

Project Evaluation

Last Generation of Coalminers (Kings of The Underground/Last Voices of the Rhonddda
Nat. Lot. Ref: NM-21-00055

About The Project

The Last Generation of Coalminers project captures the memories and physiognomies (facial features) of the last generation of Welsh coalminers.

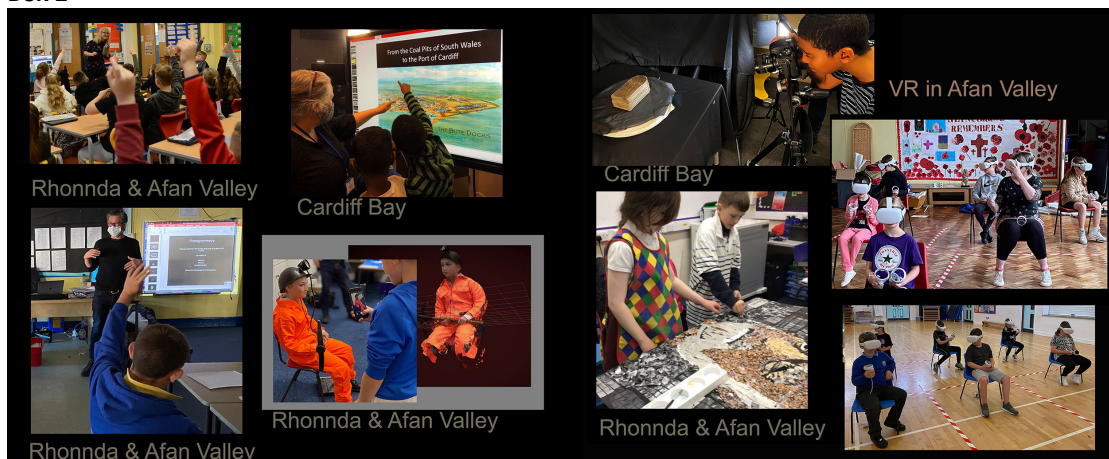
Surviving colliers and their relatives were photographed using a process called photogrammetry, which converts two-dimensional images into three-dimensional portraits. The 3-D portraits were converted into audio-visual presentations and high-resolution prints associated with oral histories.

Box 1



Seven primary schools and youth group, ACE Cardiff, were taught about Welsh mining at 3D modeling, local heritage, and oral history workshops. The children created 3D models and learned about preserving heritage via digital technology and virtual reality (VR). A significant part of the project involved the children listening to coal miners' stories and creating a large collage based on their oral history. The collages were an important part of the mixed-media exhibitions that were designed around the miners' stories and faces.

Box 2



There were two exhibitions: “Last Voices of the Rhondda” at Rhondda Heritage Park, see box 4, and “Kings of the Underground”, see box 3, at Amgueddfa Cymru, National Waterfront Museum, Swansea.

Box 3

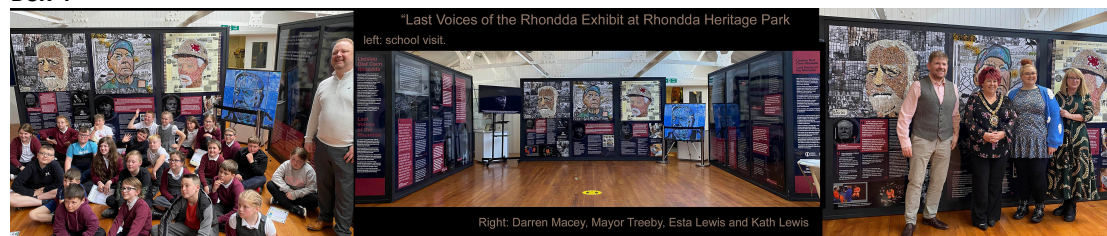


The audio-visual elements were captured and created by Vision Fountain along with freelancers and a student apprentice.

Vision Fountain had significant help, guidance and support from the National Waterfront Museum, Big Pit National Coal Museum, Rhondda Heritage Park and South Wales Miners Museum.

The project intentionally used technology popular in gaming culture, oral histories and the traditional arts to create a cross-generational heritage project.

Box 4



What some of the children said they enjoyed most about the project:

“Using the VR headset and coming to the museum to see the artwork.”

“Listening to the miners.”

“That I learnt about coal and what it’s used for.”

“Using the VR headset and doing the artwork and coming to see it.”

“The coal mining experience and making a coal miner’s portrait.”

“I liked VR headset.”

“I really enjoyed creating the portrait.”

“The VR! ”

“I enjoyed making Idris (a coal miner) and leaning about coal mining.”

“It was fun and I could use my creativities with drawing because I love drawing.”

“I enjoyed the VR game because it shows what being a miner is really like.”

“It was interesting. I liked it all especially the VR.”

“Listening to the miners and making their portrait.”

What project partners said about the entire project:

Overall it was an innovative project that delivered far more than preserving oral histories. It brought a variety of groups and individuals together with a shared interest in creating something wonderful.

Kathrin Lewis, Outreach Heritage Officer, Rhondda Heritage Park

There were huge benefits as the children were able to direct their learning through the new curriculum. It is important for them to learn about their local area. It was a then a great opportunity for them to see the miners at the launch. Additionally the children had the opportunity to experience new technologies such as VR.

Emily Davies, Teacher, Cymer Afan Primary School

Regarding the 3D and gaming workshops, the enthusiasm displayed by pupils for this element of the project was clear and made the project more relatable to the pupils but also highlighted the importance of diversifying skill base to achieve documentation of the past but reveal history in a new way to younger generations.

Leisa Williams, Senior Learning Participation and Interpretation Officer, National Waterfront Museum, Amgueddfa Cymru

Over all it was a great to be involved in such an innovative project. It has also helped us to develop a digital offer and also to build lasting partnerships.

Esta Lewis, Heritage Services Supervisor, Rhondda Heritage Park

The children heard first hand accounts which brought the project to life and used new technology which brought their understanding of their heritage and identity into the 21st Century. **Liz Bradley Headteacher, Hafod Primary School**

"The project introduced young people to new skills such as 3D models and also showed what could be done with digital equipment. The project was a demonstration of what could be achieved with oral history in an "art" style installation." **Ceri Thomson, Curator at Big Bit National Coal Museum, Amgueddfa Cymru**

The theme of this exhibition "Kings of the Underground" aligns with what, Amgueddfa Cymru, The National Waterfront Museum in Swansea is about. We are about the human story of Welsh industry for the last 300 years. So having an exhibition that focuses on the coal industry and having a wonderful twist to use new technologies and photogrammetry ticks all of our boxes.

Steph Mastoris, Head of National Waterfront Museum Swansea, Amgueddfa Cymru

The Project in Numbers

220 child participants

42 miners told their stories

19 teaching & museum staff

7 primary schools

35 workshops

1 youth group

2 EXHIBITIONS

84,550 visitors

2 archives

Project Outcomes

Vision Fountain's mandate is to introduce digital practice to museums, galleries and communities with whom they work. The aim is to inspire creativity, interest in community and heritage as well as increase life chances, especially of the young. We kept our mandate in mind whilst sticking to the outcome priorities required by National Heritage Fund:

1. A wider range of people will be introduced to heritage
2. People will have a greater wellbeing and feel connected to place
3. People will have developed skills
4. Heritage will be better identified and explained
5. Heritage will be left in better condition
6. People will have learned about heritage leading to change in idea and actions
7. Vision Fountain will be more resilient

1. A wider range of people will be introduced to heritage:

The project's broadest aim was to include a wider range of people in heritage. Pre-project planning involved talking to partners in schools, museums and community groups in the geographical areas we planned to work. We targeted relatively geographically isolated areas of the upper Rhondda valley and the Afan valley. These are also considered areas of relative social and economic deprivation (through no fault of their own).

Consultation with our partners followed by **community engagement** enabled us to forge links with the ex-miners and their families. With the help of our partners, and their networks, we held oral history workshops in local museums, village halls, churches and rugby clubs. The workshops were followed by 3D portrait sessions using our portable studio.

The project related workshops were purposely varied. We demonstrated 3D technology, used in gaming culture where children created 3D models of one-another. Museum outreach officers introduced local heritage that was combined with the miners' oral histories that we'd recorded. We also brought virtual reality (VR) headsets to the schools where children experienced a VR coal mine. Each class was also challenged with the task of making a miner that had featured in an oral history workshop.

We hoped that by featuring gaming technology, that most children are familiar with, **(see graph 1)** would encourage "buy-in" to the project. Whilst the children were familiar with several aspects of coal mining, the museum outreach officers combined their learning with local oral histories. The collages were created to reinforce the bond with heritage and their community. All school children involved visited the museum exhibition that featured their work.

We also worked with children of migrants, mostly North African, and introduced them to Welsh heritage by linking their home, Butetown, Cardiff, to the valleys in a "Pit to Port" workshop curated and delivered by Ben Price of Big Pit.

The mixed media exhibition(s) had a footfall of 84,550**.

