

Advanced Technological Education Television Final Evaluation Report

Inverness Research
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"ATETV fills a void in available resources for career exploration. I encourage students, parents, teachers, and counselors to explore the site and learn about different careers that exist." Educator

I. INTRODUCTION AND OVERVIEW

The National Science Foundation created the Advanced Technological Education (ATE) program in response to the Science and Advanced Technology Act of 1992. This act recognized the importance of community colleges as key providers of education for technicians in the U.S. The ATE Center Web site articulates the goal of the ATE program as follows:

"The ATE program supports curriculum development; professional development of college faculty and secondary school teachers; career pathways to two-year colleges from secondary schools and from two-year colleges to four-year institutions; and other activities. Another goal is articulation between two-year and four-year programs for K-12 prospective teachers that focus on technological education. The program also invites proposals focusing on research to advance the knowledge base related to technician education.¹"

The ATE program currently funds three different tracks: Target Research in Technician Education, Projects and Centers. According to the ATE Center Web site ATE is the largest community college initiative in the NSF portfolio. Its budget was \$64 million in the 2010 fiscal year and a total of 972 ATE grants have been awarded in every state, including Guam, and Puerto Rico.²

¹ See <http://atecenters.org>.

² Ibid.

ATETV

Advanced Technological Education Television (ATETV) is a Web-based video series that was created by the Association for Interactive Media Education (AIME) and Pellet Productions, Inc. to connect on-line users to the various ATE programs with a focus on cutting-edge careers and their educational pathways. The primary audience for ATETV is prospective, current and former students. Secondary audiences include technicians, teachers, guidance counselors, industry leaders and employers.

The ATETV site (ATETV.ORG) currently features over 200 video segments exploring all aspects of a variety of cutting-edge careers, along with the ATE Centers and projects that support students on their path towards these careers. Each video is introduced by Caroline Botelho, the ATETV host, a young actress featured on Zoom. Season 1 produced 48 complete episodes; each of these have two to five segments with a total approximate running time of eight minutes. Forty more videos were produced for the Bridge season. All episodes and segments are archived on the site.

Season 1 episodes cover eight broad categories: Technology Updates, Student Stories, Case Studies, From High School to College and Beyond, Ask the Expert, Career and Company Profiles, Interviews and Reports from the Field. The Bridge season videos cover five categories: From High School to College, the 101 series, Tech Tips, Inside Industry and Classroom Visits.

A visitor to the ATETV site can watch videos that feature interviews with employers, ATE students and educators; get a close-up look at some of the hands-on training programs offered by community colleges with ATE programs; and learn more about careers in cutting edge technologies such as biotechnology, telecommunications and renewable energy technology.

The Evaluation

Inverness Research³ was contracted to conduct the summative evaluation of Season 1 of ATETV and of the year of bridge funding that followed Season 1. Existing evidence reported by the Goodman Research Group, Inc. confirmed the quality and value of the Season 1 material. The evaluation conducted by Inverness Research built on these findings by collecting qualitative and quantitative data along several dimensions

³ For more information on Inverness Research please see www.inverness-research.org

including reach, audience, usage, quality and value. The time period for Inverness work covered the end of Season 1 and the period of Bridge funding. The evaluation has completed the following tasks:

- interviewing key project leaders
- viewing the set of videos and exploring other relevant resources
- developing protocols and instruments
- conducting interviews with 26 people who had used the ATETV site. These interviewees included staff at ATE Centers, community colleges and cable television stations. Twelve of these interviews were in-depth interviews and the remaining were short interviews.
- surveying 215 ATETV users between June 30 and September 29, 2011. For complete details of the survey methodology and results please see Appendix B.

This report

This remainder of this report is organized around a summary of the evaluation data. First we present a set of key findings or claims that we believe ATETV can make based on the data collected. Then we discuss some of the challenges and considerations for future ATETV efforts. The report concludes with a brief summary.

