



**A QUANTITATIVE
INVESTIGATION OF
TEACHERS AND
THE JASON MULTIMEDIA
SCIENCE CURRICULUM:
REPORTED USE AND IMPACT**
YEAR TWO EVALUATION REPORT



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*SUBMITTED TO THE
JASON FOUNDATION FOR EDUCATION
AND
U.S. DEPARTMENT OF EDUCATION STAR SCHOOL PROGRAM*

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EXECUTIVE SUMMARY

Introduction

The JASON Multimedia Science Curriculum is used differently by different teachers under different school and community circumstances (see Ba et al., 2001; Martin et al., 2001). To understand better how the JASON teachers use the various JASON curriculum components (e.g., print curriculum, videos, live expedition broadcast), we conducted one large-scale survey targeting this year's 25,000 teachers who participated in the JASON Project, and a follow-up large-scale survey targeting the 1,896 JASON teachers who responded to the first survey. We received back a total of 1,133 follow-up surveys. The first survey's response rate is estimated at 8% , and the follow-up survey's at 60%. We conducted a series of analyses on the data collected from both surveys: frequencies, cross-tabulations, and correlations.

Findings

The results below provide a portrait of the teachers involved with the JASON Project. The JASON teachers' most salient characteristics are that they:

- Come from 45 U.S. states, with the highest number of participants in this study being from California, New York, Texas, and Ohio
- Are female and white
- Have Master's or undergraduate degrees
- Have participated in science workshops or coursework
- Have a lot of teaching experience (average of 15 years)
- Have access to high-speed Internet connectivity in their school
- Teach one or more grades between 4th and 7th grade or elementary and secondary school
- Serve a white student population with a range of academic placement levels and socioeconomic backgrounds
- Teach 45- and 50-minute class periods
- Are not told often what to teach in their classroom
- Have structured time to meet with colleagues
- Have their students review and revise their own work
- Have students engage in group research activities

- Assess their students using presentations, reports, or multiple-choice tests

The main findings about teachers' past and current experience with the JASON curriculum reveals that they:

- Have been in the JASON Project for either one year or between two and four years
- Receive professional development on how to use the JASON curriculum
- Are frequent users of the JASON curriculum in their classroom
- Use three to four of the curriculum components, with the print curriculum being the most used, followed by the videos, the live expedition broadcast, and Team JASON Online
- Reuse JASON print curriculum materials
- Make their decisions on which sections of the print curriculum to use by topic and standards
- Rate favorably the print curriculum format
- Make heavy use of the curriculum in January and February
- Meet most of their teaching objectives through the use of the JASON print curriculum materials
- Meet most of their assessment objectives through the use of the JASON print curriculum materials
- Use the videos to introduce the new curriculum to students, to add to the print curriculum as a teaching tool, and in conjunction with specific lessons and activities
- Rate their students' experience with Team JASON Online as good to excellent
- Find the question-and-answer format an effective way to share information with students about the curriculum topic
- Find it important that the JASON expedition be broadcast live
- Would still take part in the JASON live broadcast if it took place every two years instead of every year
- Meet their students' learning objectives: collaboration, problem-solving, research, assessment, and technology

We found the following items to be statistically significant in the ways teachers used the curriculum effectively:

- Technology, such as quality of school Internet connectivity, teacher's technology experience, and teacher's frequent use of technology

- Teaching and JASON past experience
- Students' grade levels, students' academic placement levels, team-teaching, and length of class periods
- Regularity of use during the school year
- The type of community in which the JASON schools were located: suburban, urban, and rural
- The ways JASON teachers made decisions about which parts of the print curriculum to use in their classrooms: topic, standards, classroom period, number of months dedicated to the JASON Project during the school year.

Conclusion and Recommendations

The above survey results provide a broad view of the characteristics of the JASON teachers based on their personal, educational, community, teaching, JASON, and student backgrounds, and of their effective use of the different curriculum components. JASON teachers teach in the upper elementary and lower middle grades, are experienced teachers, and are comfortable with digital technologies. They use the JASON Project in their classroom a lot during a six-week period, select units from the curriculum to cover in their classroom based on topic and standards, reuse the print curriculum, and meet their assessment objectives using the JASON curriculum. Further, they value the hands-on activities, and the connection to a community of researchers.

Overall, teachers rate positively their students' experience with the JASON curriculum, and the TJO as good to excellent. They testify that it meets their students' learning objectives in the following areas: collaboration, problem-solving, research, assessment, and technology.

Within different school and community circumstances, we found the following to be statistically significant in the ways teachers made effective use of the curriculum.

- We found that teachers who have more experience with technology use the JASON curriculum more comprehensively. This is unsurprising, given the nature of JASON and its close relationship to technology. JASON professional development should focus more on technology uses in the classroom, thus making it easier for JASON teachers to use more of its components, especially the live expedition and TJO.
- We found that teachers participated in local training workshops at the school, district, and regional levels. Further, they indicated that these trainings were helpful to them in using effectively the JASON curriculum in the classroom.
- We found that the JASON curriculum was used more comprehensively at the lower grade levels. Since many JASON features address middle- and high-school age student needs, an attempt should be made to acquaint middle and high school teachers with the different JASON features, as well as find out why more middle and high school teachers do not use the JASON multimedia science curriculum

- We found that teachers who team-teach use JASON more comprehensively. The JASON Foundation for Education who is sponsor of the project should encourage and recommend team-teaching. Professional development should provide teachers with the tools for successful engagement in team-teaching.

This study suggests that the basic multimedia curriculum components do not need much improvement, but the ways those components are made available to teachers could certainly be improved to extend the reach of the project. In order to hold existing teachers and attract new ones, the JASON Project should go after those teachers not represented in this sample, and who do not satisfy some of the above conditions of effective use of the JASON multimedia curriculum. This target group might include new or young teachers, teachers serving in underserved communities, who are most likely not to satisfy some of the above conditions, male teachers, and teachers struggling with teaching science in relevant and meaningful ways for their students.

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INTRODUCTION

Our first-year in-depth study of the JASON Project shows, among other findings, that different teachers use different aspects of the JASON Multimedia Science Curriculum under different school and community circumstances (see Figure 1), and that teachers are crucial to the successful and long-term implementation of the JASON Project (see Ba et al., 2001; Martin et al., 2001). To better understand JASON teachers' use of the various JASON curriculum components, we conducted focus group interviews (see Ba et al., 2002), one large-scale survey, and a large-scale follow-up survey with JASON teachers during this year's evaluation. This report discusses the results obtained from the two large-scale surveys.

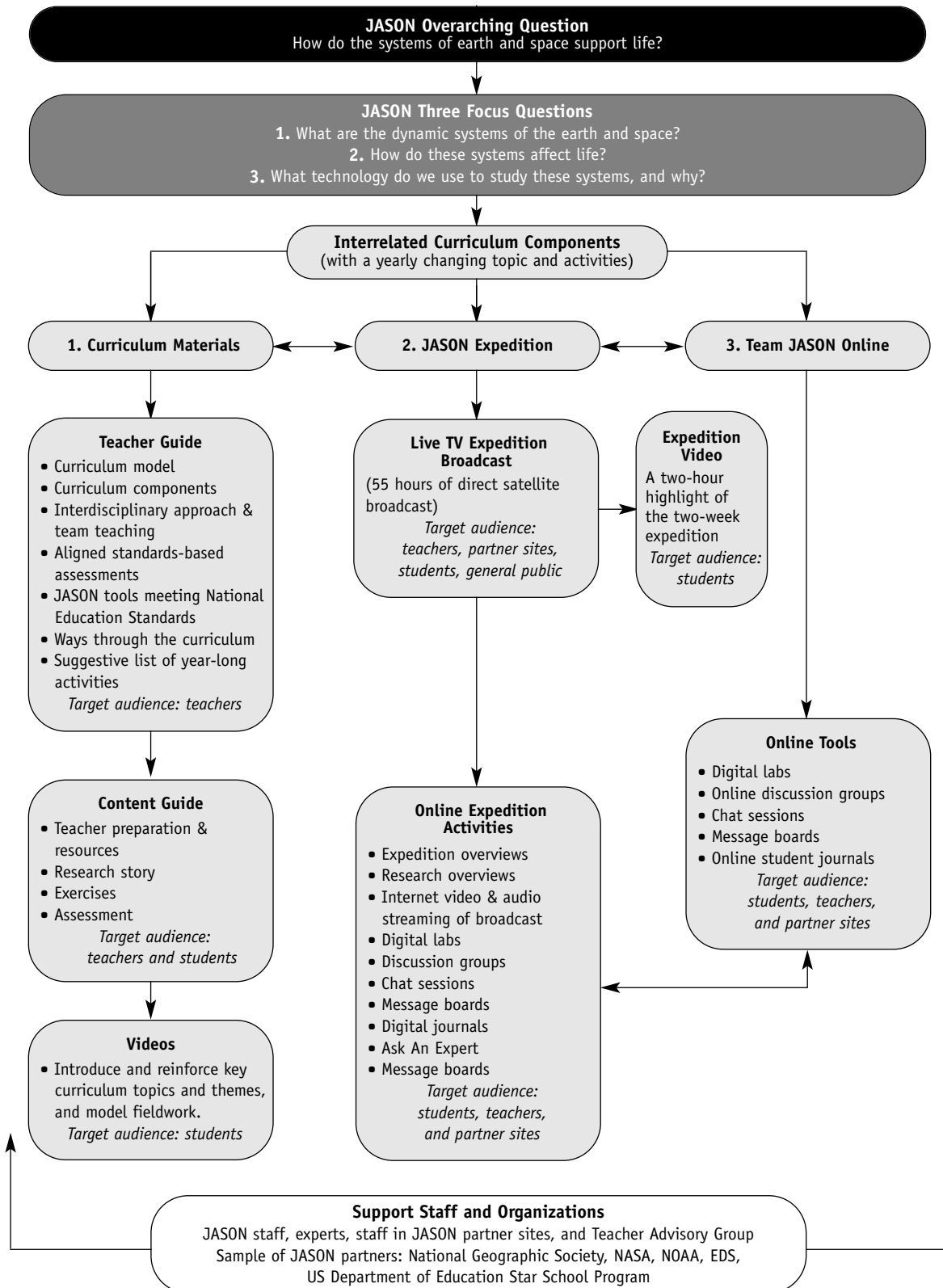
SECTION ONE: INITIAL LARGE-SCALE TEACHER SURVEY

Survey Development

In the development of this large-scale survey, we worked closely with several JASON staff, particularly the content development and evaluation teams, as well as the marketing department. We tried to include as many of their concerns and questions as possible in our initial survey framework, which was refined into a 66-question survey (see Appendix).

The survey focuses on teachers' backgrounds, including their teaching and JASON experience. We also asked them to share their experiences with and thoughts about the different components of the JASON Multimedia Science Curriculum: the print curriculum, Team JASON Online (TJO), the videos, and live expedition broadcast (see Figure 1).

Figure 1: The JASON Multimedia Science Curriculum Components



Survey Distribution

To get a sense of how many teachers participate in the JASON Project, we relied on the JASON Foundation for Education's two databases: (1) the JASON contact list, which includes the Primary Network sites, states, networks, and districts as data from the JASON marketing and distribution department; and (2) the online database maintained by the JASON technology team. The first database has a total of approximately 16,000 to 17,000 teachers' names and addresses, and the second contains a total of 9,000 to 10,000 teachers' email addresses along with other pertinent information. Obviously, there are some overlaps in this reporting system. We estimate that the survey was made available on paper and online to approximately 25,000 teachers.

Respondents were informed that the first 500 teachers who filled out the survey would be awarded a JASON/National Geographic Channel poster, and that all participants would receive a JASON lapel pin (see letter in Appendix). We received a total of 1,896 teachers' surveys: 849 online surveys (45%) and 1,047 paper surveys (55%). We obtained an 8% response rate, a conservative figure because of the overlapping numbers inherent in the databases used.¹

One caution may be that this eight percent sample is not a truly representative sample of people who have been trained on or use less often the JASON multimedia components. This eight percent sample may represent those JASON teachers who sent for materials, attended workshops, or are somehow on the JASON Foundation's mailing lists. As a result, our sample may be skewed in some way and that the more frequent users were more likely to answer our survey and that we do not have information about other users. For example, this is particularly important when comparing the number of elementary users with the number of high school users. It may be that high school teachers were more reluctant to complete the survey than elementary users.

Challenges

Surveys are "one of the common data collection strategies employed in educational research [today]" (Fetterman, 2002, p. 29). Although both surveys in this study allowed us to collect large amounts of data about the JASON teachers' use of the curriculum, we faced several challenges during the surveys' dissemination and preparation for analysis phases.

- For several reasons, each entry had to be checked for validity. Many teachers filled out both the paper and online survey, even though they were told to fill out only one. This created many duplicates in our database that had to be weeded out. Similarly, some teachers who returned the first survey gave the second survey to a colleague to answer. We used our main survey database to determine whether the teachers who answered both surveys were the same. Further, several non-JASON teachers answered the survey and we had to eliminate these entries from the database.
- The survey's website address was too long and got truncated in the email that was sent to

¹This is a precision rate of 2% - 3%, which is more than satisfactory.

teachers. As a result, they could not access the survey, and many did not think of cutting and pasting the survey's URL address into the address bar.

- Although teachers could save their survey responses at any given point, they did not understand the instructions and did not know how to bookmark the survey web page address.
- We re-entered most of the answers to the "open questions." For example, when asked how many years they have been using the Internet, teachers were expected to enter a numeric value. Instead, many teachers entered verbal phrases such as "about five and a half years." We had to check over and change all these entries to numeric values. Similarly, when asked to enter percentages, many teachers entered absolute numbers instead. We had to check over each entry to determine whether it referred to percentages or not, and then change the absolute numbers to percent values. When asked to rank statements, many teachers entered checkmarks instead of numeric rank values. As a result, we could not analyze rankings and had to change the checkmarks to a check/no-check type instead. We did the same thing when teachers provided detailed answers under "other" in response to survey questions. Whenever these explanations fit into one of the provided answers, we entered the appropriate answer.
- When asked whether they used a specific JASON component, some teachers would check "no" but still complete the questions relating to that component (this occurred only in the paper surveys — the online form prevented this situation). We did not include the responses for these cases in our analysis.

Some of these challenges are very common in survey development and distribution (Fetterman, 2002). Despite these difficulties with surveys, and especially online surveys, we were able to address most of them. Overall, we find that the benefits of reaching so many teachers (N=1,896) who were willing to answer more than 80 questions about the JASON Project make using surveys very worthwhile.

Analysis Process

We conducted a series of analyses on the data collected from the 1,896 participating teachers: frequencies, cross-tabulations, and correlations. We first used the frequency and cross-tabulation analyses to develop teachers' profiles based on their personal backgrounds (e.g., gender, education), teaching and technology experiences, and experience with the JASON Project and curriculum.

Second, we developed profiles of the teachers based on how effective they were in using the JASON curriculum. As mentioned above, the JASON Multimedia Science Curriculum consists of four

well-integrated components: print curriculum, Team JASON Online, videos, and live expedition broadcast (see Figure 1). Thus, we define as advanced users teachers who use all four components in the classroom. We assume that the more components a teacher uses, the more likely he or she is to implement the entire curriculum in the classroom. To identify any statistically significant relationships in teachers' use of the JASON Multimedia Science Curriculum, we correlated the number of components teachers used (one to four) with a variety of independent variables drawn from the teacher's personal background and school characteristics, using cross-tabulation and correlation analyses.

Survey Results

The survey results are organized into four subsections: (1) general teachers' backgrounds; (2) teachers' past experience with the JASON Project; (3) teachers' use of the different JASON curriculum components; and (4) teachers' effective use of the curriculum.

Teachers' Backgrounds

The most salient characteristics of the participating JASON teachers ($N=1,896$) are as follows. They:

- Come from 45 U.S. states (91.7%)
- Are female (86.2%)
- Have extensive teaching experience (average of 14.5 years)
- Have participated in science workshops or coursework (78%)
- Teach one or more grades between 4th and 7th grades (81%)
- Have access to high-speed Internet connections (68%)
- Assess their students using presentations (87%), reports (80%), or multiple-choice tests (77%).

The teachers who participated in the survey came from 46 states in the United States (including the District of Columbia),² and five other countries: United Kingdom, Singapore, Canada, Sweden, and Australia. The highest participation rates were registered in California, Texas, Ohio, and New York.

Of the 1,896 participating teachers, there were more female (86.2%) than male (13.8%) teachers. A little over half (54.5%) have graduate degrees, and 39% have only undergraduate degrees. In addition, most (78%) have some type of academic science training: 22% are certified science teachers, and 56% have taken science courses. Their average teaching experience is 14.5 years ($SD=9.5$), and they have been using computers for an average of eight years ($SD=5.2$) and the Internet for an average of 4.6 years ($SD=2.6$) as professional or instructional tools.

² In the U.S., there were no participants from New Mexico, North Dakota, South Dakota, West Virginia, or Louisiana.

Almost all the teachers (N=1,706) teach in elementary and middle schools: a little over half (53%) serve elementary schools, and 37% serve middle schools. We have teachers (N=1,857) from all grade levels (1 to 12). Most (81%) teach one or more grades between 4th and 7th grades. Fifty-three percent teach one grade level, and 46% teach more than one grade level. These teachers serve an average of 22 students per class.

Most of the teachers (54.5%) teach a scheduled class period, 15% use block scheduling, and 1% use some other flexible form of lesson scheduling. A little over half the teachers (52%) teach science in their classroom at least once a day, and 24% teach it two to three times a week. More than half the teachers (68%) serve in schools with high-speed Internet connections, and 55% engage in computer and Internet activities a few times a week with their classes.

More than half the teachers use the following assessment techniques in their classrooms: student presentations (87%), reports (80%), multiple-choice tests (77%), and essay exams (59%).

Teachers' Past Experience with the JASON Project

The main findings about the teachers' past experience with the JASON Project reveal that they:

- Receive professional development on how to use the curriculum
- Are frequent users of the curriculum in their classrooms.

The teachers heard about JASON primarily from other teachers (25%), mailings/flyers (12%), and district/county and school administrators/curriculum coordinators/department chairs (8%).

Including the current year, the teachers have been participating in the JASON Project for:

- One year (36.6%)
- Two to four years (44.5%)
- Five to nine years (14.5%)
- Ten or more years (3.6%).

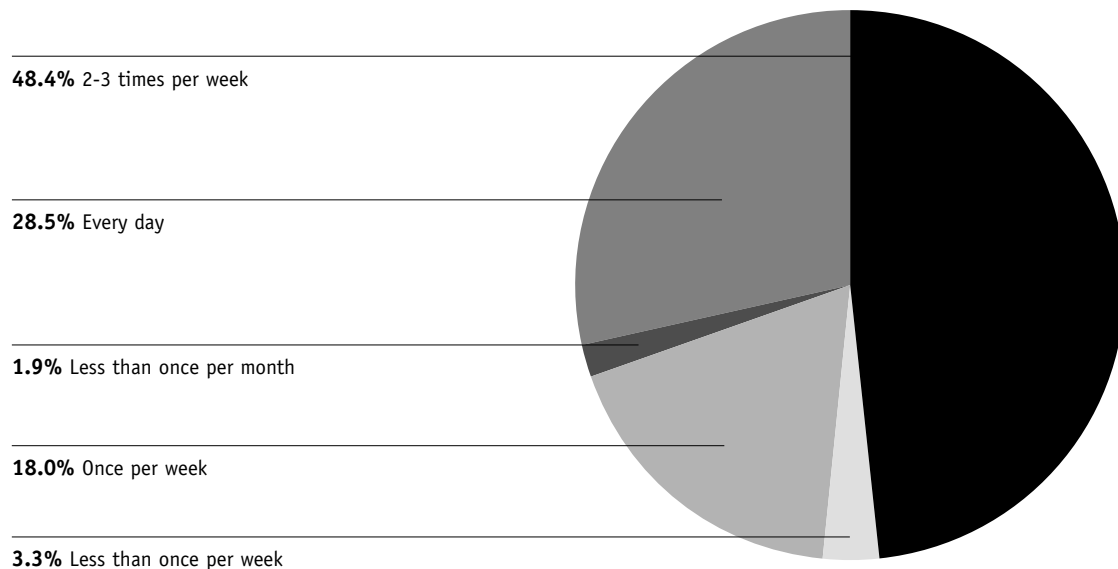
Of the 36.6% first-year JASON teachers, 34% are in their first 5 years of teaching, 17% have been teaching for 6–10 years, 27% have been teaching between 11–20 years, and 22% have been teaching for more than 20 years. Most of the first-year JASON teachers have a range of teaching experience and are not new to teaching, based on a mean teaching experience average of 13 years with a range of 0 to 38 years. This finding has major implications for the marketing of JASON curriculum materials and recruitment of new teachers.

Most teachers received some form of professional development training on how to use three of the JASON Multimedia Science Curriculum components: print curriculum (83%), Team JASON Online (66%), and videos (64%); less than half (45%) received training on how to use the live expedition broadcast. Most teachers (67% or N=1,266) found the in-school, in-district, or regional training to

be a very useful JASON professional development component as compared to face-to-face training at a live broadcast site (49% or N=938); JASON Project online professional development (36% or N=678); face-to-face training at the National Educators' Conference (22% or N=422); videoconferencing (23% or N=441); or the JASON Academy (16% or N=306).

More than half the teachers (55%) use the JASON Project for six weeks or more during the school year. During those weeks, most teachers (92%) use the curriculum frequently in their classes: every day (28%), two to three times a week (48%), or once a week (18%) (see Graph 1). With the JASON Project, 43% of the teachers team-teach JASON.

Graph 1. How often did you use the JASON Project in your classroom?



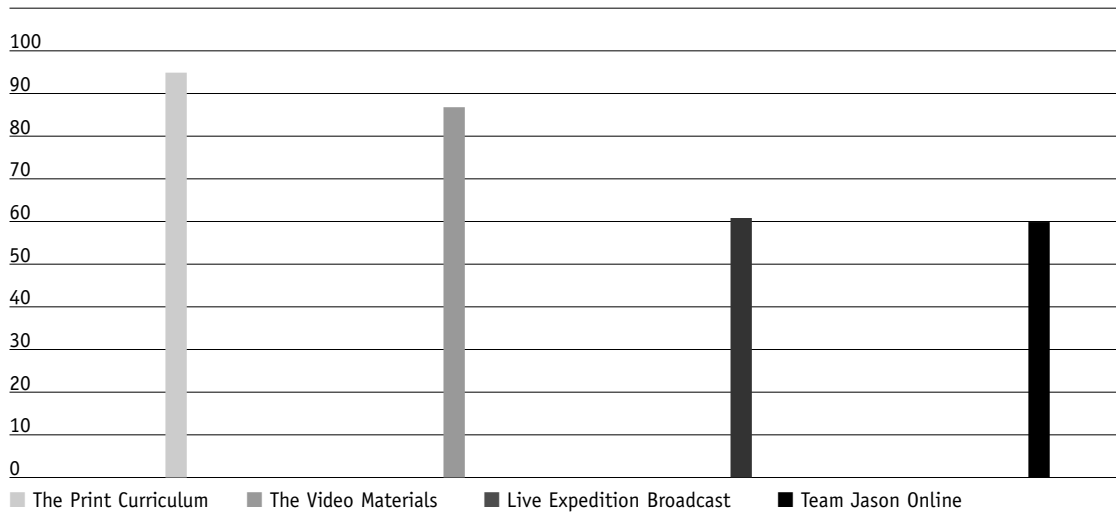
Teachers' Use of JASON Curriculum Components

Teachers use and think about the different curriculum components in various ways (see Graph 2). They:

- Use the print curriculum (94%), video materials (87%), Team JASON Online (60%), and participate in the live expedition broadcast (61%)
- Rate the print curriculum format favorably
- Experience heavy use in January (85%) and February (74%)
- Meet most of their teaching objectives through the use of the JASON print curriculum materials
- Meet most of their assessment objectives through the use of the JASON print curriculum materials

- Meet their students' learning objectives: collaboration (81%), problem-solving (81%), research (69%), assessment (68%), and technology (62%).

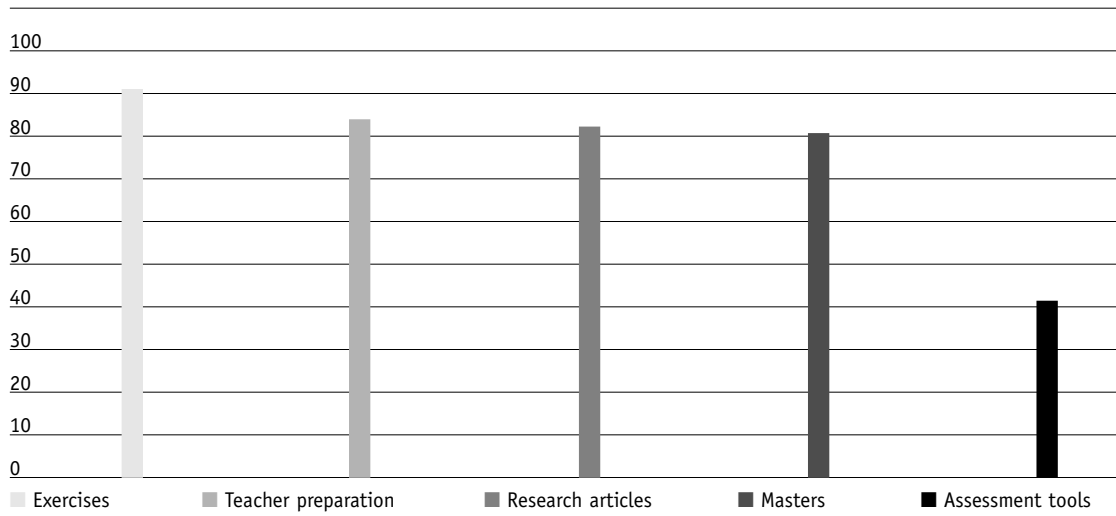
Graph 2 : Percent of users of each component of JASON



The Print Curriculum

Most of the teachers (94% or N=1,778) use the print curriculum, especially JASON XII (65%), XIII (86%), and/or XI (40%), and reuse the JASON curricula (63%). They rated the print curricula format (see Graph 3) as not needing much improvement in terms of its:

- Research articles (93%)
- Teacher pages (92%)
- Delivery to schools (89%)
- Structure (84%)
- Visuals (e.g., tables, graphs, and diagrams) (84%)
- Length (80%)
- Assessment tools (77%)
- Age-appropriate activities (76%).

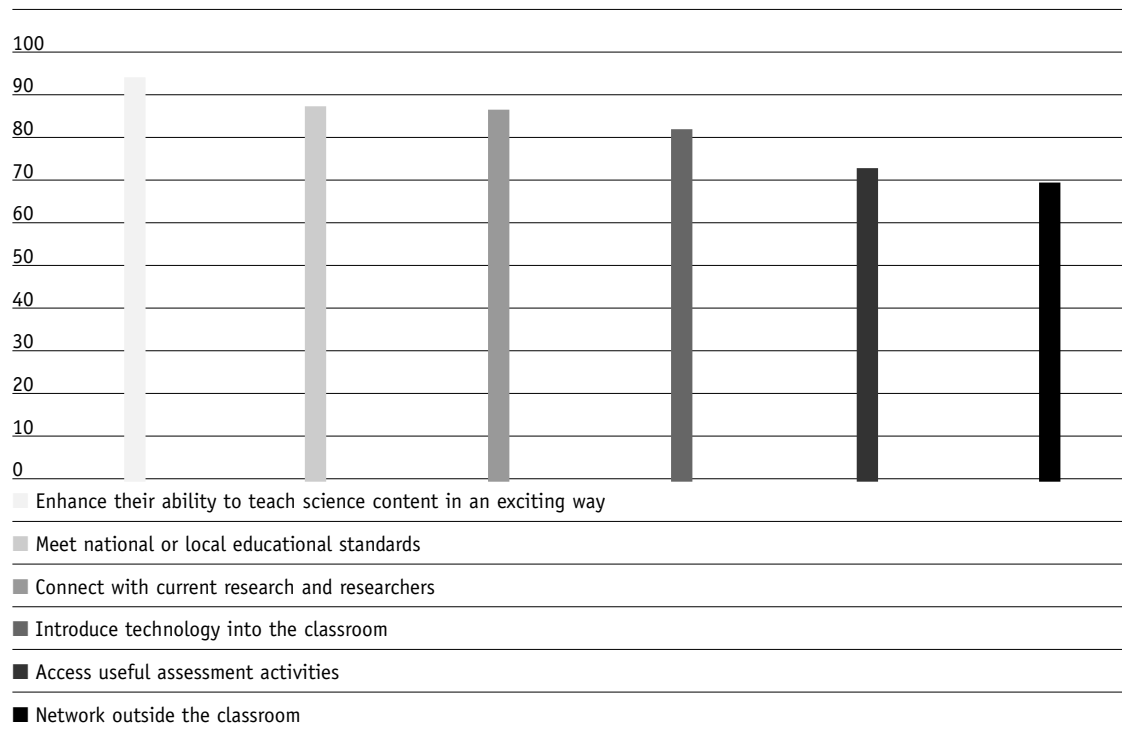
Graph 3 : Percent of users of each unit of the print curriculum

The print curriculum is heavily used between November and February, but the two heaviest use months are January and February. Use varies as follows: November (51%), December (59%), January (85%), and February (74%). According to the teachers, they use most parts of the JASON printed curriculum: exercises (91%), teacher preparation (84%), research articles (81%), and masters (80%). Fifty-four percent of the teachers report using the assessment tools provided in the print curriculum. Most teachers who used the assessment tools found the JASON poster (76% or N=1,011), journal (78% or N=1,096), student self-assessment tools (74% or N=1,032), and standards and assessment charts (79% or N=1,061) to be useful in their assessment of JASON activities.

Most teachers say that the print curriculum helps them to (see Graph 4):

- Enhance their ability to teach science content in an exciting way (94%)
- Meet national or local educational standards (88%)
- Connect with current research and researchers (87%)
- Introduce technology into the classroom (83%)
- Access useful assessment activities (73%)
- Network outside the classroom (70%).

Graph 4 : Percent of teachers who say that the print curriculum helps them to:

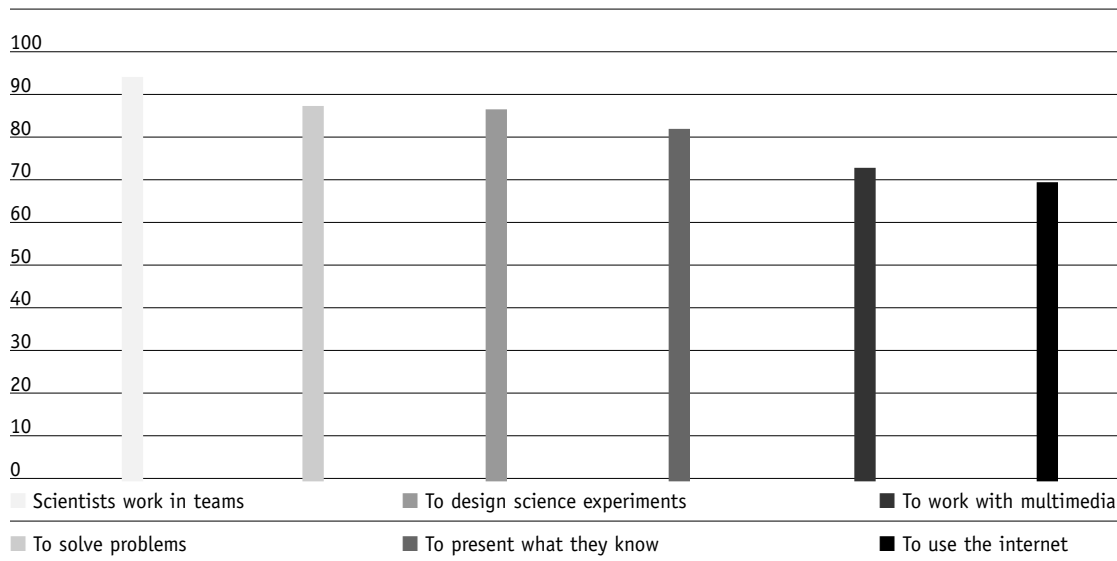


Further, the curriculum helps teachers meet their district/school (80%) and state (79%) standards, assess student performance (69%), and prepare their students for testing (54%).

Most teachers say that the print curriculum helped their students learn more about how (see Graph 5):

- Scientists work in teams (81%)
- To solve problems (81%)
- To design science experiments (69%)
- To present what they know (68%)
- To work with multimedia (62%)
- To use the Internet (59%).

Graph 5 : Percent of teachers indicating the print curriculum helped their students learn more about how:



Videos

Most teachers (87% or N=1,646) use the JASON videos in their classrooms, and this often occurs during the months of December (42%), January (76%), and February (56%). The prologue video was the most used by teachers (92% of the teachers using the videos), followed by the expedition update video (81%), and the expedition highlights video (61%). Most teachers (86%) use the videos to introduce the new curriculum to their students: as an additional teaching tool (70%) and in conjunction with specific lessons and activities (70%). They rate all three videos as being educational: expedition update video (95%), prologue video (93%), and expedition highlights video (93%). Most teachers who use the videos (71%) believe that the videos do not need improvement. Further, 36% of the teachers in the overall sample indicate that they use past years' live expedition videos.

Team JASON Online

Sixty percent of the teachers (N=1,135) take part in Team JASON Online (TJO). They engage most of the time in the following activities: reading about the year's JASON expedition (81%), doing digital lab activities (60%), using teacher administration tools (55%), writing entries in JASON journals (50%), and using message boards (50%). More than half the teachers use TJO between November and March, with heavy use in December (69%), January (88%), and February (80%).

Eighty-one percent of the 1,135 teachers using TJO go to the JASON website at least once a week.

Less than half (40% or N=437) of these teachers use the assessment tools available to them on the JASON Project website.

Just over two-thirds of the teachers using TJO say their students visit the site at least once a week. Most of the teachers (87%) rate their students' experience with TJO as good to excellent. Most of the teachers say that TJO helps them to:

- Enhance their ability to teach science in an exciting way (95%)
- Connect with current research and researchers (94%)
- Introduce technology into the classroom (93%)
- Learn how scientists work in teams (91%)
- Encourage students to develop their own questions (86%)
- Learn how to use the Internet (86%)
- Network outside of the classroom (81%)
- Assist students in exploring careers (81%)
- Learn how to design science experiments (78%).

Live Expedition Broadcast

Most (61% or N=1,151) of the teachers report having seen the JASON broadcast live, and more than half of them say that they watched live JASON XI/Going to Extremes (55%) and JASON XII/Hawaii (77%).³ Most teachers (61%) watched the broadcast at a Primary Interactive Network site, followed by a smaller percentage of teachers who watched it at a network site (17%) or in a classroom (13%).

A very high percentage of the teachers who watched the broadcast live (93%) think that the question-and-answer session format made available during the live broadcast is an effective way to share information with students about the topic. They also found the demonstrations helpful (72%).

For most of these teachers (87%), it was important that the JASON expedition be broadcast live. The live broadcast assisted them to:

- Enhance their ability to teach science content (81%)
- Introduce technology into the classroom (74%)
- Connect with current research and researchers (86%)
- Network outside of the classroom (67%).

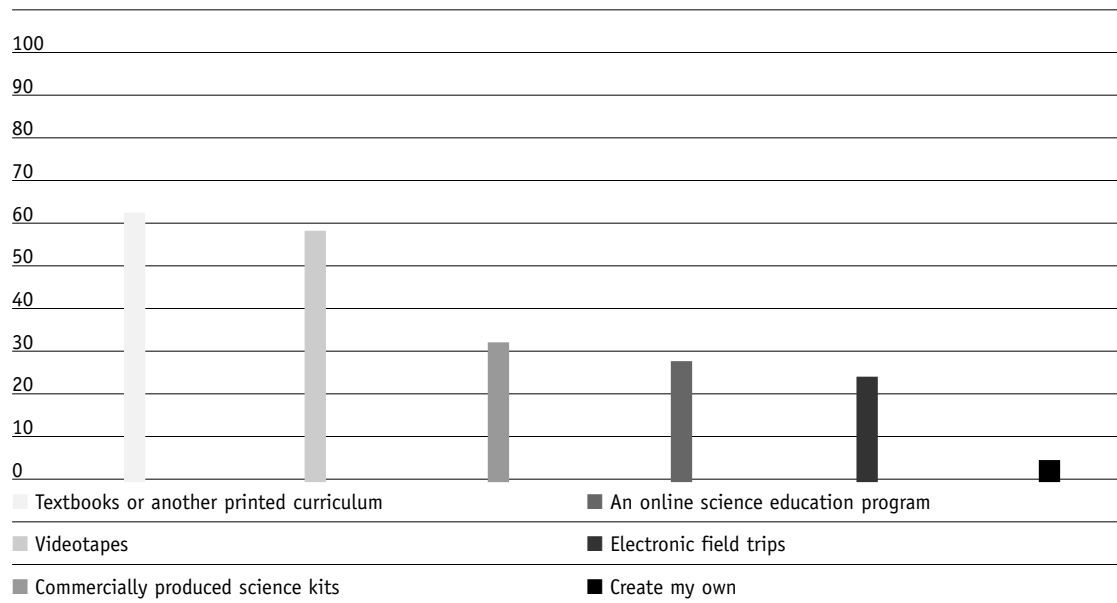
³ Most teachers responded to our survey before the JASON XIII/Frozen Worlds live broadcast was aired.

Of the 1,896 participating teachers, most (70%) said that they would take part in the JASON live broadcast if it took place every two years instead of every year.

When asked what they would use if the JASON Project Multimedia Curriculum materials no longer existed (see Graph 6), they responded as follows:

- Textbooks or another printed curriculum (63%)
- Videotapes (59%)
- Commercially produced science kits (32%)
- Online science education programs (28%).

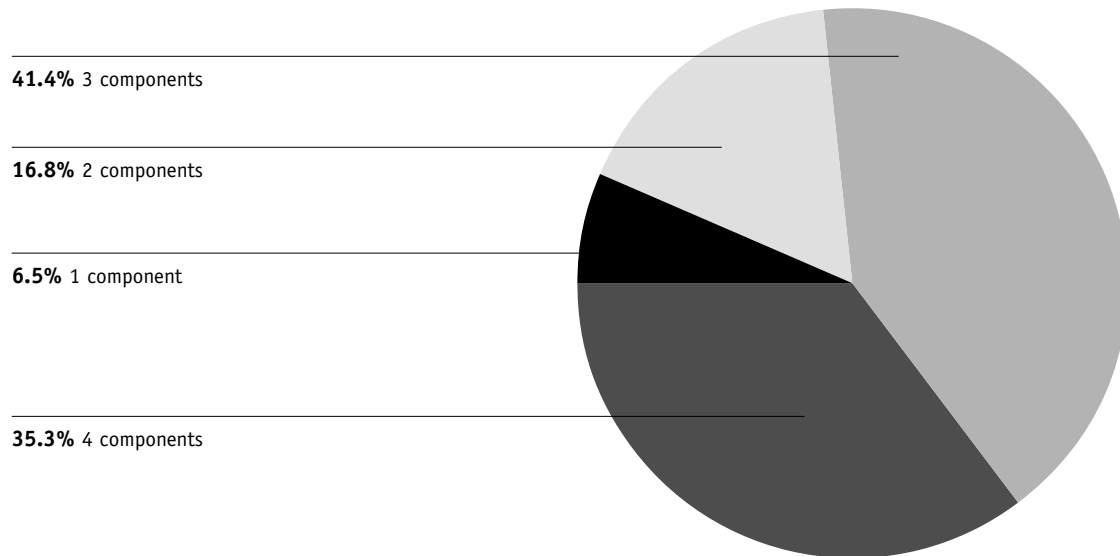
Graph 6 : Percent of teachers who say they would use the following if JASON no longer existed:



Teachers' Effective Use of the Curriculum

The teachers' profiles were based not only on their backgrounds, but also on how effectively they use the JASON Multimedia Science Curriculum. We defined teachers who use all four of the JASON Multimedia Science Curriculum components in the classroom as being advanced users and assumed that the more components a teacher uses, the more likely he or she is to implement the entire curriculum in the classroom (see Graph 7).

Graph 7: Percent of teachers using different number components:



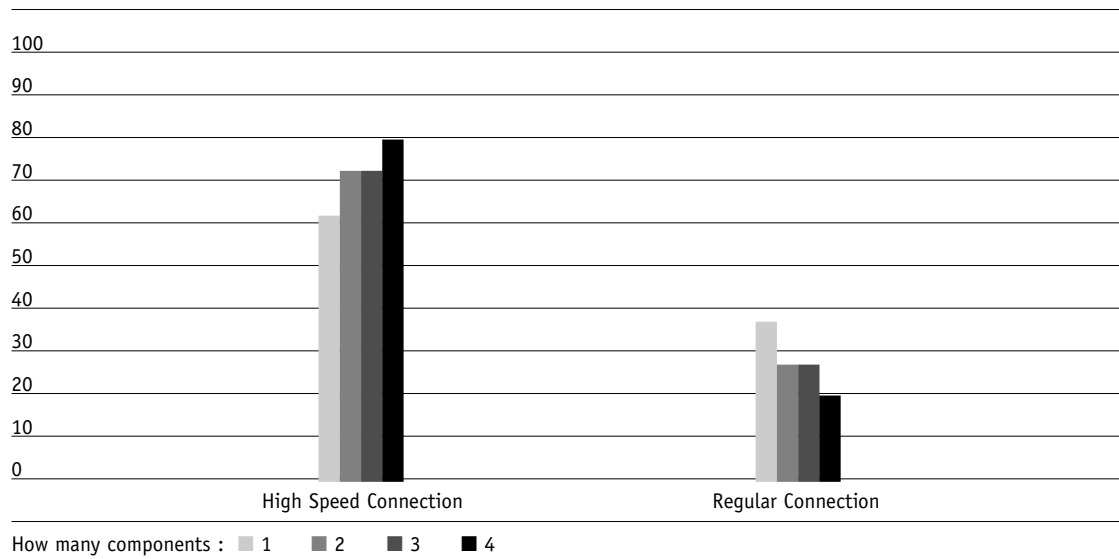
To identify any statistically significant relationships in teachers' use of the JASON Multimedia Science Curriculum, we performed cross-tabulations and correlations on our "effectiveness" variable with a variety of independent variables drawn from the participating teachers' personal backgrounds and school characteristics. We found the following to be statistically significant⁴ in the ways teachers made effective use of the curriculum:

- Technology, such as the quality of schools' Internet connections, teachers' technology experience, and teachers' frequent use of technology

Teachers from schools with high-speed Internet connections used significantly more components than did teachers from schools with no high-speed connection (Cramer's V value = 0.10, $p < .01$) (see Graph 8).

⁴ The Following findings are statistically significant at the .05 level. "Statistically significant" means that we place a confidence of 95% in the decision that the relationship between variables is not equal to 0. There is only a 5% probability that the findings are attributed to chance and not to a real relationship between variables.

Graph 8 : Percent of teachers using each number of components by school type of Internet connection

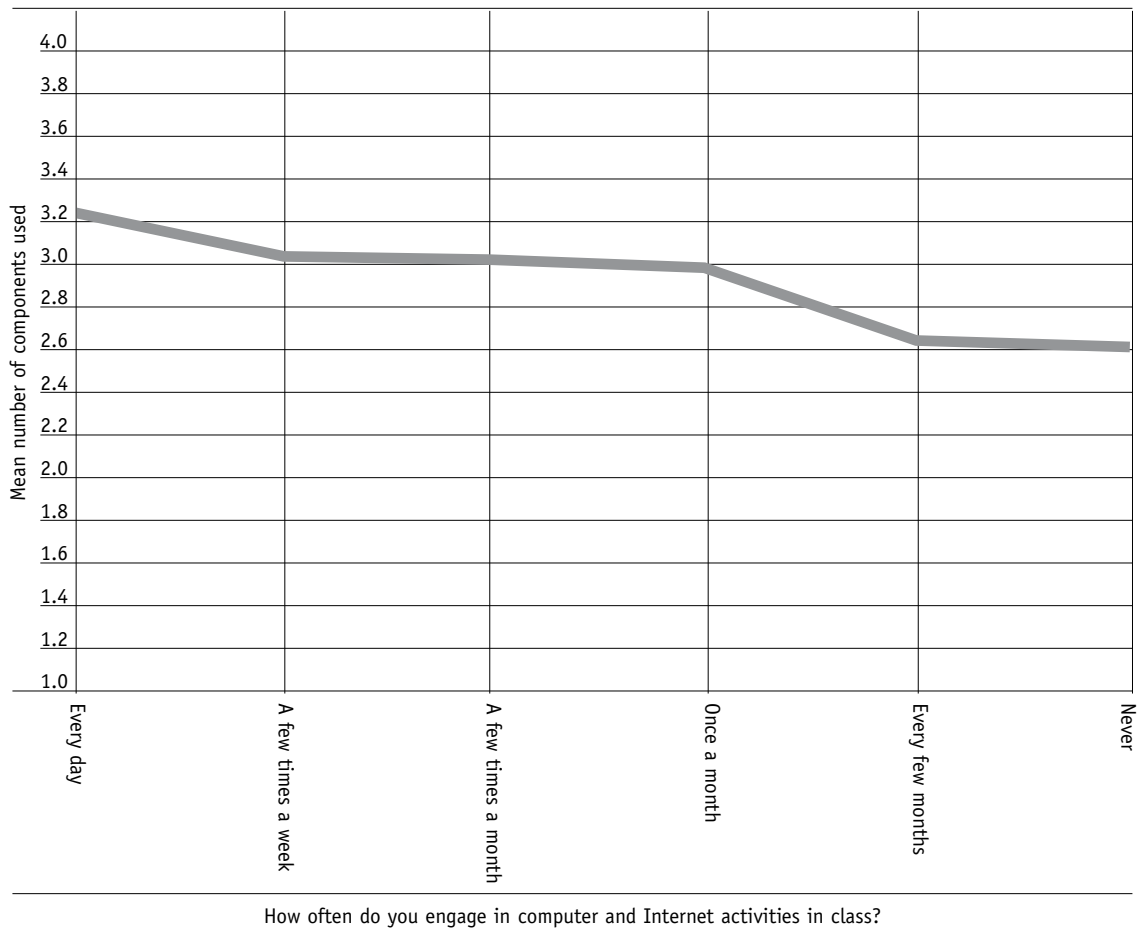


There was a significant relationship between the level of a teacher's experience with computers and the Internet, and the number of components he or she used. More technology experience was associated with greater use of curriculum components (for Internet $r = .17$, $p < .01$; for computers $r = 0.13$, $p < .01$).

There was a significant relationship between the frequency of teachers' engagement in computer and Internet activities in class, and the number of components they used (see Graph 9). More frequent engagement with computer and Internet technologies was associated with greater use of curriculum components (Kendall's tau- = - 0.14; $T = -7.61$, $p < .01$).⁵

⁵Some of the correlation results are counter in nature, that is, advanced use of JASON may correspond with an increase in the value of one variable, and with a decrease in the value of a different variable depending on how the variable is coded. In these cases, the values of the statistical indicators may be negative, even though the identified relationship is positive.

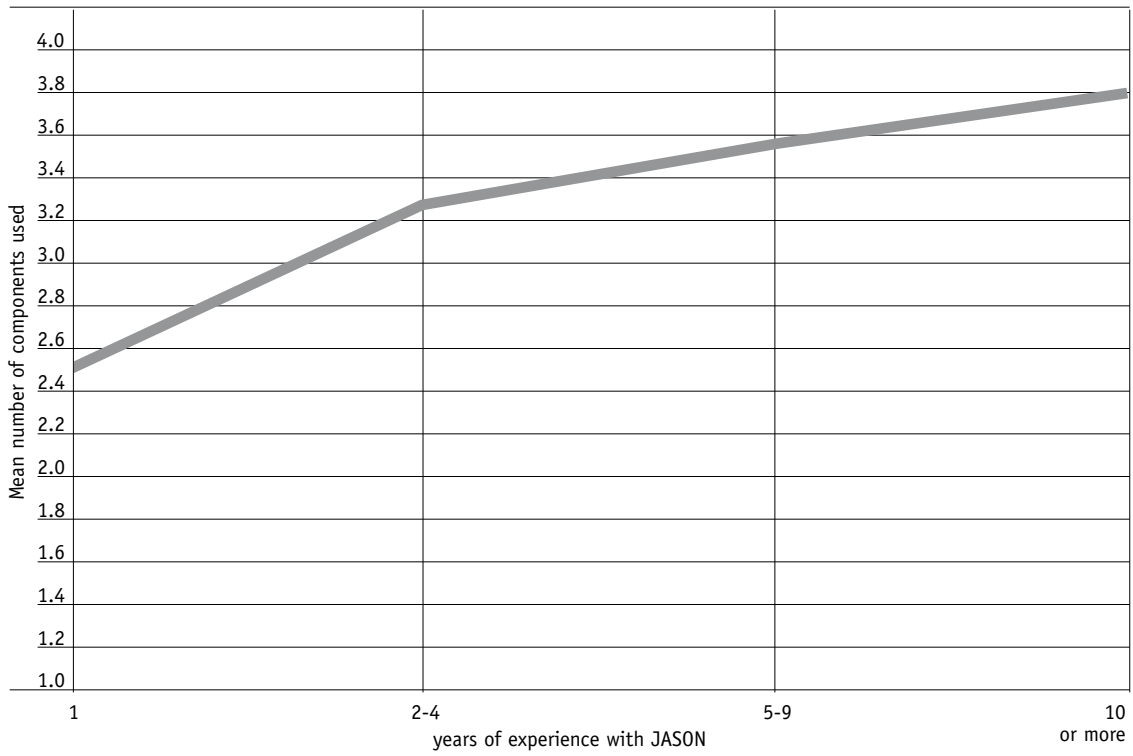
Graph 9 : Mean number of components used by frequency of engagement computer and Internet activities in class



- Teaching and past JASON experience

There was a significant relationship between teachers' teaching experience and experience with the JASON project, and the number of components they used (see Graph 10). More past experience was associated with greater use of curriculum components (for teaching experience $r_s = 0.12$, $p < .01$; for JASON experience $r_s = 0.44$, $p < .01$).

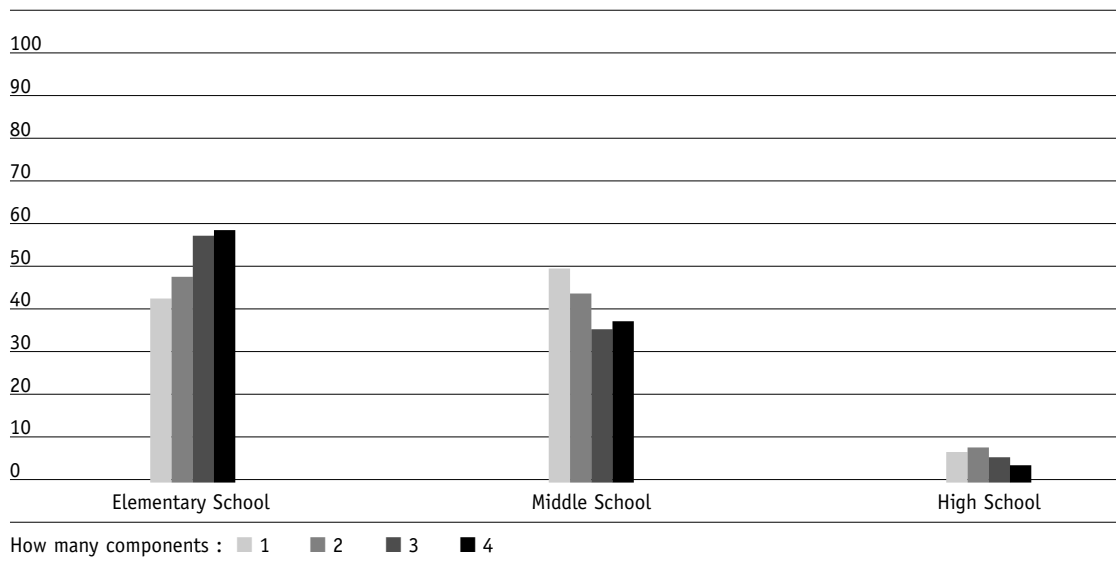
Graph 10 : Mean number of components used by years of experience with JASON



- Grade levels, students' academic placement levels, team-teaching, and length of class periods

There was a significant relationship between the grade level taught and the number of curriculum components used by the teachers (see Graph 11). Lower grade levels were associated with greater use of curriculum components (Kendall's tau = - 0.07, $p < .001$).

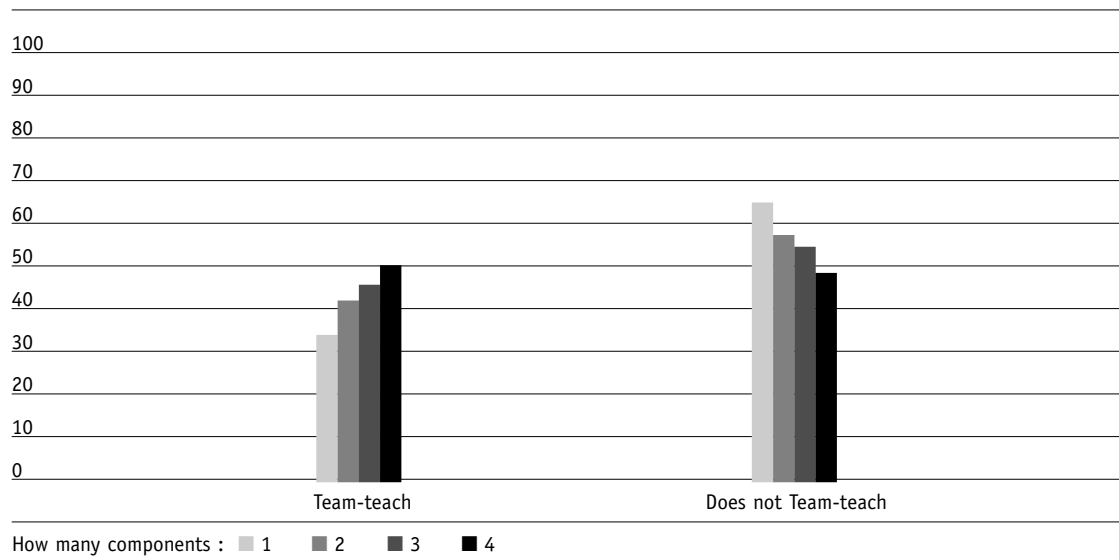
Graph 11 : Percent of teachers using each number of components by type of school



There was a significant relationship between the percentage of honor students in the classroom and the number of curriculum components used by the teachers. Having a greater percentage of honor students was associated with greater use of curriculum components ($r_s = 0.07$, $p < .05$).

Teachers who team-taught used significantly more curriculum components than did teachers who did not team-teach (Cramer's V value = 0.09, $p < .01$) (see Graph 12).

Graph 12 : Percent of teachers using each number of components by team-teaching



There was a significant relationship between the length of class periods and the number of curriculum components used by the JASON teachers. Shorter class periods were associated with greater use of components (Kendall's tau = - 0.06, $p < .01$).

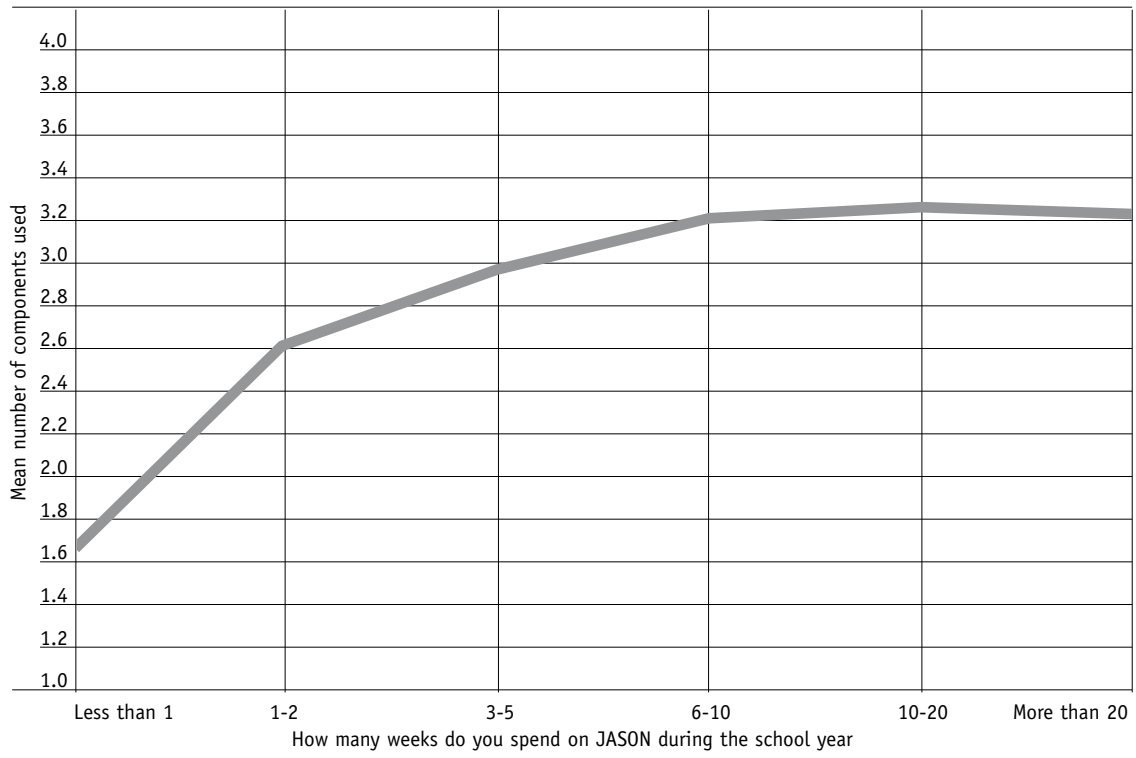
- Regularity of use during the school year

There was a significant relationship between the time JASON teachers spent on JASON during the school year and the number of components they used (see Graph 13). Longer time spent on JASON during the school year was associated with greater use of curriculum components (Kendall's tau = 0.21, $p < .01$).

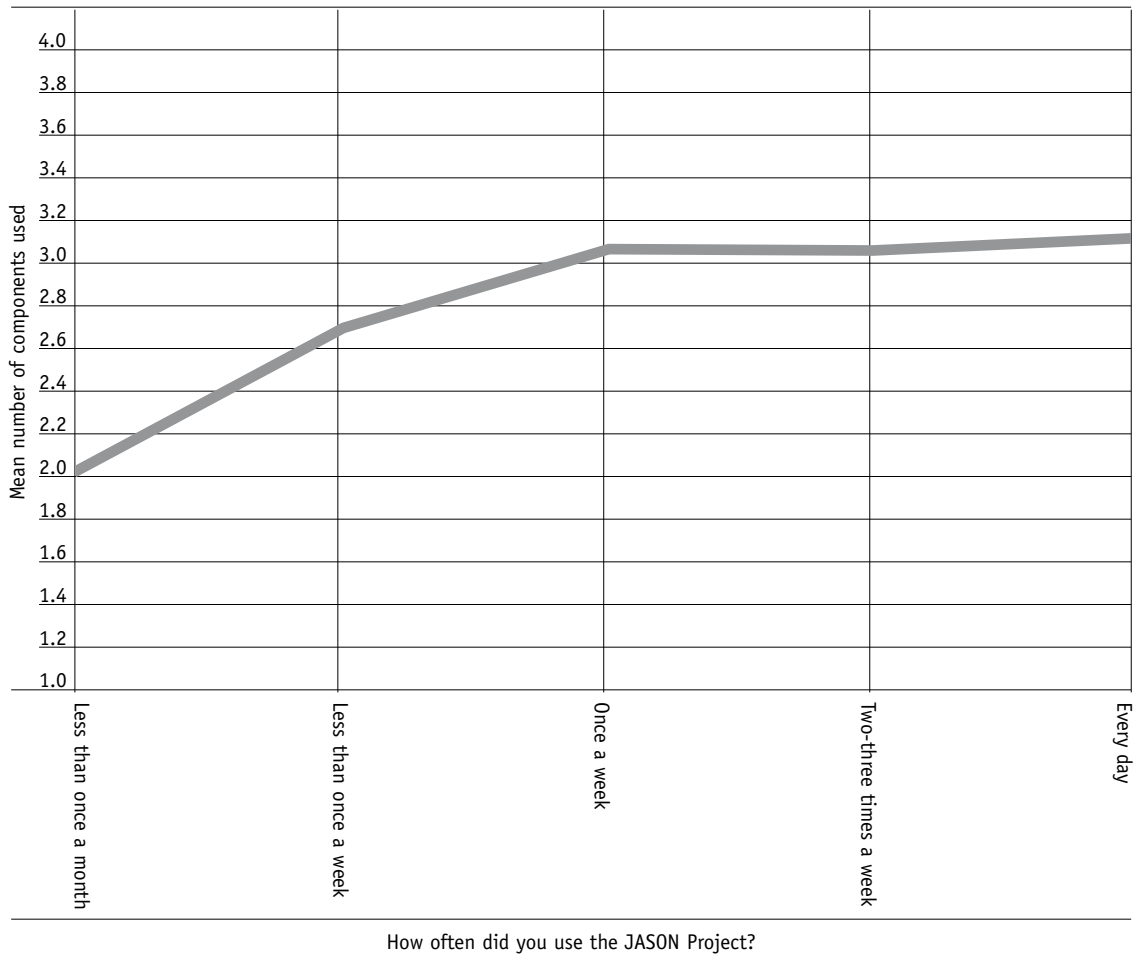
There was also a significant relationship between the frequency of teaching JASON during the school year and the number of components used (see Graph 14). More frequent JASON teaching was associated with greater use of components (Kendall's tau = - 0.09, $p < .01$) (see Footnote 5).

These findings should be expected, and may indicate a reversed cause-and-effect situation: teachers who use more components require more time to complete them.

Graph 13 : Mean number of components used by time spent on JASON during the school year



Graph 14 : Mean number of components used by frequency of using JASON



SECTION TWO: FOLLOW-UP LARGE-SCALE TEACHER SURVEY

To deepen our understanding of the use of the JASON Multimedia Science Curriculum by the 1,896 JASON teachers who responded to the first survey, we administered a follow-up survey which focused mainly on (1) background information: ethnicity, school geographic location, institutional context, pedagogy, students' achievement background; and (2) time spent on different JASON materials and activities (see Appendix). We received back a total of 1,133 surveys, a 60% response rate.

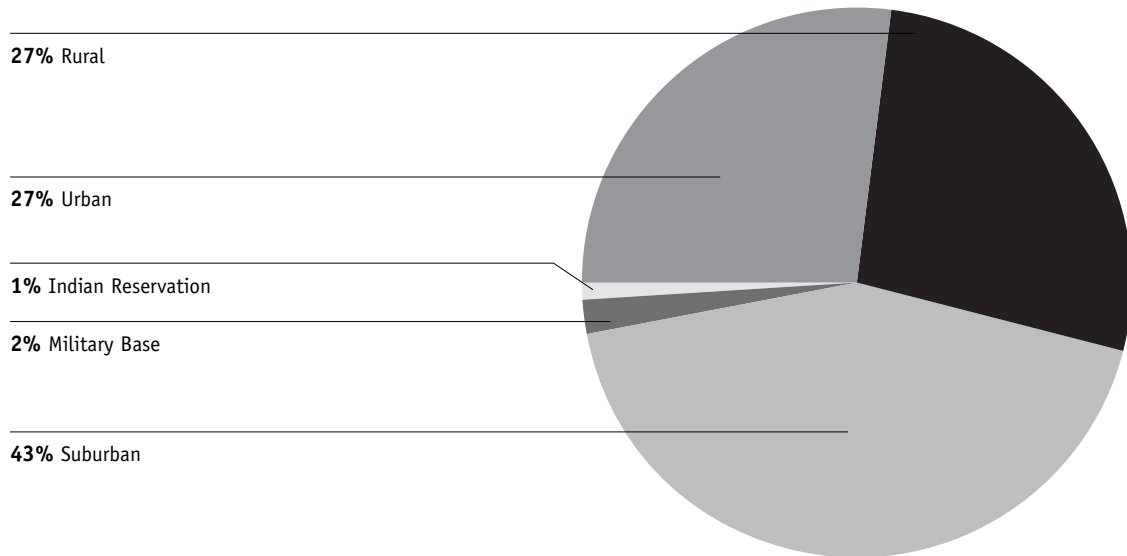
We conducted a variety of analyses on the data from the 1,133 participating teachers: frequencies, cross-tabulations, and correlations. This process helped refine our previous analysis and findings with the initial 1,896 teachers.

Teachers' backgrounds

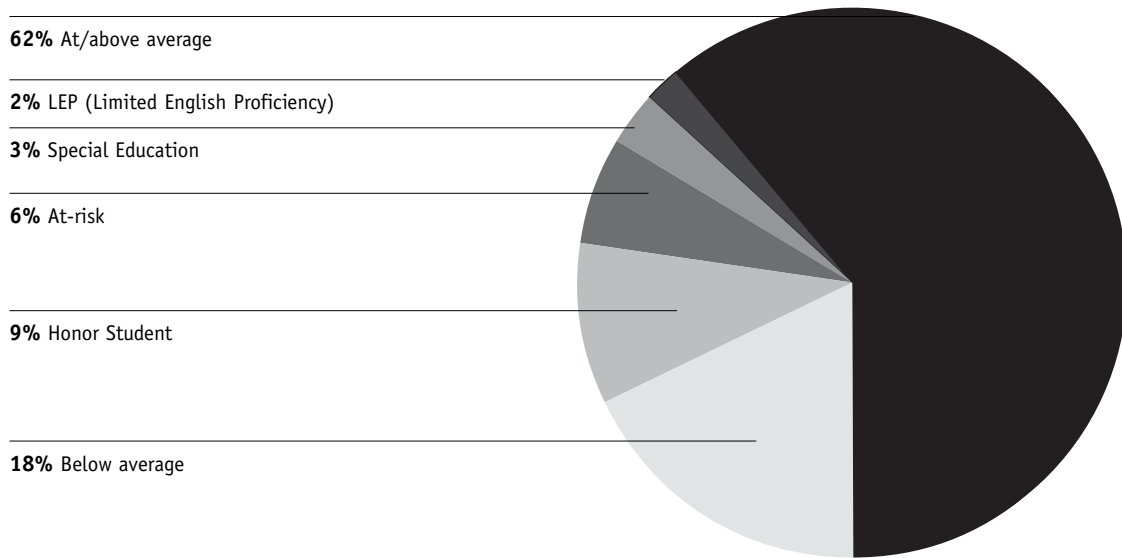
The most salient characteristics of the participating JASON teachers (N=1,133) in the follow-up survey are that:

- They are 86.6% female and 13.4% male. They are white (90%), African-American (3%), Latino (2%), Asian (1%), and Native American (1%).
- The majority of the teachers teach in elementary (55%) and secondary (36%) schools. They hold M.A (55%) and undergraduate degrees (37%). In addition, they have science certification (23%) and have taken science courses (56%).
- They come from different school communities (see Graph 15): rural/farming (26%), suburban (42%), urban (26%), military bases (2%), and Indian reservations (1%).

Graph 15. JASON school communities



They serve white students (71%), Latino students (10%), African-American students (9%), Asian-American students (2%), and Native-American students (1%). These students have different academic placement levels (see Graph 16): 58% are academically at or above average, 17% are academically below average, 9% are honor students, 6% are labeled academically “at-risk,” 3% are special education students, and 2% are Limited English Proficiency students. Ninety-six percent of the teachers serve in schools, while 4% are parents who home-school their children.

Graph 16. JASON students' academic placement

Teaching practices

Most of the teachers teach 45- (29%) and 50- (22%) minute class periods. Fourteen percent (14%) use block scheduling in their classroom. A little over half the teachers (55%) teach science in their classrooms at least once a day, and almost a quarter (22%) teach it two to three times a week. Over half (54%) the teachers engage in computer and Internet activities a few times a week with their classes.

Most of these teachers are not told often in detail what to teach (74%), are often solicited for input into how to teach their classroom curriculum materials (61%), have structured time to meet with colleagues (72%), and have structured time to work in teams (61%).

In their classroom, most of them often have their students review and revise their own work (77%), use non-JASON-Project-based or teacher-developed curricula (75%), often have students engage in group research activities (71%), often have many learning activities going on at the same time in their classrooms (66%), often have students self-assess their work (62%), and do not often ask their students to individually answer textbook or worksheet questions (55%). Less than 50% of the teachers, however, often use a textbook as a primary guide through units (49%).

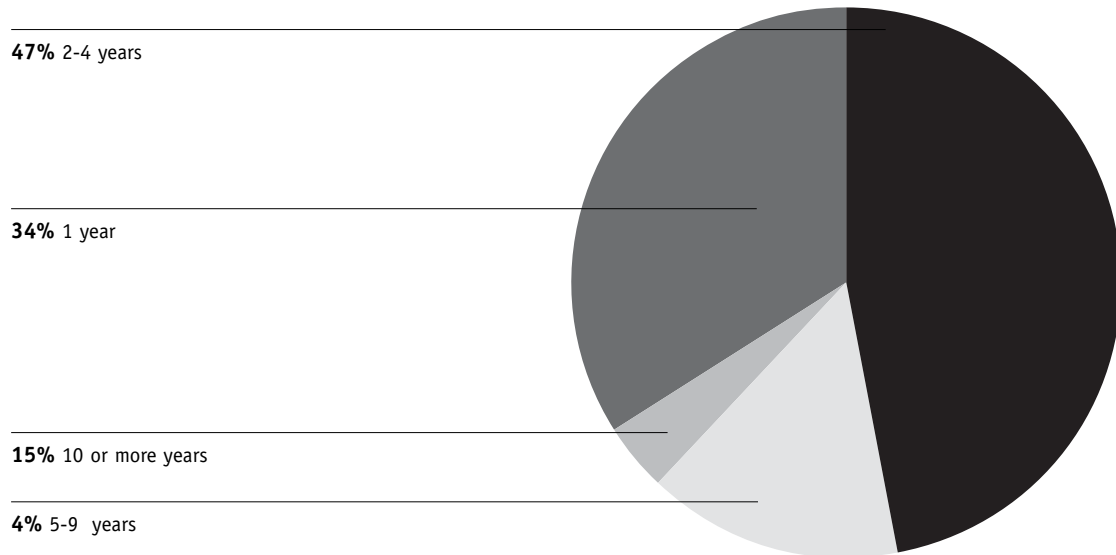
Teachers' past experience with the JASON Project

Including the current year, the teachers have been participating in the JASON Project for (see Graph 17):

- One year (34%)
- Two to four years (46%)

- Five to nine years (15%)
- Ten or more years (4%).

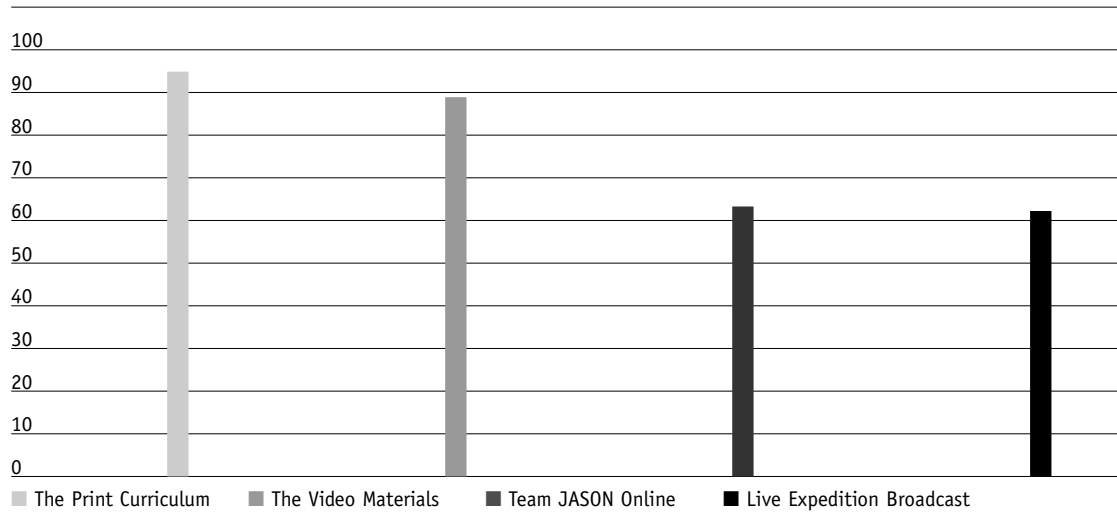
Graph 17. Teachers' experience with JASON



Almost half (48%) the teachers spend six weeks or more on the JASON Project during the school year; 38% spent one to five weeks. During those weeks, most teachers (94%) use the curriculum frequently in their classes: every day (30%), two to three times a week (48%), or once a week (16%). When in the JASON Project, 43% of the teachers are part of a teaching team.

Teachers' JASON practices

Most of the teachers (75%) use three to four of the curriculum components, 15% use two components, and 5% use one component. The print curriculum is the most used (95%), followed by the videos (89%), Team JASON Online (63%), and the live expedition broadcast (62%)(see Graph 18).

Graph 18. JASON components used by teachers

Print curriculum

Most of the teachers (95% or N=1,050) use the print curriculum in their classrooms, and 65% reuse them. These teachers use complete units in the JASON print curriculum sometimes (51%) or often (26%). However, 16% never use complete units. They do pick and choose different sub-units from the print curriculum often (65%) or sometimes (33%). They do pick out research stories on specific topics from the print curriculum often (44%) or sometimes (49%). They do pick out exercises on specific topics from the print curriculum often (55%) or sometimes (42%). They do pick out student assessment tools from the print curriculum often (24%) or sometimes (54%). They often make these decisions (on which parts of the print curriculum to use) by topic (91%) and by standards (54%).

Videos

Most teachers (89% or N=989) use the JASON videos in their classrooms. They often use them to introduce the new curriculum to students, to add to the print curriculum as a teaching tool, and in conjunction with specific lessons and activities.

Team JASON Online (TJO)

Almost two-thirds of the teachers (63% or N=700) take part in TJO, 81% visit the TJO website at least once a week, and 69.5% report that their students visit the site at least once a week. The vast majority (88%) rate their students' experience with TJO as being good to excellent.

Live expedition broadcast

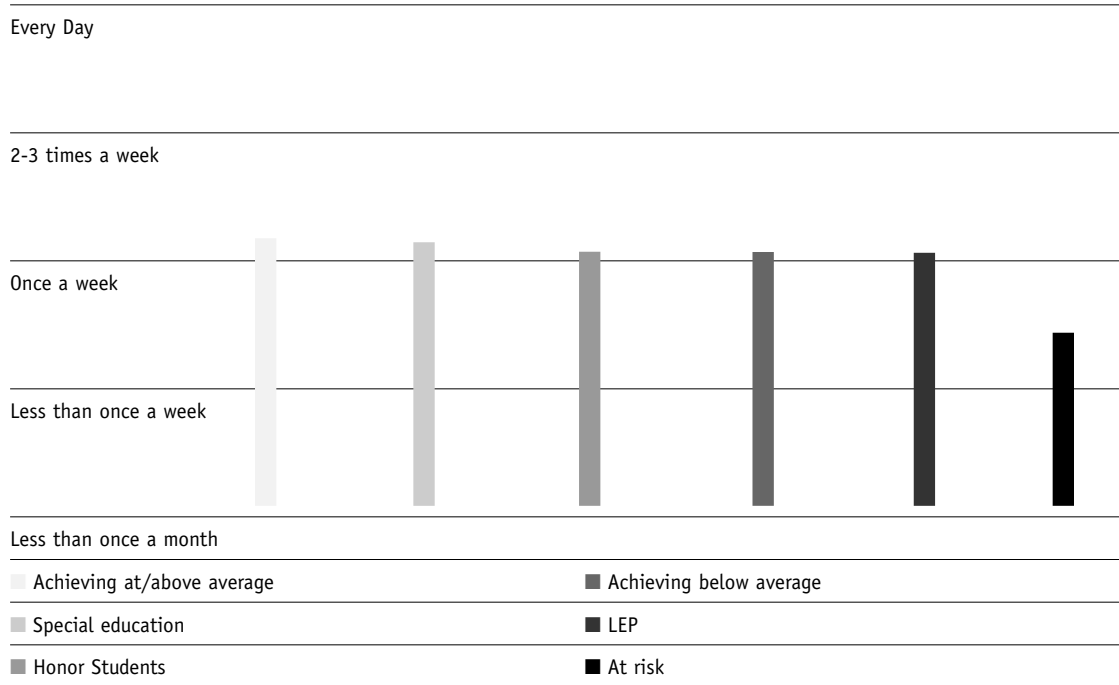
Most teachers (62% or N=682) have seen the JASON broadcast live, and 94% find the question-and-

answer format an effective way to share information with students about the curriculum topic. It is important to most of them (87%) that the JASON expedition be broadcast live, and 83% would take part in the JASON live broadcast if it took place every two years instead of every year.

Teachers' Frequency of Use of the JASON Curriculum

Using the new information collected in our follow-up questionnaire, we found that student academic placement made a significant difference in the duration and frequency of use by teachers of the JASON curriculum (see Graph 19). Teachers serving academically advanced students and special education students used the JASON curriculum more frequently (Kendall's tau = 0.056, $p < .01$).

Graph 19. Students' academic placement and frequency of teaching JASON



Teachers' Effective Use of the Curriculum

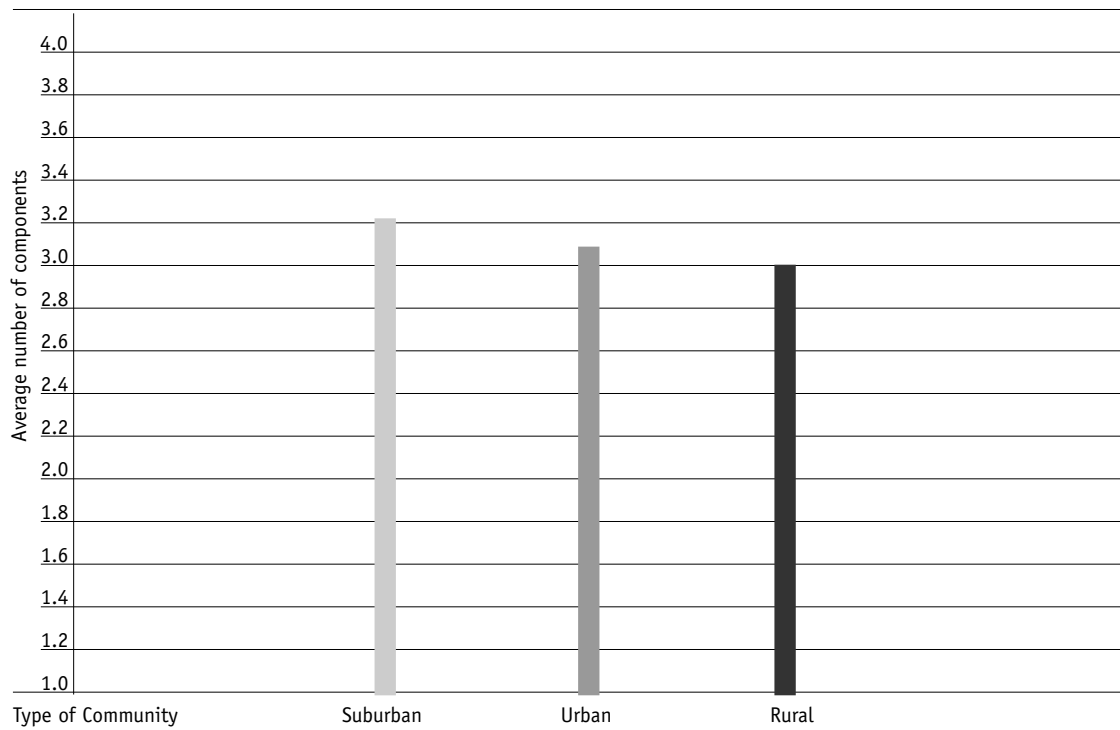
We looked into possible associations between our newly collected data and how effectively teachers use the JASON Multimedia Science Curriculum. As in our first survey analysis, we defined teachers who use all four JASON Multimedia Science Curriculum components in the classroom as advanced users and assumed that the more components a teacher uses, the more likely he or she is to implement the entire curriculum in the classroom. To learn about statistically significant relationships in teachers' use of the JASON Curriculum, we conducted cross-tabulations on our effectiveness variable with a few independent variables drawn from the participating teachers' follow-up survey information. We found the following to be statistically significant⁶ in the ways teachers made effective use of the curriculum:

⁶ The following findings are statistically significant at the .05 level. "Statistically significant" means that we place a confidence of 95% in the decision that the relationship between variables is not equal to 0.

- The types of community in which the JASON schools were located: suburban, urban, and rural
- The ways JASON teachers made decisions about which parts of the print curriculum to use in their classrooms: topic, standards, classroom period, number of months dedicated to the JASON Project during the school year, and student placement levels.

There was a significant relationship between the type of community in which the school was located and the number of curriculum components used by the JASON teachers (see Graph 20). The highest number of components used was found in suburban communities, then urban, and rural (Cramer's V value = 0.103, $p < .01$).

Graph 20. Average number of components used by each type of community



We found a significant relationship between the ways teachers decided which parts of the print curriculum to use in their classrooms, and the number of curriculum components they used. Teachers who chose parts of the print curriculum by topic (91%) or by the number of months dedicated to JASON (29%) used significantly more components than those who did not (Cramer's V value = 0.116, 0.131, $p < .01$).

CONCLUSION AND RECOMMENDATIONS

The above survey results provide a broad view of the characteristics of the JASON teachers based on their personal, educational, community, teaching, JASON, and student backgrounds, and of their effective use of the different curriculum components. JASON teachers teach in the upper elementary and lower middle grades, are experienced teachers, and are comfortable with digital technologies. They use the JASON Project in their classroom a lot during a six-week period, select units from the curriculum to cover in their classroom based on topic and standards, reuse the print curriculum, and meet their assessment objectives using the JASON curriculum. Further, they value the hands-on activities, and the connection to a community of researchers.

Overall, teachers rate positively their students' experience with the JASON curriculum, and TJO as good to excellent. They testify that it meets their students' learning objectives in the following areas: collaboration, problem-solving, research, assessment, and technology.

Within different school and community circumstances, we found the following to be statistically significant in the ways teachers made effective use of the curriculum.

- We found that teachers who have more experience with technology use the JASON curriculum more comprehensively. This is unsurprising, given the nature of JASON and its close relationship to technology. JASON professional development should focus more on technology uses in the classroom, thus making it easier for JASON teachers to use more of its components, especially the live expedition and TJO.
- We found that the JASON curriculum was used more comprehensively at the lower grade levels. Since many JASON features address middle- and high-school age student needs, an attempt should be made to acquaint middle and high school teachers with the different JASON features, as well as find out why more middle and high school teachers do not use the JASON multimedia science curriculum.
- We found that teachers who team-teach use JASON more comprehensively. The JASON Foundation for Education, who is sponsor of the project, should encourage and recommend team-teaching. Professional development should provide teachers with the tools for successful engagement in team-teaching.

This study suggests that the basic multimedia curriculum components do not need much improvement, but the ways those components are made available to teachers could certainly be improved to extend the reach of the project. In order to hold existing teachers and attract new ones, the JASON Project should go after those teachers not represented in this sample, and who do not satisfy some of the above conditions of effective use of the JASON multimedia curriculum. This target group might include new or young teachers, teachers serving in underserved communities, who are most likely not to satisfy some of the above conditions, male teachers, and teachers struggling with teaching science in relevant and meaningful ways for their students.

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APPENDIX

FIRST SURVEY

Dear JASON educator,

The JASON Foundation for Education (JASON) needs your assistance! JASON has asked an outside organization, EDC's Center for Children and Technology (CCT), to conduct an evaluation of the impact of the JASON Project on teachers and students.

CCT believes the best way to assess the quality of the JASON Project is to ask for feedback from educators like you who use it. All information obtained in this evaluation will remain strictly confidential: we will not identify you by name or describe you in such a way that you can be identified.

This survey covers several sections:

- Your teaching experience
- Your general experience with the JASON Project
- Your specific experience with each component of the JASON Project: print curriculum, Team JASON Online, videos, and live expedition broadcast

However, you only need to answer those sections and questions that reflect your experience with the JASON Project.

The survey should take about 45 minutes to complete. Please complete the survey by January 31, 2001. We prefer if you complete this survey online at:

http://surveys.edc.org/WebSurvey/Jason_Survey/jasonsurvey.html

However, if you do not have access to the Internet, please complete the enclosed copy of the survey and drop it in the mail.

As a thank you for your time and thoughts, we would like to offer each person completing the survey a JASON lapel pin. We will also send the first 500 educators who return the online survey a beautiful, visual compelling JASON Project / National Geographic Channel poster. These items will be sent to you via US Mail, shortly after we receive your completed survey via the Web, or US Mail.

Thanks so much for your time and commitment!

THE JASON PROJECT TEACHER SURVEY

Teacher background

1) Full name

a) First name _____

b) Last name _____

2) Are you...? Female _____

Male _____

3) Contact information

a) School Name _____

b) School Address _____

4) Is your school...?

a) _____ An elementary school

b) _____ A junior high/middle school

c) _____ A senior high school

5) What grade(s) do you teach? (Check all that apply).

____ 1 ____ 2 ____ 3 ____ 4 ____ 5 ____ 6

____ 7 ____ 8 ____ 9 ____ 10 ____ 11 ____ 12

6) What is the highest degree you have obtained?

a) _____ A college undergraduate degree

b) _____ Master's degree

c) _____ Ph.D.

d) _____ Other _____

7) What are the types of science academic training you have obtained?

a) _____ Science certification

b) _____ Science coursework

c) _____ Other _____

8) How many years have you been a full-time K-12 teacher?

- a) _____ years
- b) _____ I am not a full-time teacher
- 9) What subject(s) do you teach? (Check all that apply).
- a) _____ All subjects
- b) _____ General science
- c) _____ Life science
- d) _____ Physical science
- e) _____ Earth and space science
- f) _____ Math
- g) _____ Art
- h) _____ English/language arts
- i) _____ History/social studies
- j) _____ Basic skills
- k) _____ ESL/Bilingual education
- l) _____ Technology
- m) _____ Foreign language
- n) _____ Vocational education
- o) _____ Other _____
- 10) How long are your class periods?
- a) _____ 35 minutes
- b) _____ 45 minutes
- c) _____ 50 minutes
- d) _____ Block scheduling
- e) _____ Other _____

- 11) How often do you teach science in the classroom?
- a) ___ At least once a day
 - b) ___ 2-3 times a week
 - c) ___ Weekly
 - d) ___ Twice a month
 - e) ___ Once a month or less
- 12) On average, how many students are in your classes? _____ students
- 13) Please enter the percentage of students in your JASON classroom, represented as follows:
- a) ___ Honor students
 - b) ___ Achieving academically at and/or above average
 - c) ___ Achieving academically below average
 - d) ___ Labeled as "At-Risk" academically
 - e) ___ Limited English Proficiency
 - f) ___ Special Education
- 14) What kinds of assessment techniques do you use in your classroom? (Check all that apply).
- a) ___ Essay exams
 - b) ___ Student presentations
 - c) ___ Multiple-choice tests
 - d) ___ Reports
 - e) ___ Portfolios
 - f) ___ Peer assessment rubric
 - g) ___ Poster sessions
 - h) ___ Self-assessment rubric
 - i) ___ Assessment by outside experts
 - j) ___ Other _____

15) For how many years have you been using computers and the Internet as a professional or instructional tool?

a) computers _____ years

b) Internet _____ years

16) Does your school have High Speed Internet Access? Yes _____ No _____

17) How often do you engage in computer and Internet activities with your classes?

a) _____ Every day

b) _____ A few times a week

c) _____ A few times a month

d) _____ Once a month

e) _____ Every few months

f) _____ Never

Teacher's experience with the JASON Project

18) Including the current year, how many years have you taken part in the JASON Project?

a) _____ This is my first year

b) _____ 2 - 4

c) _____ 5 - 9

d) _____ 10 or more

19) How many weeks do you spend on the JASON project during the school year?

a) _____ Less than one week

b) _____ 1 - 2 weeks

c) _____ 3 - 5 weeks

d) _____ 6 -10 weeks

e) _____ 10 - 20 weeks

f) _____ More than 20 weeks

20) During those weeks, how often did you or will you use the JASON Project?

a) ___ Every day

b) ___ 2 – 3 times a week

c) ___ Once a week

d) ___ Less than once a week

e) ___ Less than once a month

21) With the JASON Project, are you part of a teaching team? Yes ___ No ___

22) How did you hear about the JASON Project? _____

23) If you know and have participated in the following professional development components of JASON, please rate the usefulness of the JASON professional development components on a scale of 1 to 4, with 1 being “not useful” and 4 being “extremely useful”.

Not Useful	Extremely Useful	N/A				
a) Face-to-face training at a live broadcast site	1	2	3	4	___	
b) Face-to-face training at NEC (JASON National Educators Conference)	1	2	3	4	___	
c) Videoconferencing	1	2	3	4	___	
d) In-school, in-district or regional training	1	2	3	4	___	
e) JASON Project online professional development	1	2	3	4	___	
f) JASON Academy	1	2	3	4	___	
g) I didn't take part in JASON professional development						_____

24) Have you participated in any professional development on how to use the ...? If yes, how many times?

a) Print curriculum	Yes ___	No ___	_____ times
b) Team JASON Online	Yes ___	No ___	_____ times
c) Live broadcast	Yes ___	No ___	_____ times
d) Videos	Yes ___	No ___	_____ times

25) If you do not take part in JASON's professional development, why not? (Check all that apply by ranking them from 1 to 7, with 1 being the "most important reason" and 7 being the "least important reason.")

- a) Don't have enough time
- b) Can't afford to travel
- c) No online access
- d) Not offered in my area
- e) Not required by my school district or state
- f) I understand how to implement JASON without the training
- g) Other _____

Teacher's experience with the JASON print curriculum

26) Do you use the JASON print curriculum? Yes _____ No _____
(If you answer 'no,' skip to question 36)

27) If yes, which JASON print curricula have you used including this year's? (Check all that apply).

- a) JASON XIII: Frozen Worlds
- b) JASON XII: Hawaii: A Living Laboratory
- c) JASON XI: Going to Extremes
- d) JASON X: Rainforests: A Wet & Wild Adventure
- e) JASON IX: Oceans of Earth and Beyond
- f) JASON VIII: Journey from the Center of the Earth
- g) JASON VII: Adapting to a Changing Sea
- h) JASON VI: Island Earth
- i) JASON V: Planet Earth
- j) JASON IV: Baja California Sur
- k) JASON III: The Galapagos Islands
- l) JASON II: The Great Lakes
- m) JASON I: The Mediterranean Sea

28) Do you reuse JASON print curricula? Yes _____ No _____

29) During which months did you or will you use the JASON print curriculum? (Check all that apply).

Sep Oct Nov Dec Jan Feb Mar Apr May Jun Jul Aug

30) Which parts of a unit in the JASON printed curriculum do you use in your teaching? (Check all that apply).

- a) _____ Research articles
- b) _____ Teacher preparation
- c) _____ Exercises
- d) _____ Masters
- e) _____ Assessment tools
- f) _____ Other _____

31) Does the JASON print curriculum help you meet the following objectives? (Please rate from 1 to 4, with 1 being "not helpful" and 4 being "very helpful.") (Check all that apply).

Not helpful	Very helpful	N/A			
a) Enhancing your ability to teach science content in an exciting way	1	2	3	4	_____
b) Assisting you in meeting national or local educational standards	1	2	3	4	_____
c) Helping you introduce technology into the classroom	1	2	3	4	_____
d) Helping you connect with current research and researchers	1	2	3	4	_____
e) Providing useful assessment activities	1	2	3	4	_____
f) Helping you network outside of the classroom	1	2	3	4	_____

32) Does the JASON print curriculum help you:

- a) Meet your district/school standards Yes _____ No _____
- b) Meet state standards Yes _____ No _____

- c) Assess student performance Yes _____ No _____
- d) Prepare for testing Yes _____ No _____

33) Which assessment tools do you use? (Please rate the usefulness of these assessment tools from 1 to 4, with 1 being "not useful" and 4 being "very useful.")

	Not useful		Very useful		N/A
	1	2	3	4	
a) JASON portfolio	1	2	3	4	_____
b) JASON poster	1	2	3	4	_____
c) JASON journal	1	2	3	4	_____
d) Student self-assessment	1	2	3	4	_____
e) Standards and assessment charts	1	2	3	4	_____
f) Multiple choice test online	1	2	3	4	_____

34) Did the print curriculum help your students learn more about:

- a) How scientists work in teams Yes _____ No _____
- b) How to learn using the Internet Yes _____ No _____
- c) How to design science experiments Yes _____ No _____
- d) How to solve problems Yes _____ No _____
- e) How to present what they know Yes _____ No _____
- f) How to work with multimedia Yes _____ No _____

35) Please rate the JASON print curriculum format from 1 to 4, with 1 being "needs improvement" and 4 being "needs no improvement."

	Needs improvement		Needs no improvement		N/A
	1	2	3	4	
a) Is of manageable length	1	2	3	4	_____
b) Provides user-friendly structure	1	2	3	4	_____
c) Teacher pages supply useful information ¹	2	3	4		_____
d) Includes easy-to-follow tables, graphs, ¹ and diagrams	2	3	4		_____
e) Research articles define important vocabulary words	1	2	3	4	_____

f) Delivered on time	1	2	3	4	_____
g) Activities are age appropriate	1	2	3	4	_____
h) Assessment tools are applicable	1	2	3	4	_____

36) If you don't use the print curriculum, why don't you use it? (Check all that apply by ranking them from 1 to 5, with 1 being the "most important reason" and 5 being the "least important reason.")

- a) _____ Too difficult
- b) _____ Too time-consuming
- c) _____ Too expensive
- d) _____ Doesn't work
- e) _____ Other _____

37) When is the best time for you to receive the print curriculum?

- a) _____ At least a year before the JASON Project begins
- b) _____ The summer before the JASON Project begins
- c) _____ In the fall, at the beginning of the school year

38) Would you use online resources that align the JASON curriculum to science textbooks?

Yes _____ No _____

Teacher's experience with Team JASON Online

39) Do you take part in Team JASON Online? Yes _____ No _____

(If you answer 'no,' skip to question 48)

40) Which parts of Team JASON Online do you and your students use? (Check all that apply).

- a) _____ Communicating with scientists in chat rooms
- b) _____ Doing an online digital lab activity
- c) _____ Writing entries in JASON journals
- d) _____ Researching previous JASON expeditions
- e) _____ Using teacher administration tools
- f) _____ Networking with other JASON educators
- g) _____ Participating in the Online Field Center

- h) Entering/comparing field study data
- i) Using message boards
- j) Reading about this year's JASON expedition
- k) Asking scientists questions using Ask-an-Expert
- l) Using the online assessment tool
- m) Other _____

41) How often do you visit the JASON Web site?

- a) Daily
- b) Several times a week
- c) Once a week
- d) Once a month
- e) Less than once a month

42) During which months did you or will you use the Team JASON Online?

Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug
___	___	___	___	___	___	___	___	___	___	___	___

43) Do you use the assessment tools on the JASON Project Web site? Yes No

44) Do the Team JASON Online assessment tools align with your state's standards? Yes No

45) Does Team JASON Online help you and your students meet the following objectives? (Please rate from 1 to 4, with 1 being "not helpful" and 4 being "very helpful").

Not helpful			Very helpful	N/A	
a) Enhancing your ability to teach science in an exciting way		1	2	3	4

b) Helping you introduce technology into the classroom		1	2	3	4

c) Helping you connect with current research and researchers		1	2	3	4

d) Helping you network outside of the classroom		1	2	3	4

e) Encouraging students to develop					

their own questions	1	2	3	4	___
f) Assisting students in exploring careers	1	2	3	4	___
g) Learning how scientists work in teams	1	2	3	4	___
h) Learning how to use the Internet	1	2	3	4	___
i) Learning how to design science experiments	1	2	3	4	___
f) Learning how to present what they know	1	2	3	4	___

46) How often do your students visit Team JASON Online?

- a) ___ Daily
- b) ___ Several times a week
- c) ___ Once a week
- d) ___ Once a month
- e) ___ Less than once a month

47) Please rate your students' experience with Team JASON Online from 1 to 4, with 1 being "Disappointing" and 4 being "Excellent".

Disappointing		Excellent	N/A
1	2	3	4

48) If your students don't use Team JASON Online resources much, why is that? (Check all that apply by ranking them from 1 to 7, with 1 being the "most important" and 7 being the "least important.")

- a) ___ Don't have enough equipment
- b) ___ Lack of technical expertise
- c) ___ Don't have time
- d) ___ Too difficult to look for information in the site
- e) ___ Didn't know it existed
- f) ___ Can't manage my students' use of the site
- g) ___ Other _____

JASON teacher's experience with the videos

49) Do you use the videos in your classroom? Yes _____ No _____
(If not, skip to question 56)

50) During which months did you or will you use the JASON videos?

Sep Oct Nov Dec Jan Feb Mar Apr May Jun Jul Aug

51) Which of the video components do you use in your classroom? (Check all that apply).

- a) _____ The prologue video
- b) _____ The expedition update video
- c) _____ The expedition highlights video

52) How do you use the videos in your classrooms? (Check all that apply).

- a) _____ To introduce the new curriculum to students
- b) _____ In conjunction with specific lessons/activities
- c) _____ As an additional teaching tool
- d) _____ Other _____

53) On a scale of 1 to 4, with 1 being "not educational" and 4 being "extremely educational", how would you rate:

Not educational	Extremely Educational				N/A
a) The prologue video	1	2	3	4	_____
b) The expedition update video	1	2	3	4	_____
c) The expedition highlights video	1	2	3	4	_____

54) Do you think the JASON videos need improvement?

Yes _____ No _____

55) If yes, in which areas? (Check all that apply).

- a) _____ Content
- b) _____ Organization/format
- c) _____ Student appeal

- d) Connections to other JASON components
- e) Delivery
- f) Other _____

JASON teacher's experience with the live expedition broadcast

56) Have you seen the JASON broadcast live? Yes No
(If you answer 'no,' skip to question 65)

57) Which JASON expedition broadcast did you watch live? (Check all that apply).

- a) One or more between 1989-1993 (I-IV)
- b) 1993-1994 (JASON V - Belize)
- c) 1994-1995 (JASON VI - Hawaii)
- d) 1995-1996 (JASON VII - Florida)
- e) 1996-1997 (JASON VIII - Iceland/Yellowstone)
- f) 1997-1998 (JASON IX - Monterey Bay/Bermuda)
- g) 1998-1999 (JASON X - Rainforests)
- h) 1999-2000 (JASON XI - Going to Extremes)
- i) 2000-2001 (JASON XII - Hawaii)
- j) 2001-2002 (JASON XIII - Frozen Worlds)

58) Where have you watched the live broadcast?

- a) Classroom
- b) Internet
- c) School auditorium
- d) PIN site
- e) Network site
- f) Other _____

59) How often did your class take part in the live broadcasts during the two weeks they appeared?

- a) Once
- b) 2 - 3 times

c) ____ 5 - 7 times

d) ____ Every day

60] Does the live broadcast help you meet the following objectives? (Please rate from 1 to 4, with 1 being "not helpful" and 4 being "very helpful").

Not helpful	Very helpful	N/A			
a) Enhancing your ability to teach science content in an exciting way	1	2	3	4	____
b) Helping you introduce technology into the classroom	1	2	3	4	____
c) Helping you connect with current research and researchers	1	2	3	4	____
d) