Executive Summary

The Science and Technology Directorate at the U.S. Department of Homeland Security funded RTI International to evaluate a Fiscal Year 2021 Targeted Violence and Terrorism Prevention (TVTP) grant provided to the Middlebury Institute’s Center on Terrorism, Extremism, and Counterterrorism (CTEC). Evaluators conducted a process evaluation of CTEC’s grant focused on the design, development, and testing of a game-based intervention in order to identify project accomplishments, challenges, and recommendations for future grantees. A summary of findings is in Table ES-A.

CTEC began by conducting research on existing literature regarding online recruitment to radicalization in gaming spaces. CTEC, in partnership with the iThrive Games Foundation (hereafter “iThrive”), then held co-design sessions with adolescents to learn about their perspectives on this issue and used these sessions to identify the foundational elements of the game they would develop. CTEC and iThrive continued to consult with adolescents throughout the game development process by holding individual playtesting sessions. Ultimately, CTEC developed an initial version of its single-player, dialogue-based game, which sought to illustrate to players how they might encounter the radicalization of a friend through online chat spaces. CTEC piloted its game among the student population of one high school, with 13 adolescents participating and 9 completing the pre- and post-game surveys. Because of this limited number of completed surveys, evaluators were unable to analyze their results for outcomes.

CTEC experienced delays in game development due to adaptations it made to its game format, which limited the time it had to test the game among a greater number of adolescents. Additionally, CTEC faced challenges in successfully recruiting high schools and after-school organizations to participate in game testing.
### Table ES-A. Summary of Findings

| **Objectives** | **Develop a virtual role-playing game that will teach adolescents about radicalization in online spaces.**  
|                | **Pilot the role-playing game in select high schools and youth-service organizations to evaluate its effectiveness.** |
| **Outputs**    | **2 co-design sessions held with 22 adolescents.**  
|                | **11 individual adolescent playtesting sessions held.**  
|                | **Simulation and narrative for role-playing game designed.**  
|                | **Version 1.0 of role-playing game fully developed.**  
|                | **13 adolescents completed game simulation, and 9 completed pre- and post-game surveys.**  
|                | **1 final report written discussing the game development and testing process, summarizing the research conducted on extremism in contemporary gaming spaces and countering violent extremism strategies for combating online recruitment, and analyzing the youth audience at risk for online recruitment.** |
| **Challenges** | **Adaptations to the game's format caused significant delays in the game development timeline, resulting in shorter testing time.**  
|                | **Limited positive responses from schools inhibited game testing among adolescents.** |
| **Recommendations** | **Ensure that game-based grant timelines are realistic based on project scope and planned staffing.**  
|                | **Seek out alternative organizations to schools as venues for youth-focused programming or interventions.**  
|                | **Balance form and substance when developing educational games.** |
In 2021, Middlebury Institute’s Center on Terrorism, Extremism, and Counterterrorism (CTEC) was awarded a 2-year grant by the Department of Homeland Security (DHS) Center for Prevention Programs and Partnerships (CP3) and was selected to undergo an independent evaluation by RTI International. This site profile reviews CTEC’s grant design, implementation, accomplishments, challenges, and relevant recommendations for future programming in Targeted Violence and Terrorism Prevention (TVTP). After completing an evaluability assessment, evaluators conducted a process evaluation on CTEC’s FY2021 TVTP grant, the findings of which are detailed in this report. The evaluation team examined the processes CTEC followed when implementing this grant to learn what mechanisms may contribute to a project’s effectiveness and to detail project accomplishments at the output level. This report examines the evaluation findings, challenges encountered, and recommendations for the TVTP grant program.

CTEC

CTEC is a specialized research center housed within the Middlebury Institute of International Studies, a private graduate university program in Monterey, California. Faculty and students working in CTEC perform mixed-methods research related to terrorist threats and responses. CTEC’s areas of focus include militant accelerationism, online extremism, threat financing and sanctioning, preventing and countering violent extremism, and related emerging technologies. Within these areas, CTEC researchers develop and implement specialized projects intended to inform both domestic and international governmental and nongovernmental approaches to countering violent extremism (CVE).