II. Summary of Findings

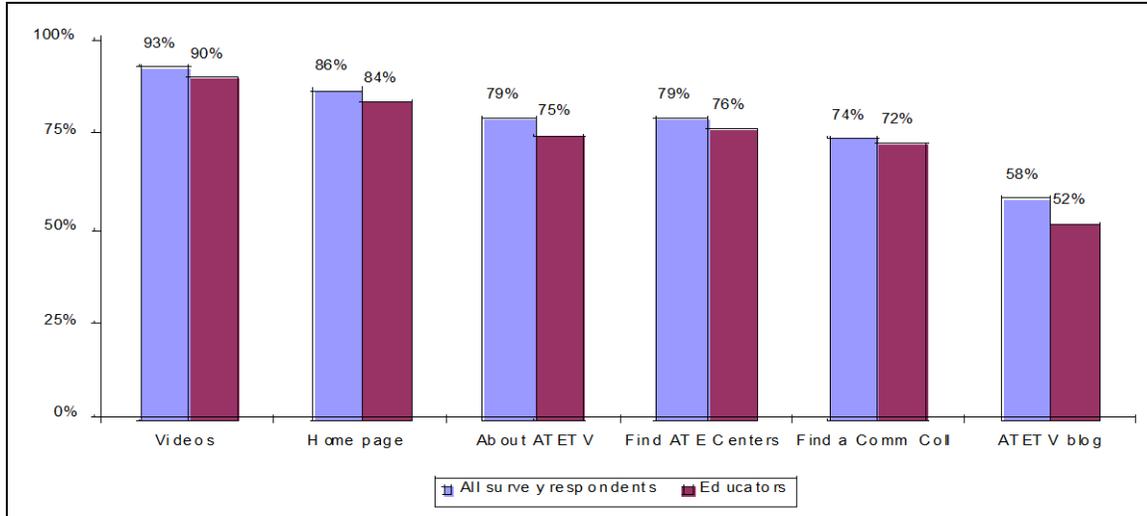
Survey and interview data indicate that ATETV is an important and valued resource within and beyond the ATE community. ATETV.ORG is reaching it's intended audiences, provides relevant and needed content, delivers professional quality videos that can be used in multiple ways in a range of settings to support Advanced Technological Education. In this section we highlight the evaluation findings with supporting evidence from the data gathered.

1. ATETV.ORG is an informative and important resource to the field of Advanced Technological Education.

A resounding 98% of survey respondents reported they will visit the ATETV site again. Visitors to the Web site rate ATETV.ORG as a valued and important resource. 93% of survey respondents rated the ATETV videos as

informative or very informative.⁴ all of the other Web site elements were deemed informative by a majority of respondents (58% - 84%).

Percentage of all survey respondents and educators⁵ who found different elements of the ATETV Web site informative



Other survey results of interest by subgroup: All students who rated ATETV elements said they were informative with the exception of one student who did not rate the blog as helpful. At least 2/3 of parents, job seekers, employers, and other respondents rated each element as informative, with the exception of the 50%-50% split among other respondents regarding the blog.

In our interviews with members of the ATE community—Directors of Centers, Project PI's, Administrative Assistants, Web site Managers and Instructional coordinators—more than two-thirds rated the importance of ATETV to the ATE community as important or very important. The following comments are representative of many we heard⁶:

If you are recruiting people in different fields it is great to have the visual component to help explain what the job entails.

Director, ATE Center

⁴ Ratings were made on a 5-point scale, where 1= not informative at all and 5 = very informative.

⁵ The survey data for educators is featured in the body of the report because they represent the largest percentage of the survey respondents (71%) and are an important part of the intended audience for ATETV.

⁶ The quotes in this report have been lightly edited for clarity without changing the intended meaning of the speaker.

We tell students, prospective students, and anyone else interested in [our Center] as an industry, career, etc. to visit the ATETV Web site.