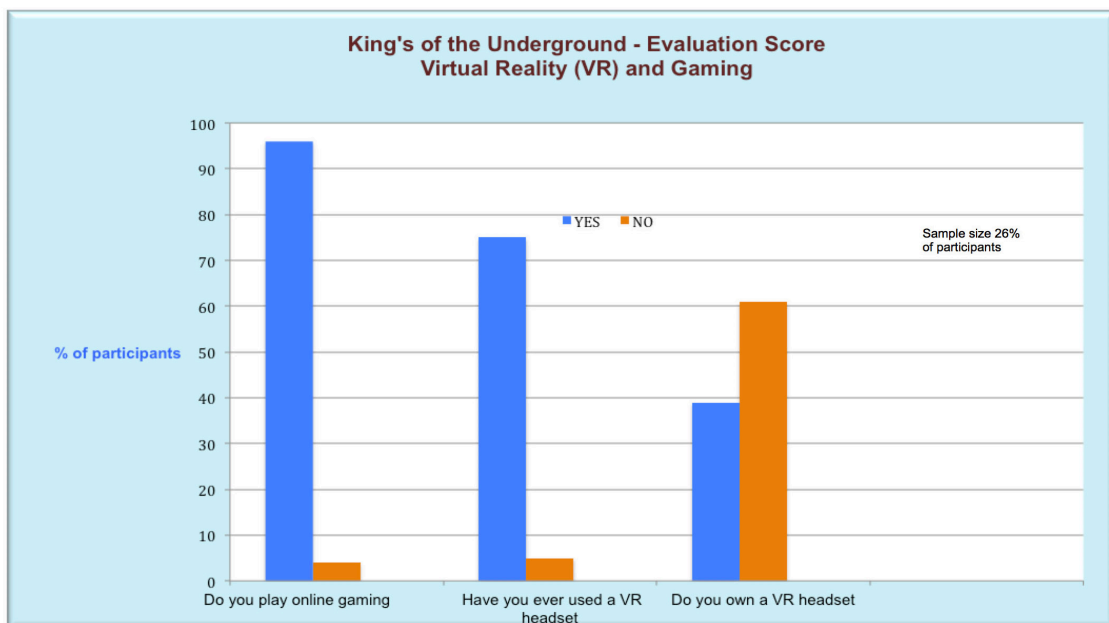
Our evaluation asked outreach staff and teachers if they thought that the project had achieved the goal of **introducing heritage to a wider audience**:

“By participating in the workshops children began to see the importance of their own areas and of the coal that was mined within close proximity to the schools they attended. They also appreciated the wider role of Welsh coal mining (and their own relatives) in powering the world.” **Leisa Williams : Senior Learning Participation and Interpretation Officer, National Waterfront Museum, Amgueddfa Cymru**

“The children within our school who were involved with the project were exposed to authentic, first hand accounts of what life was like for a miner. They gained a clearer idea of their heritage and of people within their community.” **Craig Jones, Deputy Headteacher, Hafod Primary School**

“Through instilling pride in the younger generation and giving them a sense of why their community was built, I think that will give them a greater understanding of the landscape and heritage around them.” **Jacqueline Roach, Exhibitions and Programmes Officer, National Waterfront Museum – Amgueddfa Cymru/Museum Wales**

Graph 1 shows the familiarity that workshops participants have with gaming technology



Note: see appendix 1 for evaluation data collection details

Being part of a community that is steeped in mining heritage is often taken for granted by young people who are born into it. This project gave them a clearer insight into the motives and lives of people who created the community, many of which are their grandparents and great grandparents. **Craig Jones, Deputy**