CTEC researchers devised their FY2021 TVTP grant project to explore a novel method for preventing radicalization and recruitment among youth in online spaces. While CTEC researchers came to the project with expertise in radicalization studies, the FY2021 award was their first TVTP grant and their first opportunity to work on an experimental prevention project. CTEC developed and tested its game in partnership with the iThrive Games Foundation (hereafter “iThrive”), which designs and tests game-based learning tools for adolescents.

Grant Summary

CTEC’s FY2021 TVTP grant began in October 2021 and ended in March 2024. This period included a 2-quarter no-cost extension. CTEC’s grant consisted of two components to develop a role-playing game that would allow CTEC to teach students about extremist radicalization and recruitment in online spaces and evaluate the effectiveness of using their game for this purpose.

Game Research and Design. CTEC conducted a review of existing literature on extremism in gaming to inform the content and structure of its game. In partnership with select subject matter experts and iThrive, CTEC supplemented this research with a participatory approach, which included holding co-design sessions and playtesting sessions with adolescents. These sessions were focused on gathering adolescents’ thoughts on extremism and gaming, ideas for how to address this issue within a game, and feedback on CTEC’s initial game design.

Game Administration. CTEC conducted outreach to high schools and after-school organizations to facilitate adolescent recruitment for game testing. Once it finalized an initial version of the game, CTEC shared it with participating adolescents along with a pre- and post-game survey to gather feedback. A total of 13 adolescents completed the game, 9 of whom completed both the pre- and post-surveys.
Evaluation Design and Methods

The evaluation team conducted a process evaluation of CTEC's grant project to examine how it was implemented and how it achieved identified outputs. Beginning in March 2023, the evaluation team held regular meetings with the CTEC grant team to track progress toward project objectives. Evaluators analyzed project documentation, the final game version, and data collected by CTEC. In addition, evaluators conducted interviews with and surveyed two project staff and two partner staff. Though the evaluability assessment projected an outcome evaluation, the evaluation team was unable to conduct an outcome evaluation of CTEC's project because of the limited number of adolescents who ultimately participated in game testing during the project period of performance.

Findings

Game Research & Design

This section examines process evaluation findings regarding CTEC's game research efforts, which correspond with Goals 1 and 2, Objectives 1.1 through 2.2 in CTEC's IMP.

**OBJECTIVE 1.1:** Conduct research on radicalization and extremism in gaming to facilitate program design.

**OBJECTIVE 2.1:** Collaboratively build a narrative design with the CTEC team and iThrive based on research in order to inform overall program design for an immersive, experiential role-playing CVE game.

**OBJECTIVE 2.2:** Build the innovative immersive, experiential CVE educational program using finalized narrative, and iThrive Sim technology.

CTEC Uses Participatory Approach to Design Game

CTEC began its game development process by reviewing available literature on (1) the current threat of extremism in gaming, (2) previous CVE educational strategies, and (3) the unique factors that may cause adolescents to be particularly vulnerable to radicalization. Additionally, CTEC incorporated subject matter expertise by engaging Dr. John Horgan, a disengagement and deradicalization scholar, and Christian Picciolini, a former extremist and current CVE advocate. Both Dr. Horgan and Mr. Picciolini supported game design by contributing to the initial research and game conceptualization and by reviewing game materials as they were developed.

During co-design sessions, adolescents expressed that they would be unlikely to take any actions if they had a friend who was radicalizing. CTEC and iThrive therefore sought to address this issue in their game design.

Following its initial research, CTEC and its game development partner, iThrive, used a participatory approach to ensure the game was designed with adolescents' input in mind. First, CTEC and iThrive held two group co-design sessions with a total of 22 adolescents during spring 2022, with one held at a high school in Boston and one at a high school in New York City. During these sessions, CTEC and iThrive provided participants with a brief overview of the intersection of games and extremism, held discussions with participants to hear their thoughts on and reactions to this issue, and asked participants to brainstorm ideas for educational games to help teens resist recruitment to extremism through gaming. One finding that emerged from these sessions was that multiple adolescents stated that they would not take any action if they had a friend who was radicalizing. One of the games pitched by participants reflected this issue of inaction: its premise centered around the game player interacting with a friend who is radicalizing through online chats, with the game player being tasked with responding to the situation. Ultimately, CTEC and iThrive selected this proposed idea as the basis for their game design.
CTEC and iThrive continued their participatory approach during the game development process by holding 11 playtesting and feedback sessions with individual adolescents. During individual sessions, iThrive gathered participants’ in-depth feedback on early versions of the game’s characters, visuals, and dialogue, which they continuously incorporated.