Administrative Assistant, ATE Center

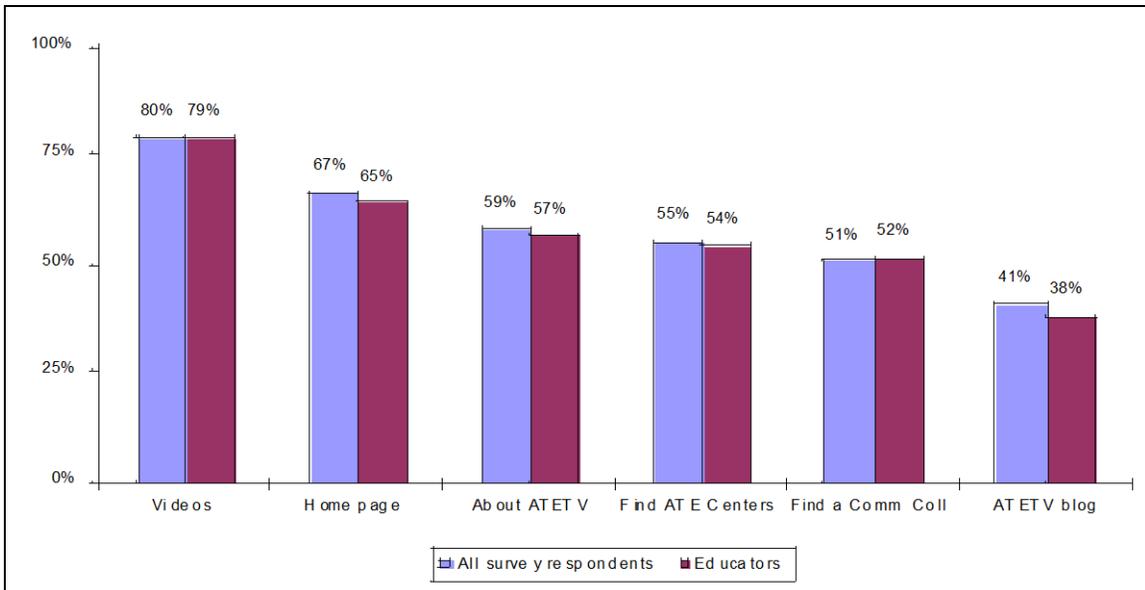
Extremely well done video productions that take a student either into the classroom or on the job site to expose them to what technical education can do for them.

Educator

2. The ATETV Web site provides relevant and useful content.

Survey and interview data indicate that visitors to the Web site and users of the videos find the content provided to be relevant and useful for their needs. Specifically, the videos were rated highest in terms of being relevant, with 80% of survey respondents reporting the videos were relevant or very relevant.⁷ With the exception of the ATETV blog, each of the ATETV Web site elements were regarded as relevant to the needs of at least half of all survey respondents and educators who have used the Web site.

Percentage of all survey respondents and educators who have found different elements of the ATETV Web site relevant to their needs



Other survey results of interest by subgroup: Videos were less relevant to parents (67%) than to other survey respondents. Students, job seekers, and

⁷ Ratings were made using a 5-point scale, 1= not relevant at all and 5 = very relevant.

employers gave higher ratings to the blog than other subgroups. Job seekers and students tended to give slightly higher ratings for relevance of all the Web site elements than other survey respondents.

Interviewees were asked to rate the usefulness of the ATETV Web site and videos. Every single person gave a rating indicating that the site and videos are useful or very useful.⁸ Interviewees cited frequently the capacity of the videos to 'tell the story' of education and careers in cutting-edge fields. Many survey respondents wrote similar comments. For example:

The videos provide exactly the information we are looking for when it comes to inspirational stories about education and where it can lead you.

Administrative Assistant, ATE Center

They are very useful. It helps tell a story out there for people particularly right now who are trying to look for new careers and new opportunities for job training, and for jobs and they do a great job in helping to tell their story and saves me from having to go out and do it.

Director of Marketing Services at a Community College

I provide professional development for teachers. I'm always using ATETV videos to illustrate a point as well as encourage them to use it as a resource.

Survey respondent, Educator

3. The ATETV videos are high quality, well designed, and appealing.

The ATETV videos received high ratings for quality. All of the in-depth interviewees rated the quality of the videos as high quality or very high quality.⁹ Interviewees referred to the high production quality and the ease by which the videos could be translated to a TV format. In fact, two of the interviewees were currently showing the videos on university cable TV channels.