Headteacher, Hafod Primary School

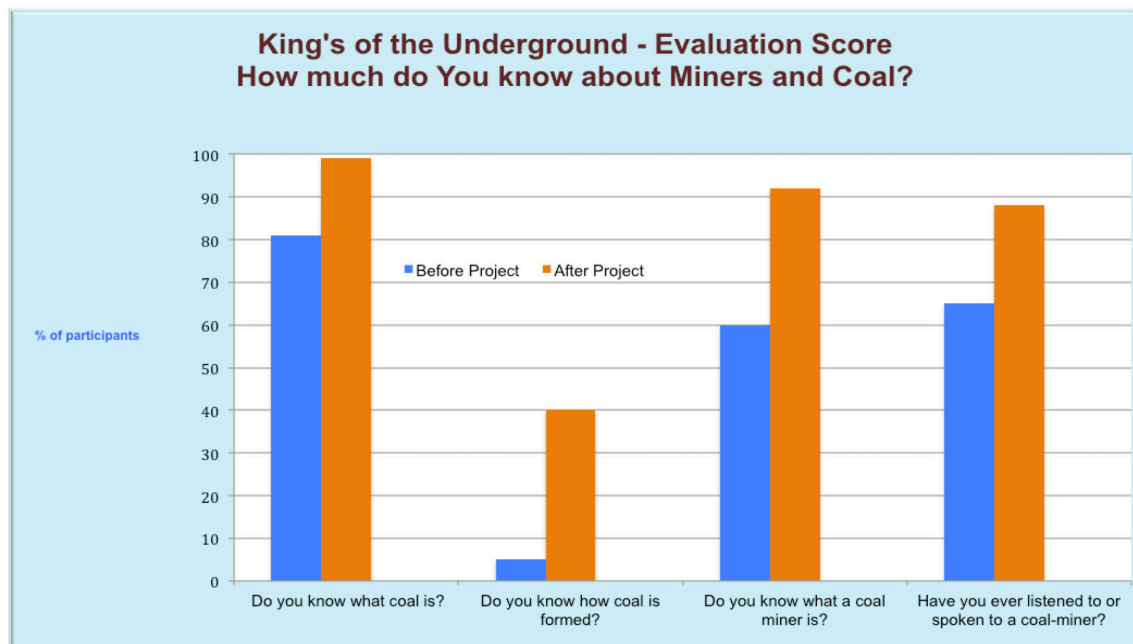
"The project successfully introduced heritage to young people because it was a fully inclusive learning experience that delivered local history in an immersive format."

Kathrin Lewis, Outreach Heritage Officer, Rhondda Heritage Park

Children learned about where the community has been in the times of their grandparents and great grandparents. This gave them a new sense of respect for our heritage and the importance of maintaining it and improving it going forward.

Jamie Jones, Deputy Head teacher, Maerdy Primary School

Graph 2 shows the change in project participants' knowledge of coal / coal miners



Note: see appendix 1 for evaluation data collection details

...continued overleaf

2. People will have a greater wellbeing and feel connected to place

Another outcome that we aimed to achieve is where **participants will have a greater wellbeing**. We believe this was partly achieved through the varied workshops that were developed alongside our partners. Workshops involved children learning about their local heritage, handling coal items, oral history recordings, 3D models and VR.

The community elders often commented on how much they enjoyed sharing the stories, attending the openings and knowing that their stories would be stored and listened too long after they are gone. While some curators and teachers enjoyed being exposed to the new technology for the first time.

"The pupils were involved in many practical and creative processes often working in groups. There were many well-being benefits to the project as a result." **Rob Appleby, Headteacher of Upper Afan Valley Schools Federation**

From a personal point of view I learned about 3D technology and was able to be a part of the learning experiences that involved some of the children. It was a very rewarding experience. **Kathrin Lewis, Outreach Heritage Officer, Rhondda Heritage Park**

"The miners who took part in oral history sessions that turned out in some way to be therapeutic. The miners were able to interact with their fellow miners, locals and children and have their life stories listened too." **Esta Lewis, Heritage Services Supervisor, Rhondda Heritage Park**

"For me, the most enjoyable part of the project was the exhibition that was set up in Lewis Merthyr Museum (Rhondda Heritage Park). I think that it's us old miners who greatly benefit from projects like this." **Roy Jones, ex miner**

"I worked for 28 ½ years underground. I really enjoyed talking to someone, that didn't know about me, and trying to memorize my past. It made me feel proud of my past." **Robert Davies, ex-collier**

"It brought back a lot of memories talking about my husband and his friends. Projects like these, and spending money on projects like these, keeps the past alive and it benefits the younger generations." **Marlene Hill, wife of a miner**

"My father (Keith Tomlin) constantly talked about his mining experience and was privileged to take part in this project. As my father had passed after the project it was great to see his face, and hear his voice in the exhibition, knowing his comments will last forever." **Jason Tomlin, son of deceased miner, Keith Tomlin**

Another aim, related to wellbeing, was that participants **would feel more connected to the place** they lived as a result of the project. Again this is hard to measure, especially with young people. Here are some thoughts from the teachers and outreach officers that worked alongside the children;

"The curiosity displayed by the children motivated them to discover more after my visit and engage with their own families and community to connect with their heritage." **Leisa Williams, Senior Learning Participation and Interpretation Officer, National Waterfront Museum, Amgueddfa Cymru**

"The project introduced the children to mining that took place in the Afan Valley and made them aware of the landmarks such as the bridges and tunnel that are visible in the area and the impact of mining in the Afan Valley." **Rachel Morris, Teacher at Croeserw Primary School**

"The children learned about the experiences had by those within their community and learned how things have changed. They developed a greater understanding of the foundations and the community that they are a part of" **Kathrin Lewis, Outreach Heritage Officer, Rhondda Heritage Park**

"The project instilled a pride in community as elements of the project celebrated the individual contributions that miners and their families made to the Welsh coal mining industry and their society, despite the hardships." **Benjamin Price – Learning, Participation & Interpretation Officer, Big Bit National Coal Museum, Amgueddfa Cymru**

We also attempted **to connect people** to each other. Be that participants, teaching staff and museum staff. Additionally all of the staff and children involved had day trips to visit the museums and see their work.