**Game Administration**

This section examines process evaluation findings regarding CTEC’s game testing, which corresponds with Goals 2 and 3, Objectives 2.3 and 3.1 in CTEC’s IMP.

**OBJECTIVE 2.3:** Develop an optimized final simulation based on pilot test results.

**OBJECTIVE 3.1:** Build final deliverable report analyzing the success of the pilot program.

CTEC Develops Initial Version of Role-Playing, Direct Messaging Game

By the end of the grant project, CTEC and iThrive had created an initial playable version of the game. This version, designed for single-player use, takes approximately 30 minutes to complete. Within a direct messaging platform, the game player participates in a series of role-playing dialogues with three computer-controlled characters.

Throughout each of these dialogues, the player chooses their response from a menu of two to three provided options. In this way, the player has the ability to choose different dialogue with each character. The majority of these choices, however, do not cause any substantive difference in the dialogue (e.g., choosing between “Are you joking?” and “You seem to be taking this really seriously” results in a slightly different response from a character, but does not change the trajectory of the dialogue). Later in the storyline, there are more varied response options that allow the player to direct the dialogue to a greater extent (see Figure 1 for an example). Ultimately, the game follows the same plot regardless of how the player chooses to respond but allows for some level of personalization.

The first character that the player encounters in the chat space, “J” (with the username “TheLastTrainee”), is portrayed as a once-close friend who has since moved away from the player’s town. Through dialogue with J, the player learns that J moved because her mother lost her job and that J has been feeling isolated in her new town and school. Over time, the player...
also learns that J has been spending significant amounts of time in online forums for fans of the fictional anime show Earth’s Last Heroes. In sharing memes inspired by the show and describing its plot to the player, J demonstrates that she has adopted a radical interpretation of the show’s significance: from her perspective, the anime represents corruption and oppression in the real world, which its characters—and its fans—are responsible for overcoming (see Figure 2).

**Figure 2. Players learn about J’s radicalization through dialogue and social media posts**
The second character, who goes by the username “SpiderRoll,” is another friend of the player. SpiderRoll expresses concerns to the player about J’s recent social media activity and encourages the player to get more information from J about her commitment to the show. Through J’s publicly shared “chirps” (akin to tweets) and direct messages, the player surmises that J is planning to commit a violent attack against an opposing member of the Earth’s Last Heroes fandom, after influential fandom figures recruited J. The player does not confront J. However, SpiderRoll encourages J to speak with a third character, who goes by the username “Snazzie,” for advice on handling the situation (see Figure 3).

Figure 3. Players are introduced to new character, Snazzie, a person who works with teens who are under dangerous influences

Snazzie messages the player directly, explaining that they work with teens to help them get away from dangerous influences. Snazzie advises the player to talk to J and let her know that they are there for her. The player then returns to their dialogue with J to express this sentiment and try to rebut some of the reasons that J feels compelled to act on her frustrations in a violent manner (see Figure 4). J expresses her appreciation for the player's friendship but ends the conversation without indicating whether she still plans to commit an attack.
Following this conversation, the player receives a pop-up notification stating that it has been 1 week since their last conversation with J and they have not heard anything from her. SpiderRoll then sends a message with a link to an article, which reports that a local teen was arrested for trespassing and is being investigated for posting implicit threats on her social media and for showing an interest in building pipe bombs. The game ends at this point and does not confirm whether the individual arrested was J.

As of the end of the grant period of performance, CTEC and iThrive were unable to incorporate all planned elements of the game, including an introduction, additional videos, and a conclusion. CTEC stated that the planned conclusory language would have reinforced their intended message that there is no incorrect way to respond when someone is being radicalized to violence, apart from taking no action at all. It also would have encouraged adolescents to act if they were to observe this process taking place. CTEC and iThrive intend to add these elements to the game after the grant.
CTEC Adapts Game Based on Conceptualization and Objectives

CTEC and iThrive worked together to conceptualize a number of the game’s features in response to their research findings and co-design session feedback. These elements are discussed below.

**Single-Player Game Format.** CTEC initially planned to produce a multi-player game using iThrive’s preexisting multi-player simulation platform. In this format, the game would have been tested in schools, where teachers would facilitate the administration of the game, and multiple adolescents would simultaneously interact through the game. During the game design process, however, CTEC decided that a single-player format would more effectively address their intended learning objectives and suit the game testing context better than the multi-player format. CTEC made this decision, first, because, as it engaged with schools, it learned that teachers were overburdened and did not have the capacity to devote classroom time to administering the game. The single-player format addressed this concern, as adolescents could play the game outside of school. Second, through CTEC’s research, conversations with subject matter experts, and co-design sessions, CTEC honed its learning objectives, focusing specifically on helping adolescents recognize the signs of recruitment to extremism in gaming and respond to those signs. Based on these objectives, CTEC determined that a single-player format was more relevant.

**Direct Messaging Structure.** As discussed above, the game plot unfolds through a series of dialogues that take place via a direct messaging platform. CTEC and iThrive ultimately chose this format over other possible game formats to reflect the high proportion of social engagement that takes place between adolescents in such direct messaging contexts. With this in mind, CTEC and iThrive sought to design the game narrative and materials in a way that paralleled the tone, content, and style of real-world examples of online recruitment to extremism. In doing so, they hoped to achieve their learning objective of helping adolescents identify and respond to signs of radicalization.

**Anime Fandom as Mobilizing Ideology.** CTEC’s game centers around an individual who has radicalized in support of an ideology promoted by a fictional anime show’s fan base. CTEC chose to use a fictional ideology for multiple reasons. First, by using a nonpolitical ideology, the game hoped to communicate to players that extremism can manifest in different, dynamic ways. Second, CTEC chose to use a nonpolitical ideology recognizing that some schools may be hesitant to administer the game if it were perceived as politically charged or controversial.

**Bystander Intervention Method.** As mentioned above, the game ends with a third character, Snazzie, reaching out to the player and encouraging them to act. CTEC factored in multiple considerations when developing this ending to the game. First, it decided that this advisory character would not be a parent, teacher, or similar authority figure; instead, CTEC wanted the character to have a more informal role and therefore reflect someone an adolescent player would be more likely to encounter in a chat space.

Second, CTEC had to determine what action Snazzie would recommend the player take. This interaction is significant, as it is the only part of the game that communicates how the player “should” respond if they were to find themselves in such a situation. CTEC decided during the game design phase that it wanted participating adolescents’ key takeaway to be that there are a range of actions that adolescents can take if they find themselves as a bystander to radicalization, with the only
“wrong” choice being to take no action at all. In the version of
the game that was completed as of the end of the grant, Snazzie’s
direct recommendation to the player is to reach out to J and let
her know that they are there for her. Snazzie also recommends
communicating with J’s other friends to encourage them to reach
out to her. She does not provide any recommendations for other
actions that the player could take. As such, the game’s primary
message for adolescents in this situation is to take action by
speaking directly with the person of concern.

CTEC Recruits Adolescents Through Schools to
Test Game

As CTEC was designing and developing its game, it also began
its outreach to high schools and after-school organizations that
would participate in game testing. Although CTEC changed its
approach to a single-player game that could be played outside
of a school setting, it continued to work with schools as a way
of gaining access to adolescents. CTEC additionally reached
out to after-school organizations that work with adolescents
within the target age range of 14 to 18. Ultimately, due to delays
in game development and challenges in adolescent recruitment,
CTEC and iThrive tested the game in one high school. This
school showed interest in engaging in the subject matter in the
aftermath of the October 2023 Lewistown, Maine, shootings,
which occurred in the high school’s state.

Adolescent Pilot Testing Reveals Areas for
Future Work

CTEC originally sought to test its game among 250 adolescents
to gather initial data and feedback to inform future revisions.
Teachers at the one participating high school shared the game
with participants in March 2024, and adolescents were given
approximately 2 weeks before the grant period of performance
ended to complete it. Adolescents were sent a pre- and post-
game survey along with the game itself and were given gift
cards as incentives to participate.