You could take these [ATETV videos] right now and put them on a channel and they would be fine.

Video producer for a Community College

They are very professionally rendered and they ask the right questions.

Director, ATE Center

⁸ All of the interviewees rated the usefulness of the videos a 4 or 5 on a 5-point scale where 1= not useful and 5 = very useful

⁹ All of the interviewees rated the quality of the videos a 4 or 5 on a 5-point scale where 1= low quality and 5 = very high quality

Extremely well done video productions that take a student either into the classroom or on the job site to expose them to what technical education can do for them.

Survey respondent, Educator

Interviewees frequently commented on the approachability and appeal of the videos. They found them to be hip, entertaining and friendly. They enjoyed the presence of the host, Caroline Botehlo, as someone who is appealing to young audiences. The following comments are representative of how survey respondents and interviewees described the quality and qualities of the videos:

It is packaged very well, I think. You can get a great overview of what is going to be happening, just by watching the episode and the way they kind of fill you in-- here is what we are going to be doing.

Video producer for a Community College

They are short, they get to the point and they highlight new technologies that might interest educators to share with students. I think that is primarily what I like about them. The host seems a little bit younger and appeals to students that might be interested in this kind of career.

Web site Manager, ATE Center

ATETV provides professional presentations that are 'age adequate' for community college and high school students.

Survey respondent, Educator

From the videos I have seen, ATETV provides a lot of entertainment and information in a very short amount of time. I can watch a video on a particular subject I may be interested in and have a good foundation of information in less than five minutes.

Survey respondent, Educator

The videos and career information are very hip and worthy for our recruiting efforts. I might add a really attractive and focused Web site!

Survey respondent, Educator

The data also suggests that the ATETV videos are not just approachable and appealing for what we may think of as traditional students—young people on a trajectory from high school to college—but also for non-traditional students, that is, those people who are thinking of going back to school after varied careers and life-experiences.

It seems to be what I'm looking for in terms of going back to school. Watching the one video about the older adult learner gives me more confidence in going back to school at 58 years of age.

Survey respondent, Student

I was looking for a video about an internship for a single mother. The project was for a Psychology for Success course, and was supposed to be inspiring. I do believe the class benefited from the video. The section I chose, a single mother working on her degree, was very inspiring.

Administrative Assistant, ATE Center

4. ATETV is reaching the ATE community and broader audiences across the United States.

The evaluation data indicate that a broad group of people are using the ATETV Web site and videos. Survey respondents represented 40 states and three foreign countries. According to the survey findings, the most common users of the site are educators (71%). The site is also used by students (7%), parents, employers and job seekers (3% respectively), and "others"¹⁰ (12%). Interviewees occupied a wide-range of positions including ATE project PI's; community college faculty members/educators, Web site managers and career counselors; and cable television station managers.

The vast majority of educators responding to the survey (94%) report that they would encourage students to visit the ATETV site. They see it as a resource to connect their students to information about cutting-edge career paths. Some of their comments include:

I find it helps the community college students learn about other jobs within their field...I also encourage our students to use the videos as part of their outreach activities to middle and high school students.

All of our students are on a FaceBook page and I have posted the ATETV snippets there. I have about 700 students.

Given the high percentage of educators visiting the ATETV Web site and that educators typically serve large numbers of students (note that in the quote above one of the educators reaches ~700 students), it is very likely that ATETV is reaching thousands of students.

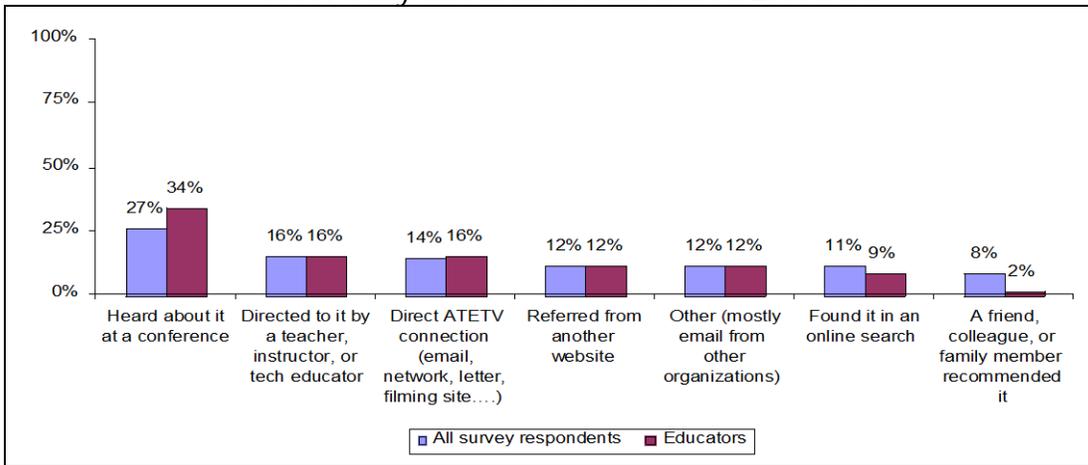
In the past year, ATETV has made a concentrated effort to reach cable TV stations. We learned through interviews with two cable access TV stations

¹⁰ The 26 "others" are diverse, for example some described their role as friend of an educator, researcher, grant writer, manager of a government access cable channel, administrator, cable access manager, promotions manager for an educational cable TV channel and interested person.

that they are broadcasting ATETV segments and are reaching a combined total of over 200,000 households.

When considering the reach of the Web site, it is important to note how those visiting the ATETV.ORG first learned about the site. According to survey data, over one quarter of all survey respondents (27%) and one third of educators (34%) reported that they first heard about the ATETV Web site from a conference. Small proportions of respondents said they heard about the Web site in other ways—from other teachers, direct ATETV connections, another Web site or listserv, or an online search. The fewest number heard of the Web site via personal recommendations.

Percentage of all survey respondents and educators -
How they first learned about ATETV.ORG



Other survey results of interest by subgroup: Compared to educators, fewer of the other survey respondents heard about ATETV at a conference. Other survey respondents were more likely to hear about ATETV through recommendations from a friend, colleague, or family member (reported by 10 out of 26 "others") and finding it on an online search (reported by 7 out of 16 students).

5. ATETV videos can be used in many different ways to support a wide range of purposes and programs.

The resources on ATETV.ORG help tell the story of opportunities for careers and training not only to college-level people and professionals but pre-college students and parents as well. Data from in-depth interviews demonstrates that the ATETV videos are substantive and flexible enough

to be used in a variety of ways and in different settings to support needs of each user or program.

The group of interviewees represented a variety of different roles at their institutions—from directors of ATE Centers to marketing directors, from administrative assistants to video producers, and from Web site managers to cable TV channel managers. Each interviewee described how they use the ATETV Web site, in general, and the videos, in particular, to support the work of their institution. For example, one interviewee selects videos on the ATETV site that cover topics similar to those found in courses offered at his college. He then airs the videos on a local cable TV channel as a means of recruiting students to the college.

In order to illustrate the flexibility and power of the videos in a wide range of settings, we have created five portraits of usage based on our interviews.

Portraits of ATETV video usage

- **Coordinator of Marketing and Academic Advisement for an ATE Center**

This ATE Center is located at a community college in Arizona. The Coordinator of Marketing and Academic Advisement first heard about ATETV at the ATE co-PI conference and since then has visited the site frequently.

As part of her outreach work for the Center she produces an on-line newsletter that reaches approximately 500 K-12 educators through schools and community-based organizations, such as Goodwill and Youth at Risk. The intention of the newsletter is to create awareness of the specific career paths supported by the community college and to get students interested in these areas of study. The newsletter includes articles about technology, such as machining, electronics, HVAC and automation, and uses linked to the ATETV videos to further illustrate each area.

