 5). The props designed include a large-scale physical model (1/800) of the region affected by the blast, close-up models of some landmark architectural buildings present in the miniature model of Beirut, along with their representative QR codes, and the game boards that enhance the engagement of children.
5.1.2. Miniature Model

Through a process that transitions from brainstorming to conceptual thinking to synthesizing an adequate visual presentation, a cognitive map of the city was drawn in the form of a large-scale model that contributes in registering the cognitive abilities of the participating children. The softscape adhering to the buildings map the greenery present in the real world. This serves to make the children more aware of the natural environment in their capital city. Nevertheless, the high-level of compatibility of this model with the real world allows the passers-by to identify what they see with the image of the neighborhood they have already registered in their minds.

5.1.3. Close-up Models

Some buildings are marked in the large-scale model and further brought to life using intricate details, balustrades, and facades that were mapped, printed, and then assembled into a realistic miniature of the real building (Figure 6). These models are endorsed with QR codes that direct the users to a site disclosing the historical and cultural values of the building modelled, by presenting the series of events and the architectural aspects that render it worth preserving.
5.1.4. Game Boards

Finally, after the children have explored the image of pre-explosion and accumulated within themselves feelings of nostalgia, the team decided to create a plan that engages the children in creating the image of their city and thus, turning them into active citizens that take part in communal decisions. The idea of the game board was then created, as close as a physical 3D could adhere to a 3D virtual model. The game board includes unassembled pieces of a city that are flexible in their assembly and allow for myriad variations of neighborhoods to match the preference of different children. These pieces include buildings, roads, and vegetation, as well as coloring tools and glue.

Unfortunately, the pandemic hindered the possibility of holding several activities and events. These were then compensated with a virtual application of the procedure and concluded with a video that sums up the results of the myriad neighborhoods created by the imaginations and the preferences of each child alone.

5.1.5. Webinar

In an attempt to train teachers of Art, Geography, and Civic engagement on the importance of educating architecture at early ages, as well as how to use the newly designed maps and models as a new pedagogical method that integrates spatial thinking, an online event was held with a total of 225 attendees participating in this capacity building workshop.

5.1.6. Beirut Arab University Workshops

Children were invited to a tour in the faculty Lab where they explored previously executed models. They were then taken to the Model Making Lab where the game boards were distributed and tested for the first time. Children were also walked through the process of creating a large-scale model, and they helped allocate some of the buildings on the map. Finally, a huge roll sheet was laid on the floor outdoors where students, hand in hand, drew what they imagined their city of preference would look like. The result was a large rolled-up sheet of all the parks, entertainment areas, and activities children were deprived of in Lebanon.
5.1.7. The Karantina Neighborhood Workshop

The Karantina neighborhood, one of the settings that were severely damaged by the explosion, held the second workshop for face-to-face interactions. Karantina is one of the low-income marginalized neighborhoods that is in proximity to the location of the explosion. Thirty children attended the workshop, explored the large-scale model created of the affected regions of Beirut, and set off creating a neighborhood of their own design using the game boards prepared by the students and staff of Beirut Arab University. The game board pedagogy was presented as a successful means for children to explain the experiences they lack without having to express in speech.

5.1.8 Beirut Miniature Model Art Exhibition to Introduce Cultural Heritage to Children

The exhibition that took place in Gemmayzeh aims to present the 3d physical models of particular historical neighborhoods in Beirut brought together by the staff and students at Beirut Arab University. It concludes the project with a 3-day event summing up and celebrating the different activities and outcomes obtained. School teachers, children, parents, university students, and reporters were attracted to the exhibition, exploring nooks and crannies of the large-scale physical model and the close-up models of the most important heritage buildings. People enjoyed the ornamentations on façades, balustrades and arabesque patterns, domes and minarets. The depth of the generated physical models made them easily identifiable and profoundly captivating. Further information can be gained by scanning the QR codes of the larger scale buildings where people can learn and read more about the history of the building, its cultural and historical values, and the importance of conserving it.

5.2. From 3d Physical to 3d Virtual

Martyr’s square or “Sahat el Chouhada” has witnessed myriad disruptions over the years, transforming it to one of the main public spaces of downtown Beirut. It is now deemed as the “heart” of the city.

The experiment carried out aims to study the engagement of students with a virtual world of Martyrs’ Square created using physical data that can be obtained from the site and its history. Three important settings are chosen to summarize the timeline of events, to bring the students to visualize and live the era in its every aspect. The first is a simulation of year 1950, which gathers the accumulating events from the very initiation point until the demolition of the Little Saray. The second setting is defined as the period after the demolition and the resultant construction of cinema Rivoli. The final setting is the current state of the square and the effects of the revolution on how this public space is used. The significance of these dates will be discussed in direct relation to the set of events from which they are extracted.

5.2.1. Martyr’s Square as a pilot study

- Before 1950: Martyr’s Square, a Symbol of Independence

Beirut occupying a strategic location on the Mediterranean Sea, has always been a point of interest of all the adjacent and distant civilizations since it first existed in 2800BC. Martyr’s square emerged from the gardens of a palace. It went by “Square of the Canons” and “Hamidiye’s square” before it became a symbol of revolution and public expression in what became known as the “Martyr’s Square” in 1916. In 1888, the governor took position in the Little Saray. By the end of the French mandate, the square became a symbol of independence in 1943 and would host the National Independence celebrations. The Little Saray was later destroyed in the year 1950, with the intention of
opening up the square to the sea. The eclectic building, however, was then replaced with the Regent Hotel and Rivola Cinema.

However, using the Metaverse, the children will not only be introduced to the factual background of the time period. They will be able to walk through the streets of Beirut, experience how different events successively left a mark on the area. Children will know what it felt like living in Beirut before the 50s, what it meant to march in mass demonstrations in fight for the Lebanese independence, how important it was to join the mass celebrations when the latter was achieved.

Aside from that, they will also become more attentive to how the architectural heritage developed over time. For example, the Little Saray shown in figure 7 establishes a good demonstration of the changes in style. The French mandate effect is prevalent in the eclectic style incorporated. A series of baroque architecture elements intertwines with more austere features that were mostly dominant during the Ottoman era. The building is elevated on a plinth, subtly allowing it to harness more power. Other features include an oblong façade decorated with neo-baroque windows, a crenelated cornice running along the roof, flanking corners, and a large gable. Children will also be able to notice how the presence of the Saray helped define the confinement of the square within the realms of buildings. Opening the square to the sea reduced the definition of the area.

Fig.7: demonstrates how the Little Saray can be depicted in a virtual reality by using modelling software (The Authors).

- After 1950: Martyr’s Square, Transportation and Cultural Hub

A newly elected president presented development plans designed by a French architect and urban planner. These eventually faced strong political opposition and halted when the Civil War broke (1975-1990). The division of Beirut into East and West during the beginning of the Civil War reflected on the Square with a demarcation line, “Green Line”, which was a North-South axis that winded up at Martyr’s Square.

By integrating virtual realities to the education system, students will be able to navigate through the 50s and witness the square as a leisure and cultural centre, with families walking in and out of theatres, cinemas, and hotels before the war. One of these buildings would include the Rivoli Cinema built in the 60s and depicted in figure 8. Beirut will be experienced as a safe city again, with its congested streets, vibrant people, and neoclassic buildings. The Metaverse will
enrich children with the feeling of peace and security, feelings our current generation currently lack due to incessant turmoil and turbulence.

Fig. 8: displays images showing how the 3D virtual tools can bring Cinema Rivoli back to Martyr’s square (The Authors).

By 1993, 80% of the buildings that were previously listed as historical landmarks got destroyed due to the war. Among them is the police station in Martyr’s Square. Children will be able to go back to that time period and identify what architectural elements making up that building have remained to exist in current constructions such as the arches, the concept of a grand entrance decorated with Greek columns, intricate rooftop cornice patterns, and crafted balustrades. They can also take part in the marches or strikes as demonstrated in figure 9 and learn what it means to be a responsible citizen that fights for a nation as a whole through previous event occurrences. This is a direct response to the message, “Involve them and they’ll learn”.

Fig. 9: displays images showing how the 3D virtual tools can bring Police Station back to Martyr’s square (The Authors).

• 17th October 2019: Martyr’s Square Reclaimed, a Symbol of Cooperation

Martyr’s Square reclaimed its symbolism as a platform to voice out the citizens needs for liberty and change when protestors gathered to injustice. Citizens have claimed these privatized spaces using several means: physical, intellectual, symbolic, artistic, etc., thus changing the image of the area from a symbol of political divisions to a representation of the cooperation of the people (Figure 10).
Physical Reclamation:

People created from the space what urban planners and organizations failed to provide. Reshaping the square took many forms. Furniture and tents were distributed to mark spaces and zones for public discussions and political debates. Street food and small businesses installed stands with affordable prices, to provide the protestors with essentials of a day of protest. Spontaneous patterns of interaction were recreated between the people, and thus creating a new collective memory to replace the void. The circulation of the images after that between people led to the rebirth of the space as one for the people, a square of revolution. #ReclaimYourPublicSpace (Salame, 2022).

Intellectual and Artistic Reclamation:

The intellectual aspect is disclosed through open and free debates that occurred in the streets, as an attempt to educate the citizens and make them more aware of their rights. The artistic aspect also occurred simultaneously where lots of young artists emerged expressing themselves with graffiti on the walls and floors. They are, as well, contributors in the historical and cultural aspects of the country.

Although these events only happened recently, a future method for engaging children in this period is to recreate the art pieces left behind, the spaces as divided by the citizens, including the discussion areas and the business stands. How a diverse country united to stand up to injustice defines how a certain heritage provided ground for people to identify as one nation and build tolerance towards the “different” other.

![Fig.10: Different ways of occupation of Martyr’s Square during the revolution](image)

6. CONCLUSIONS

Lebanon is at crossroads. The country can either have a new start, or it can go back to the same unrest it has been going through for years, and perhaps educating children at a young age to understand the value of their heritage, the uniting foundation transcending their diversity, and the vitality of preserving the culture is the most effective means to build a generation that aims to unify amidst this diversity. Although shifting to a completely immersive reality remains theoretical for now, transforming towards educating architecture using 3D models rather than 2D pictures and factual lectures has proven to be a success in the project carried out by BAU students.

Whether the propensities offer a partly or fully engaging learning atmosphere, immersion increases knowledge retention in students and allows them to synthesize, relate, and criticize.

Involve them and they’ll learn, so that the next brick laid in Lebanese history restores our cultural heritage and rebuilds our lost serenity.
Acknowledgements

We would like to acknowledge the support of BAU Urban Lab for the materials and facilities provided.

REFERENCES

- BEIRUT ARAB UNIVERSITY URBAN LAB. (2021). Developing children’s emotional attachment to the territory of Beirut Blast through activating their participation in the construction of cognitive maps by playing with spatial maps strategically designed in a game environment. [Unpublished raw data]. Beirut Arab University
- VIRTUAL REALITY, 2022. Retrieved from https://www.interaction-design.org/literature/topics/virtual-reality#text=Virtual%20reality%20(VR)%20is%20the,attain%20goals%E2%80%94e.g.%2C%20learning.