

NASCIO 2020 State IT Recognition Awards



Title: Preparing Childcare Caseworkers with Virtual Reality

Category: Information Communication Technology Initiatives

State: Indiana

Contact: Graig Lubsen, Indiana Office of Technology; 317-232-0618; glubsen@iot.in.gov

Project Initiation Date: January 2019

Project End Date: November 2019

VR – 2020 NASCIO Award Submission

Executive Summary

The Indiana Department of Child Welfare Services (DCS) piloted the use of virtual reality technology in November of 2019 for recruitment and training, providing both potential and current employees with the chance to practice their skills in life-like simulations. Through immersive storytelling, the VR scenarios mimic situations caseworkers encounter in the field when working with families and allow staff members to think their actions through in a safe, controlled environment. The division piloted the VR program in the DCS Marion and Lake county offices, which found different ways to implement the technology. In Marion County, staff members used VR during the interview process, while Lake County employees invited seasoned employees to try their hand at the interactive software. The division required a speedy, scalable, secure, flexible, centralized, and cost-effective solution.

The final solution was developed and tested as rapidly as possible to provide the needed analytic capabilities. It handles several dimensions of data, consecutive connections, and users, while securely storing data and metrics generated and maintained in a cloud environment. The VR solution is very flexible as it helps solve the problems of employee retention and turnover within DCS today while anticipating those to come. With a centralized data collection method, the need to have access to each individual headset is obsolete. Furthermore, the implementation of the pilot has proved the initial creation, development and on-going maintenance costs will be cost effective as the division targets the roll out of the program statewide in 2020.

The VR experience has been beneficial in providing interview candidates (in the field) with an idea of what the job entails to help them decide if the job is a right fit, taking them through the virtual reality experience first and allowing them to opt out of the remaining interview process if they determine the job is not a right fit for them. This then assists in preventing turnover, increasing employee retention and ultimately benefitting the children and families the Indiana DCS agency serve.

Project Narrative

Concept

Managing cases of child abuse and or neglect has led to retention and turnover issues of Family Case Managers (FCMs). Unfortunately, high turnover of FCMs has plagued human services agencies for a long time. When there is high turnover, workloads increase for both experienced and less experienced workers. As capacity issues have risen, the feeling of being overwhelmed and less prepared for case management has prevailed. The inadequacies have led to high turnover, which has been directly correlated to children having multiple case managers during the span of their cases leading to a longer stay in the care of DCS.

DCS partnered with a few private sector consultants sought to implement a solution to assist with increasing employee retention and reducing the high turnover of its FCMs. As a result, the Virtual Reality (VR) pilot project was born. The project piloted two VR modules, the Hiring Module, and the Cohort Training Module.

The Hiring Module provides new hire candidates an accurate depiction of what the job of a Family Case Manager entails. Through the VR Hiring Module, a Family Case Manager (FCM) candidate job shadows a FCM's typical day on the job. The scenario includes going to the home, possibly walking into an intimidating scenario with an aggressive dog and a large menacing man; engaging and talking to parents and kid(s); interviewing family in a dirty home. The outcome is used to screen out candidates that are not comfortable with the work or environment.

VR – 2020 NASCIO Award Submission

The Virtual Reality Cohort Training Module is used to assist new hires in how to adequately prepare and handle situations faced by FCMs. Field staff used the VR to assess safety of children, home conditions, neglect, physical abuse, sexual abuse, mental illness, and domestic violence. The new hires asked family members about bruises, took photos, etc. The outcome of the training also helped develop skills to write comprehensive safety plans.

There were three phases to the pilot project: Session & State Specific Identifiers, Analytic Co-Creation Cession, and The Future of AVeueS Analytics. During phase one of the Session & State Specific Identifiers, a new set of uniquely labeled session identifiers were designed on the device. In addition, a new screen to allow for the selection of an organization was created. Both data points combined provided the basis for clearer session logs as well as enhanced discussion findings regarding gathering feedback and suggestions for streamlining processes. The second phase, Analytic Co-Creation, consisted of defining the stories being told about the data, who they are being told to, and in what way. The Analytics Co-Creation enabled the implementation team to begin to design, build and test the final solution in an elegant way. After the second phase, The Future of AVeueS Analytics, began. The phase entailed the implementation of functionality for a minimal viable product (MVP) consisting of data analytics capturing and reporting. During the last phase, the team maintained a focus on a few key components, the stories, and requirements of phase two, the needs of the AVeueS users, facilitators and of other organizations as well. The project steps at a high level included the following:

- Roll-out updates from Phase 1 to be utilized
- Estimate level of effort for Phase 3 based on co-creation session
- Design, build and test analytic solution
- User acceptance testing
- Go-live with analytics

The goals of the pilot involved seasoned employees, interviewing counties and staff development.

- DCS wanted Seasoned Employees to...
 - Bring self-awareness and leadership awareness to seasoned employees.
 - Identify bias over time, mainly towards individual parties and situations.
 - Managers identify strengths/weaknesses in teams to identify gaps to adhere to the Practice Model.
- DCS wanted Interviewing Counties to...
 - Give experience to candidates so they know what the job entails.
 - Determine characteristics needed in candidates based on the identification of gaps from seasoned employee data.
- DCS wanted Staff Development to...
 - Leverage and improve training (efficient and effective training).
 - Improve training to fit identified gaps from seasoned employee data.

The following table depicts the departments, locations, and target audiences of the pilot groups with a breakdown of the groups below the table.

VR – 2020 NASCIO Award Submission

Department	Location	Target
Field Operations	Marion County North/South	Interviews/Job Fair
Field Operations	Marion County East	Interviews/Job Fair
Field Operations	Marion County West	Interviews/Job Fair
Field Operations	Lake County	Seasoned Employees Interviews
Staff Development	N/A	Cohort Training
Field Operations	LaPorte County	Interviews

- Total Interview Candidates = 88
 - 55 from Marion County
 - 27 from Lake County
 - 6 from LaPorte County
- Total Job Fair candidates = 31
- Total Cohort Trainees = 47
 - 33 went through the VR experience during cohort
 - 13 went through the VR experience during the interview process
 - 1 did not go through the VR experience due to vertigo

Significance

The Accenture Virtual Experience Solution (AVenueS) is an interactive, virtual reality training approach that uses immersive storytelling and experiential learning to reimagine strategies for staff development, screening, and recruitment across human services. It is a learning platform simulating real-life situations that caseworkers face in the field and is unlike typical virtual reality in that it uses interactive voice-based technology. The experience is completely voice activated and hands free using only an Oculus Go standalone virtual reality headset without smartphone pairing. A cloud-based conversation engine uses machine learning and Natural Language Processing (NLP) to recognize and interpret the user’s questions and statements. User analytics track performance and obtain insights about the user’s approach to decision-making. AVenueS does not use computer-generated imagery, joysticks or avatars. Instead, it is a realistic, fully immersive, 360-degree experience filmed in real homes with real actors, with whom users speak as they navigate the scenario.

The VR pilot project supports the continuous improvement value within the Indiana DCS Practice Model as it improves outcomes for children and families served by DCS. Indiana’s children benefit the most from the use of the VR technology because of its employees receiving benefits as well. Using AVenueS to help hire people who feel the job is a right fit and incorporating it in cohort training assists DCS in improving employee retention and reducing turnover.

Impact

The VR project pilot outcomes give good indication that retention will be increased and turnover reduced.

Interview Outcomes:

After the VR experience, there were no interview candidates who decided FCM work was not for them. The candidates were asked if with proper training, would they feel comfortable in the VR scenario being a part of their job duties. The response totals were as follows:

79 Responded Yes, 0 responded No, 2 were Unanswered and 2 responded Absolutely.

Also, the candidates were asked how they felt about the VR experience. Here were a few of the highlighted comments.

VR – 2020 NASCIO Award Submission

- “Eye opening. Slightly surprised at the emotion that went into it, talking to mom and making decision to place in foster care.”
- “I believe it was a great experience to give an accurate depiction of what the field would be like.”
- “Experience emotionally difficult; lots of factors to consider...”
- “Felt like it was helpful for the interview process.”
- “Felt that the experience was very realistic and unique. Felt that the experience was helpful.”

Cohort Training Outcomes:

The cohort participants were given a pretest before the VR experience and a post test afterwards.

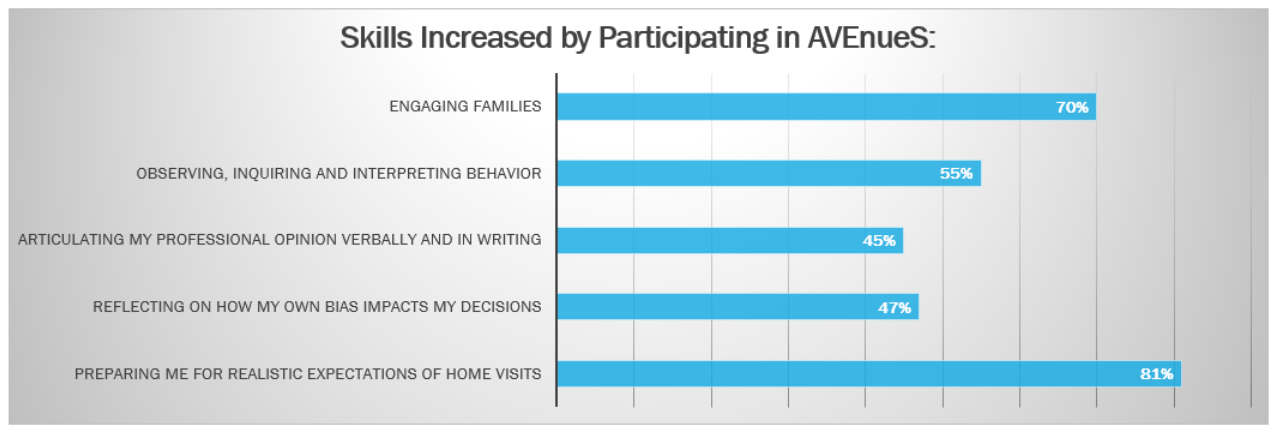
Pre-test:

- I am excited about the field of Child Services
 - Yes = 43
 - No = 0
 - Unanswered = 4 (*did not complete pre-test; experience done during interview*)
- Previous experience in Child Welfare related work
 - Yes = 13
 - No = 30
 - Unanswered = 4 (*did not complete pre-test; experience done during interview*)

Post-test:

- I feel MORE, the SAME, or LESS prepared for my work with families following the experience than I did before the experience
 - More = 34
 - Same = 12
 - Less = 1
- I am excited about the field of Child Services following this experience
 - Yes = 45
 - No = 2
- Do you feel this experience was beneficial to you?
 - Yes = 47

There was also evidence of skills being increased as depicted in the chart below.



Here are few of the highlighted comments by the Cohort.

VR – 2020 NASCIO Award Submission

- “This was awesome. It allowed for me to see the reality of being an FCM and seeing different situations and practicing how to talk to people and what questions to ask.”
- “It helps to practice interviewing someone in a realistic setting.”
- “It reminded me that I’m just interacting with normal people and I don’t need to be nervous about speaking with them.”
- “It gives you the opportunity to feel the stress of the family. The visual was awesome.”
- “This scenario gave me an insight of the not so clear situations that will happen.”
- “Helps link taught info to what we might face in the field.”
- “I think we all need to sit in front of the families and experience the reality of their grief.”
- “It helped me understand how to frame questions.”

Seasoned Employees Outcomes

The seasoned employees were given a pretest prior to the VR experience and a post-test afterwards.

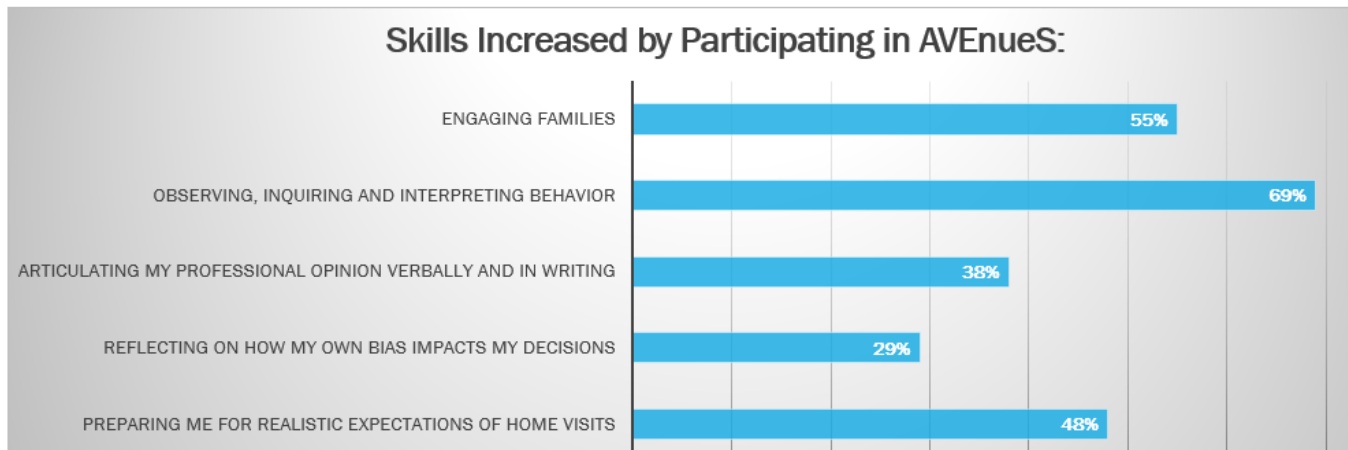
Pre-test:

- I am excited about the field of Child Services
 - Yes = 36
 - No = 2
- Previous experience in Child Welfare related work
 - Yes = 15
 - No = 23

Post-test:

- I feel MORE, the SAME, or LESS prepared for my work with families following the experience than I did before the experience
 - More = 9
 - Same = 28
 - Less = 0
- I am excited about the field of Child Services following this experience
 - Yes = 34
 - No = 3
- Do you feel this experience was beneficial to you?
 - Yes = 27
 - No = 10

As the chart below indicates, the skill level increased for the cohort as well.



The seasoned employees made favorable comments as highlighted below.

VR – 2020 NASCIO Award Submission

- “It opens your eyes to other ways to investigate.”
- “I feel like it brushed me up on observing and interacting better.”
- “It gave me an opportunity to see what it would be like to enter a home at the beginning of a case.”
- “The experience gives you more insight into the actual on the job situations. It helps to provide an individual with a bigger and better picture of actual job requirements and expectations.”
- “It gave me a more hands on experience, which is always better!”
- “This experience prepared me to ask more open ended questions to gain as much information about the family.”

A final, but very important aspect of implementing the VR technology was the ability to analyze data as depicted in the dashboard reporting below. Knowing the data has helped DCS better predict and understand outcomes



for employee retention and turnover. [View Report \(VR Sessions by Training Type\)](#)

VR Training - All Questions & Answers