When I sent it [link to the ATETV video] out in my newsletter that was one of the hottest hits on my newsletter, as far as what people were looking to read. You can track through the e-newsletter...it will tell you each article and it will tell you how many clicks you got and who looked at what and then how many times they came back. The videos always seem to be one of the hottest topics for people.

She values ATETV because it is difficult to find content that is student friendly and appropriate. The only other source she has for the type of content found on ATETV is YouTube –which is not ideal for her use because it is frequently blocked from school use and can bring up content that is “a little sketchy.”

When asked what was most useful about the ATETV site she mentioned that she appreciated the different facets of the site—the student host, students talking about programs/topics and the availability of both short and long videos. She also felt the site helped her to stay current on topics related to technology.

It seemed like it wasn't ever stagnant and so the stuff continued to change and that helps me because technology is so fluid and changes constantly, and to stay current on what is out there, and see what other colleges are doing.

- **Director of Marketing Services at a Community College in Arkansas**

The Director of Marketing Services this community college is responsible for communications, advertising, and public relations. He first heard about ATETV a few years ago from his executive vice president when he joined the staff.

He said, 'this has got some good information on it and you may want to look at it'. So I did that and have been most impressed.

Whenever the Director of Marketing Services sees a video on ATETV that is related to a course offered at the college— “anything from diesel mechanics to renewable energy to aviation programs” he has his team air it on the local cable channel. In this way, he keeps the community informed about the courses available at the college.

It helps tell a story for people particularly right now who are trying to look for new careers and new opportunities for job training, and for jobs. They do a great job in helping to tell their story.

He explained that the college doesn't have the resources to “go out and do the same thing for ourselves” and as such, the ATETV site is invaluable. In addition to airing the videos on the local cable channel, the Director and his staff point new students to the site during registration and orientation. He finds that the videos give students a clearer understanding of the courses offered at the college that dovetail with the

ATETV videos. He suggested adding a search function to the ATETV site that would allow visitors to search for local colleges offering courses such as those featured in the videos. The Director of Marketing concluded his interview by saying:

It has some good information on it. I would hate to see it go away.

- **General Manager of UDC-TV**

The University of District Columbia operates a 24-hour educational cable program service, UDC-TV, which serves as the District government's non-commercial, adult education program service. UDC-TV reaches approximately 187,000 residential households in the District of Columbia, as well as every major hotel, federal and Congressional office and the White House. The channel offers a wide-range of educational programs from the UDC Forum featuring a panel of UDC faculty discussing issues related to research and education to the Healthy Mind, hosted by the head of UDC Student counseling and featuring issues related to mental health. The General Manager of UDC-TV described the mission of the channel as "extending the educational services of the University of the District of Columbia via the cable channel and promoting the University to the public."

UDC-TV has been airing short segments from ATETV since December 2011. The General Manager, who is constantly looking for programming for the 24-hour station, found the ATETV Web site when he googled 'educational programming.' He viewed several videos and recognized the high quality of the content and production. He also noticed the fortuitous alignment of the ATETV content with the mission of the station.

I have yet to find any other resources like this and I have looked quite a bit. I am constantly looking for free programming and programming that has to deal with higher education and it is just not out there. This was a real resource for us and fits with who we are.

He then contacted ATETV to see if he could run some short segments on UDC-TV and they were delighted to have another venue for their videos. The segments he has aired featured biotechnology and issues related to going back to college.

[The segments] fit with what we are creating here with our channel which is workforce development and higher education. They simply

encourage people to pursue higher education and that is why they fit for us.

The General Manager is currently considering whether it would be possible to add entire ATETV half-hour programs to the station's schedule. He envisions a partnership with ATETV, where UDC-TV provides structure and visibility and ATETV provides valuable content. He is very interested in partnering with ATETV to develop and showcase more videos.

I would really like to become a home base for them [ATETV] in the nation's capital... it will be an environment that will showcase their product. I think that is the best way to get visibility when [they] can say that there is a [university] cable station, that is airing [their] product in the nation's capital. I often say, it is 187,000 homes in the District of Columbia and we are probably the most influential 187,000 homes in America, if not the world. We are in every major hotel, the White House, every federal building, Capitol Hill, throughout. They all have access to this channel.