"The children's work was displayed locally in the Rhondda Heritage Park Museum which gave them an opportunity to share their work with friends and family, as well as the wider community. There was a sense of pride in the work which transferred into their feelings of belonging and identity." **Liz Bradley Headteacher, Hafod Primary School**

"At the museum, children were given the opportunity to sit and listen to ex-miners and their wives. The opportunity to question them allowed the children to deepen their understanding and empathise further." **Glyncorwg Primary School, Rachel Morris, Teacher**

"I'm very proud of the pupils in the schools of the Afan Valley for their work on the history of where they live. Top quality. Well done everyone" **Rob Appleby, Headteacher of Upper Afan Valley Schools Federation**

...continued overleaf

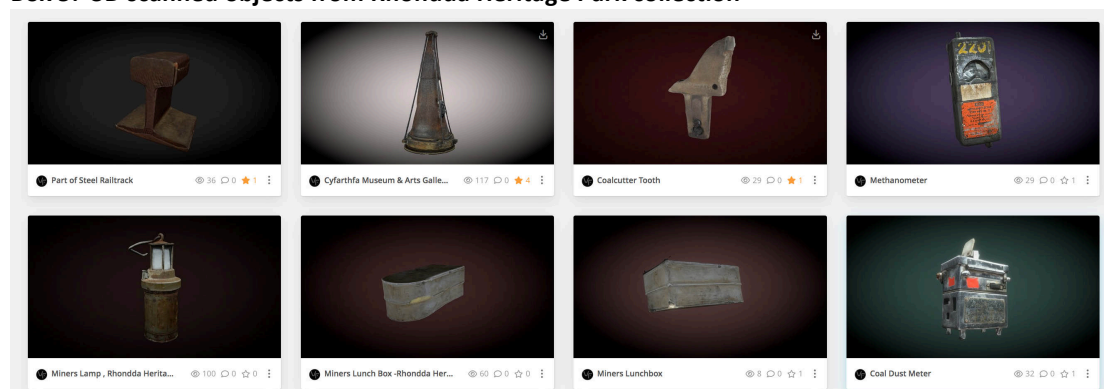
3. People will have developed skills

We aimed to increase the digital skill set of participants, where possible, or at the least inspire project participants (children and staff) to have an increased knowledge with regard to 3D modeling & gaming and its place as a tool to preserve heritage.

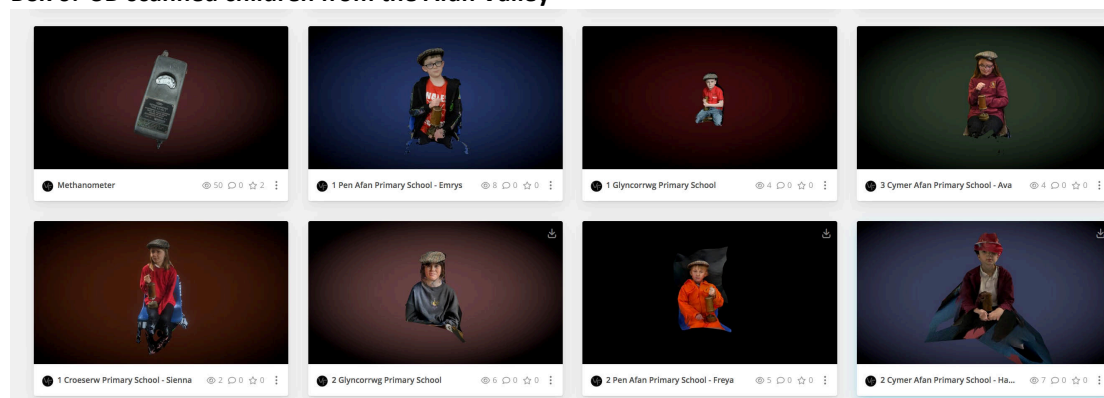
We demonstrated and let young learners try 3D modeling in the workshops, using an iPhone and an APP. We also demonstrated how 3D models could be uploaded to a modeling (web) platform (Sketchfab) and viewed virtually (on any mobile device). A project page was set up on Sketchfab for “Last Voices of the Rhondda” workshops, “Kings of the Underground” workshops as well as for items that were scanned for Rhondda Heritage Park. (see appendix 2)

Children from ACE Cardiff were able to scan coal related safety items using high res cameras. Tiz, student from Cardiff Met, scanned several items from the collection of Rhondda Heritage Park, on site, using our equipment / studio.

Box 5: 3D scanned objects from Rhondda Heritage Park collection



Box 6: 3D scanned children from the Afan Valley

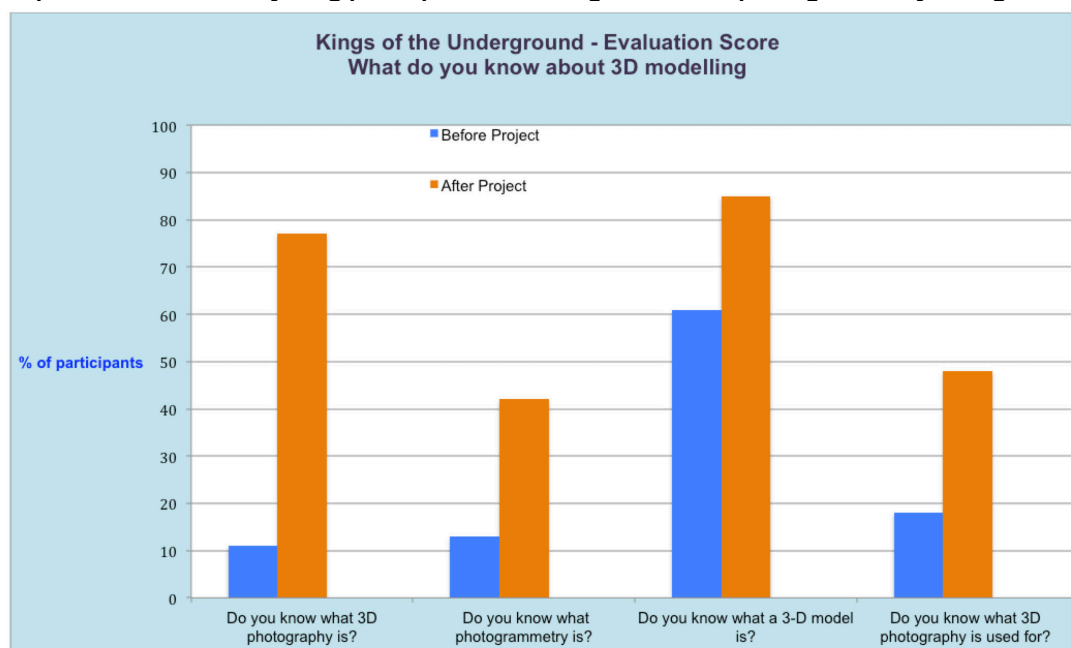


We hope that museum staff, as well as teachers, will have been inspired by the project and grasped some of the concepts with regard to the digital possibilities in heritage storytelling and preservation. Additionally, the project may go some way in closing the technology gap that undoubtedly exists between young people, who are adept and willing to digital possibility, and the teachers and curators, who are often more reticent.

“The 3D and gaming workshops, the enthusiasm displayed by pupils for this element of the project was clear and combined made the project more relatable to the pupils but also highlighted the importance of diversifying skill base to achieve documentation of the past but reveal history in a new way to younger generations.”

Leisa Williams : Senior Learning Participation and Interpretation Officer, National Waterfront Museum, Amgueddfa Cymru

Graph 3 shows how the young participants knowledge of 3D and photogrammetry changed



I think that as the children were able to experience how these new technologies work, they could be used to add a “wow” factor to learning. **Craig Jones, Deputy Headteacher, Hafod Primary School**

The children enjoyed the use of technology and it opened their eyes to a number of possibilities, including work related experiences. **Liz Bradley Headteacher, Hafod Primary School**

“Introducing both the older and younger generation to a new way, using 3D architecture, of depicting portraits was very successful. Definitely got the children very interested and the portraits bring authenticity to the people they depict.”
Jacqueline Roach, Exhibitions and Programmes Officer, National Waterfront Museum – Amgueddfa Cymru/Museum Wales

The 3D modeling itself was extremely impressive and showed the pupils what is possible in modern technology. The VR headset sessions were extremely memorable for pupils and teachers alike. **Rob Appleby, Headteacher of Upper Afan Valley Schools Federation**

Work placements

We also took on two students, one from Cardiff Met and another from the University of South Wales, for work experience. One of the two students that we engaged with, Tiz, of Cardiff Met, learned new skills with regard to 3D models that he created. Tiz also created an exhibition quality set of project related pictures that were displayed in Amgueddfa Cymru for 6 months. We plan to work with Tiz on future projects as he proved very capable as well as a likeable and hard working young man.

The second student Joseph Robertson, of University of South Wales, did not take up any of the many of the opportunities that we offered. We need to take some of the blame for this as Joseph was not selected through a normal enrollment process but was recommended. Whilst he initially showed verbal enthusiasm he did not complete any practical tasks he was assigned. We did not have the confidence to schedule him for on site training.

Our lesson is that we are now more rigorous in our selection procedure.

Box 7: Student placement, Tiz, photographing objects for photogrammetry & panel at Nat. Waterfront Museum



"This project represents an excellent example of how the creative industries and higher education can develop effective collaborations. Vision Fountain gave Tiz the valuable of experience working with professionals at the intersection between arts and heritage." **Duncan Cook, Senior Lecturer in Photography at Cardiff Metropolitan University.**

...continued overleaf

4. Heritage will be better identified and explained

We believe that we have achieved the outcome that **heritage is better identified and better explained**. This was attained through the workshops, as explained above, but also through the project exhibitions.

We had two prominent exhibitions at two museums; “Rhondda Heritage Park” in the Rhondda Valley as well as Amgueddfa Cymru, The National Waterfront Museum in Swansea. The work was exhibited for a total of 12 months. There were over 84,550 visitors to these museums during that period. Both exhibitions were prominent in their main exhibition spaces.

Table 1

Exhibition	Month	Numbers
“Last Voices of the Rhondda”	Feb-22	2,510
Rhondda Heritage Park	March-22	2,532
	April-22	5,140
	May-22	2,828
	June-22	3,471
	July-22	3,579
“Kings of the Underground”**	Oct-22	12,014
Amgueddfa Cymru, Nat. Waterfront Swansa	Nov-22	11,579
	Dec-22	10,370
	Jan-23	10,957
	Feb-23	15,858
	March-23	8,694
Total		84,550

Data provided by Rhondda Heritage Park and Amgueddfa Cymru

See appendix 3 for comments from the exhibition

Amgueddfa Cymru have approached Vision Fountain to display “Kings of the Underdergroud” at the National Coal Museum at Big Pit. An exhibition is not yet confirmed.

We hope that the popularity of the subject matter, amongst mining communities in Wales and beyond, will ensure that the public will see the project on public exhibition for some time to come.

The five audio-visual installations that were made as part of the project have also been uploaded to The People’s Collection Wales, YouTube and Vimeo, all with the correct meta-data enabling easy search and retrieval.

5. Heritage would be left in a better condition

Another important outcome that we aimed to achieve was that **Heritage would be left in a better condition**. The project generated an archive of conversations with Welsh Miners that are now stored in the South Wales Miners Library at Swansea University.

Recording Oral History



The South Wales Miners Library is the “go-to” location for academics and researchers. The recordings will also be stored at Amgueddfa Cymru, the National Coal Museum at Big Pit.

All of the recordings are being stored along side accompanying black and white portraits along with digitized versions of the collages that were made.

The collage portraits that the schools created have been returned to the school. Many will be on permanent display in the schools.

The back-bone of this work was the collection and dissemination, in schools and the youth group, of the oral histories that we had collected. The power of oral story telling was “palpable” according to one teacher. We also left, at the request of teachers, several of the recordings so that they can be listened too in future.

In hearing the real accounts of what life was like for the miners during that time, the children gained a better understanding of story telling and oral history.

Craig Jones, Deputy Headteacher, Hafod Primary School

Because there was a lot collaboration and sharing of memories it helped create a unity of those involved. Having the opportunity to listen to the stories and also to have the real life image of the teller had a notable impact on the young learners and greatened the concept of story-telling. **Kathrin Lewis, Outreach Heritage Officer, Rhondda Heritage Park**

The project sparked an interest in discovering stories from older generations, grandparents and the wider community. **Leisa Williams : Senior Learning Participation and Interpretation Officer, National Waterfront Museum, Amgueddfa Cymru**

6. People will have learned about heritage leading to a change in actions and ideas

We also tried to achieve, to some extent, the outcome where **people will have learned about heritage leading to a change in actions and ideas**. We strongly believe that utilizing gaming technology, which the younger generations “buy into”, alongside community story-telling, enabled us to provide heritage learning in ways that met their needs and interests. The 3D, VR workshops were especially popular and something that we intent to build upon. It was also noticeable how much children enjoy working with traditional arts and heritage. Combining the three elements works extremely well.

*Children enjoy any kind of art work but they particularly enjoyed this project. The creative process was calming and as they were working together, it encouraged talk and peer support. **Glyncorrwg Primary School, Rachel Morris, Teacher***

*I think that people certainly gained a more accurate, first hand understanding of what life was like for people during these times and this will give them a clearer understanding about heritage which will lead to better ideas **Craig Jones, Deputy Headteacher, Hafod Primary School***

7. Vision Fountain cic will be more resilient

The project, overall, has had a positive impact upon our organisation in several respects:

- 1. Digital opportunities** – our work with gaming technology and VR led to one of the museums we partnered with commissioning Vision Fountain to create a VR experiences for their museum. This led to wider exposure and an increased interest in our work in general. It also enabled us to start advertising.
- 2. Increased Income** – The VR experiences that we developed gave us a noticeable increase in income for the last financial year.
- 3. Increased audience** – the overall project, the SM posts and the exhibitions have also lead to a greater over-all exposure and audience. We are talking to Amgueddfa Cymru about a possible follow-up cross-generational project that mixes community story telling, from our ethnic minorities, with VR. This would not have been possible before the delivery of Last Generation of Coalminers (Kings of The Underground/Last Voices of the Rhondda
- 4. Wider network** – the project has had significant effect on our organisations network reach, with communities and with other organisations and cultural centres.

Note: There are challenges that we need to meet get to the “next step” as an organisation. This project has put us in a stronger position to meet those challenges head-on, despite the headwinds that the cost of living crisis is having on the cultural sector as a whole.

Appendix - 1

Project Evaluation Data

We collected evaluation data throughout the project, from project workshop participants (start-of and end-of project) as well as miners and their families.

Teachers, museum staff and senior staff, who experienced the project, were also asked to fill in evaluation forms. There was a visitors book at the exhibition in Amgueddfa Cymru, National Waterfront Museum, Swansea.

Category	Number	% completed evaluation
Children at Workshops	188	42 %
Teaching & Outreach staff	19	73 %
Miners and families*	30	30 %
Miners and families***	47	n/a
Museum Visitors**	84,550	n/a

*miners and families involved in “Last Voices of Rhondda” & “Kings of the Underground” exhibitions

**Comments in visitors book only

***Total miners represented in exhibition included those from earlier Arts Council Wales/Ffotogallery funding

Appendix 2

Link for 3D models for Last voices of the Rhondda

<https://sketchfab.com/visionfountain/collections/last-voices-of-the-rhondda-71cb73cc6f5341c8a473df903c0003bc>

Link for 3D models for Kings of the Underground

<https://sketchfab.com/visionfountain/collections/kings-of-the-underground-023735f3595a49dd8b37b10c9046b964>

...continued overleaf**Appendix 3****What the general public said about “Kings of the Underground” exhibition*:**

*quotes taken from visitors book at Amgueddfa Cymru

“A beautiful illustration of modern Welsh history, the silent monochrome images emphasis the voices of the people interviewed and their past. They have colourful insights on community and a sense of belonging.”

“A stunning exhibition opened my eyes as to where my anti-establishment roots and fierce affiliation towards camaraderie many have come from. Both great grandfathers were miners inn 2023 Salisbury.”

“Superb exhibition! Thank you for telling the real history in South wales!”

“My visit to the exhibition was both an interesting and an emotional experience. It was lightened somewhat to see work produced by children. Well worth a visit.”

Alan Jones, Machen

“Was a lovely experience. I love every single moment. I am from Brazil.”

“Just came in for a brows and what a fantastic surprise. Coal miners, generations of heroes. (Helen)”

“Outstanding exhibition. Brought a tear to my eye. Well done and thank you Miners & Wives of Wales & Britain. (Tony Debbie)”

“Enjoyed going back in time with lovely memories of my dad coming home black from the mine, also sad memories of both my uncles aged 14 and aged 44 years being killed in a fall. What a wonderful childhood poor and happy.” (N.Prichard aged 73)

“Had an amazing time. I love it.” (Emily from England)

“My grandfather was a miner. This is a wonderful exhibition. All these primary schoolchildren should be proud of their contribution.”

“Ardderehog! Excellent”

“Thank you for capturing these memories and voices for future generations – Disappointing there’s no member of the Watt Collieries though.” (T. B)

“A beautiful illustration of modern Welsh history, the silent monochrome images emphasis the voices of the people interviewed and their past. They had/have colourful insights on community and a sense of belonging.” - ENDS

Evaluation compiled by Vision Fountain with data and assistance from Rhondda Heritage Park, Amgueddfa Cymru plus written evaluation questionnaires from schools, workshop assistants & museum staff.

More info: info@visionfountain.com :Vision Fountain cic, 15 Neptune Court, Vanguard Way, Cardiff, CF24 5PJ