In total, 13 adolescents (aged 15 to 18 years old) played
the game, and 9 of those (5 female, 4 male) completed
connectable responses to the pre- and post-game surveys.
The survey results illustrate the perspectives of these 9
adolescents; however, due to the small sample size of survey
respondents, evaluators cannot draw any conclusions from
these data.
The post-game surveys also included questions that asked for participant feedback on the game, summarized in Figure 7.

**Figure 7. Adolescent Game Feedback**

<table>
<thead>
<tr>
<th>Question</th>
<th>Response Options</th>
<th>Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>Did you enjoy playing the game?</td>
<td>1 = Not at all; 5 = Enjoyed it greatly</td>
<td>2.44 (average)</td>
</tr>
<tr>
<td>How well do you think the game can help other people your age learn how</td>
<td>1 = Not well at all; 5 = Very well</td>
<td>3.44 (average)</td>
</tr>
<tr>
<td>to respond to radicalization and extremism?</td>
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- **33%** of respondents said the game changed the way they think about radicalization and extremism.
- **33%** of respondents said that the characters in the game felt realistic.
- **66%** of respondents felt the game shows a realistic scenario.
- **55%** of respondents felt there was too much time between messages.
Challenges

Game Development Delays. CTEC and iThrive experienced significant delays in the game development phase, as evidenced by the 2-quarter no-cost extension it received. These delays were in large part due to CTEC’s decision during the grant period to shift from a multi-player simulation platform—which iThrive had already developed and which was the basis of CTEC’s grant design—to a single-player format. While this decision was made based on what CTEC felt would be most effective in achieving its intended goals, it required that iThrive re-engineer its existing simulation platform and develop new game features, more visual content, and more narrative design. Therefore, the development of the single-player game added significant additional time and resources than originally budgeted. Because of these challenges, a testable version of the game was not completed until a few weeks before the end of the grant period, resulting in a limited window for game testing that in turn limited the data CTEC could gather. Moreover, iThrive did not have sufficient time to incorporate all planned substantive content into the game, including a conclusion to directly inform the player of the game’s intended takeaways.

School Recruitment. CTEC relied primarily on its staff’s outreach to high schools to recruit adolescents to participate in game testing. However, CTEC struggled to gain commitments from schools over the course of the grant for a number of reasons. Many schools never responded to CTEC’s outreach, with at least one school’s point of contact departing and not providing a new one, indicating that staff turnover in schools can also be a challenge to recruitment efforts. In response to this lack of engagement, CTEC reached out to additional schools and after-school organizations. CTEC staff could not definitively say why some of these schools and organizations did not respond to their requests. However, they did receive indications from some schools that they were hesitant to engage in the grant project because of the subject matter and funder. For example, one school’s explanation of its concern cited the current movement in parts of the United States to remove law enforcement from schools. The school was worried about experiencing pushback if it participated in DHS-funded activities, even if those activities were not punitive in nature. Another factor that may have affected CTEC’s ability to engage schools was the difficulty in coordinating schools’ calendars with the game development calendar, as school outreach largely stalled during the summer months and toward the end of the school semester.

Discussion

IMP Accomplishments

CTEC achieved its game design objectives (Objectives 1.1 and 2.1) by conducting a literature review and engaging in a participatory design process, the latter of which entailed speaking with adolescents to ensure the game narrative would be informed by their perspectives.

Per CTEC’s IMP, CTEC and iThrive developed initial beta versions of the game (Objective 2.2) and sought feedback on their design during individual playtesting sessions with adolescents. iThrive incorporated this feedback as it continuously adapted the game until the end of the grant period of performance. This pilot version delivered at the end of the grant included the majority of CTEC’s intended materials, although some introductory and conclusory elements still remain to be incorporated. One of CTEC’s goals was to increase awareness of and build youth resilience to online radicalization through its educational game. The game’s pilot version does provide a seemingly realistic example of how an adolescent might encounter and grapple with a friend’s radicalization through an online forum.
However, the game does not provide any specific educational messaging surrounding awareness of online radicalization or how youth might build their resilience to it. The primary directive communicated to adolescents through the pilot version is to speak directly with a friend if they are concerned about them radicalizing. Additionally, although the player believes that there is an imminent risk that J will commit a violent act, the game gives no recommendation to notify the police or a trusted adult. The game does not provide other recommendations for what adolescents can do to build resilience to online radicalization.

CTEC and iThrive then conducted pilot testing of the draft version of the game in the final 2 weeks of the grant, per Objective 2.3. CTEC had planned to administer and test the game among a minimum of 250 participants but was only able to do so among 13 adolescents, 9 of whom completed the surveys. This discrepancy can largely be attributed to the limited amount of time for game testing that remained at the end of the grant due to game development delays, in addition to challenges that CTEC faced in recruiting schools to participate. Finally, CTEC achieved its final objective, 3.1, by summarizing its research, design process, and testing results in a final report.

**Sustainability**

CTEC plans to make the current version of the game publicly available for wider consumption. Additionally, CTEC plans to seek additional funding to further revise and test the game. Currently, CTEC is working on a similar topic under its FY2022 TVTP grant, through which it is working to provide game developers with resources to better understand what extremism in games looks like.

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**Recommendations for the TVTP Grant Program**

**Ensure that game-based grant timelines are realistic.**

When designing or reviewing grant proposals for game-based products, prospective grantees and DHS should carefully consider whether anticipated timelines are realistic. For example, prospective grantees should consider whether the type of game that they seek to produce can be developed within the 2-year TVTP grant time frame. This may be determined by how much of the game has already been conceptualized, the game format, and whether a platform already exists. Using CTEC's grant project for reference, some individuals interviewed acknowledged that delays are common in game development and that it is unlikely that a single-player game of the kind that CTEC ultimately developed could be conceptualized and created in just 2 years. If prospective grantees do not believe that it is realistic to develop their game within the 2-year time frame, they might instead consider proposing the initial conceptualization and development of a section of the game, which could be used as a “proof of concept.” Concerns around timelines should be even more closely considered by prospective grantees seeking to test their games in schools. Due to challenges in school recruitment, as illustrated by CTEC’s grant, gaining youth participation through this method will likely require significant resources to be successful. Additionally, prospective grantees should consider how their game development and grant timelines will match up to school timelines. Grantees should also be sure to communicate realistic timelines, and any changes to those timelines, to their intended partners. This will allow grantees and their partners, such as schools, to establish common expectations and anticipate and mitigate challenges that may arise in coordinating schedules. In turn, DHS should consider each of these factors when reviewing game-based grant proposals to ensure that it is selecting projects that can realistically be achieved within the grant time frame.
Seek out alternative organizations to schools.
Many prospective grantees who seek to engage adolescents in their projects often focus on working in or with schools because of schools’ inherent access to this target audience. However, successfully engaging with schools is a common challenge across the United States, as they continue to face budgetary and staffing constraints. Grantees with a youth target population should therefore consider other organizations they might engage with, such as after-school groups or community-based organizations focused on youth. Such organizations may have greater capacity to engage with grantees than schools and can still facilitate access to grantees’ intended target audience. Further, depending on the nature of the organization, they may be able to share important insights about their youths’ perspectives and their community’s context. These types of community partnerships may ultimately produce more robust and sustainable engagement for grantees than many schools have the capacity to provide.

Balance form and substance when developing narrative-based interventions.
CTEC placed an emphasis on ensuring that its game illustrated a realistic representation of how adolescents might encounter radicalization in a direct messaging context and how those dialogues might proceed, as evidenced by the extensive resources devoted to its participatory game design process. However, this emphasis on designing realistic adolescent dialogue may have limited the amount of educational content that CTEC incorporated into its game. Future grantees developing narrative-based interventions for TVTP purposes should ensure that they identify a balance between the form and the substance of their intervention. This is admittedly a complex balance, as games, role-playing exercises, and similar interventions inherently aim to be engaging for the target audience, a critical aspect for exposure and sustainability of the game’s messaging. However, it is also critical that the message received through this engagement aligns with best practices and promotes appropriate preventative action.