- **Web site Manager for an ATE Center**

This ATE Center produces a Web site, targeted to educators and technicians, and focusing on manufacturing education, engineering and STEM. The Web site manager found the ATETV site a few years ago when he was looking online at ATE groups, projects and centers. He reported that he appreciates the quality and content of the ATETV videos.

They are short, they get to the point and they highlight new technologies that might interest educators to share with students. I think that is primarily what I like about them, the host kind of seems a little bit younger and appeals to students that might be interested in this kind of career.

He now visits the site every three months to find new videos to post on his center's Web site. In general he posts videos that are manufacturing related but also posts those that cover engineering technologies, or highlight different careers and centers.

- **Executive Director of an ATE Regional Center**

The Executive Director manages an ATE Regional Center that focuses on biomanufacturing. A few years ago, ATETV produced videos at her Center and she uses them frequently as a resource in several different

settings. She shows them at conferences to highlight the work of her Center and she has them posted on two of the Center's Web sites featuring biomanufacturing training, curriculum and career awareness.

The Director reported that one of the powerful benefits of the videos is that they illuminate a career path not many people know about or understand as a possibility for them. She uses the videos to help students and "career changers" to understand what biomanufacturing is and to explain how they would go about pursuing a career in this field.

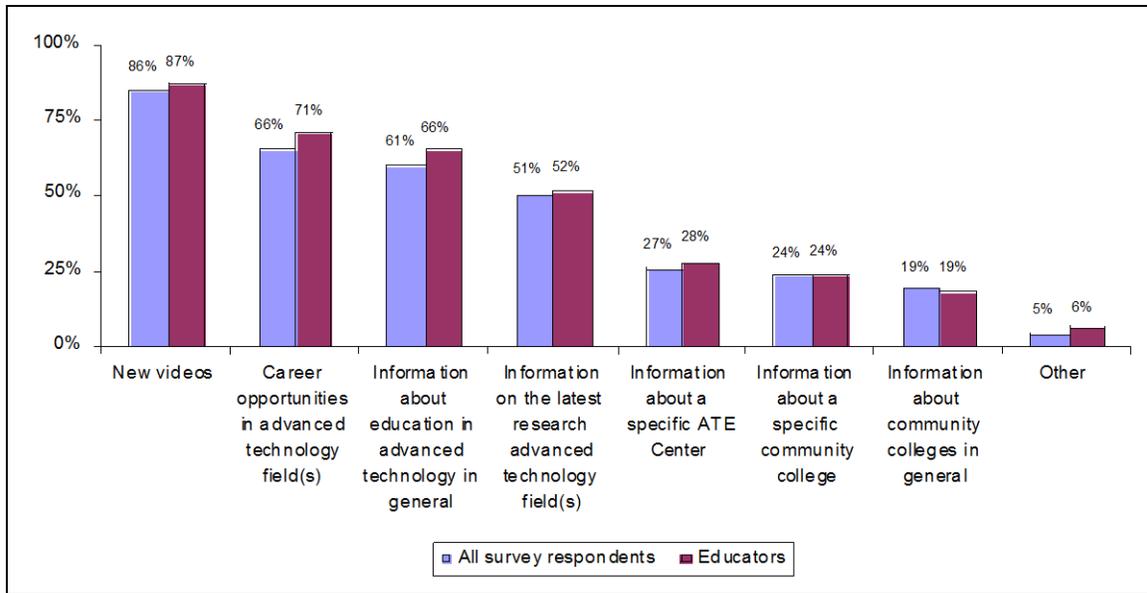
No one knows about this career path in biomanufacturing and so one of the things that ATETV did, they interviewed people on the street, I don't know where it was, Boston, I think and asked them what is biomanufacturing and they said stuff. It was good because no one knew what it was... they don't understand that there is such a field.

She is grateful to ATETV for producing videos that are "professionally rendered and ask the right questions."

III. Refinements and Planning for the Future

Overall, 98% of survey respondents reported they would visit the ATETV Web site again. When asked what they would be looking for, new videos ranked highest (86%), followed by career opportunities (66%), information about advanced technology education (61%), and information on the latest research in advanced technology fields (51%). Fewer respondents said they'd look for information about a specific ATE center or community college, community colleges in general, or some other feature.

Percent of all survey respondents and educators who said they would look for specific features if they visited the ATETV Web site again



Interviewees also reported that they visit the site frequently, looking for new content. Often the emails from ATETV alerting them to new content is what prompts them to visit the site. Many noted the importance of keeping the videos current since visitors to the site are looking for current opportunities in cutting-edge technology and by definition, this technology is constantly evolving. One mentioned the need for help in understanding if existing video content is becoming outdated or still current:

I did notice on a number [of videos] that I went to that they seemed to be dated. There were some there for mid 09 and so they were 2 years old. Now, it could be that the technology process is covered in the video may not have changed, but I don't know that and so I am always concerned when I see something [that old]. It is like going to a Web site and seeing old news there.

Project PI, ATE Center

Some interviewees had suggestions for improvements including: add a drop-down menu of the different categories of topics (biotechnology, agriculture, etc.), add search function that allows a user to search by program or school and highlight this function on the homepage as a resource for students, and add links or menus that could help Web site users find local connections—courses and employment—to the topics presented on ATETV. In addition, several of the interviewees wanted information about how to have their Center featured on ATETV.

Of the few survey respondents who would not revisit the site, we asked what would encourage them to come back to ATETV.ORG. Educators wanted greater variety in content, easier ways to navigate the site and

watch the videos, and more detailed information within the videos. Others said job postings and learning opportunities could bring them back to the site.

In general, users reported that the site and videos are easy to use. However, some interviewees said that while the files are easy to embed, they can be difficult to download. The comments below are representative of those we heard from people who experienced difficulty downloading the videos from ATETV.

The zipped files are a pain to download, would prefer a method of download compatible with a download manager.

Survey Respondent, Educator

The download itself was very cumbersome. I actually ended up not using the file because it was too big for my project. I only wanted a section of the entire program, but it would not allow me to download the section I wanted. However, I did go to Youtube.com and downloaded exactly what I wanted.

Administrative Assistant, ATE Center

Given the breadth and depth of the ATE field, reaching more potential users through marketing and getting the word out will be an ongoing challenge. Several of the interviewees within the ATE community made a point to say that the site is a great resource and needs more promotion. Much work has been done in this area—ATETV staff has presented at several ATE conferences, placed ads in the magazines for the National Science Teachers Association magazine and the National Council for Teachers of Mathematics and used social marketing strategies such as Facebook and Twitter. The advisory board has done some promotion as well by reaching out to their connections within the ATE community and beyond. To date, the most successful approach, resulting in the greatest number of hits on the Web site, has been to send out targeted letters to community colleges and presentations at conferences. Continued focus and effort on increasing awareness of ATETV.ORG and the resources it provides is necessary to to further its reach and use.

IV. SUMMARY

The evaluation findings provide strong evidence that ATETV is a valued and important online resource that supports and strengthens the ATE community. Described as “invaluable”, 98% of those who visit the Web site plan to visit it again. The site reaches audiences across the country (and some internationally), offering educators, students, parents, employers,

and job seekers relevant and useful information about ATE in an appealing and accessible format.

At this time the site features over 200 video segments exploring all aspects of a variety of cutting-edge careers along with the ATE Centers and projects that support students on their path towards these careers. The videos are one of the most frequently used elements of the ATETV site and the users report that the videos are high quality and flexible enough to be used in a variety of ways to support a wide range of different programs.

Because of ATETV, hundreds of educators and thousands of students have access to information and real-life examples of opportunities in the field of ATE, as well as tools to help them find ATE programs and community colleges. The ATETV effort merits further funding to continue to support the ATE community by maintaining the Web site, creating new content and resources, and extending its reach.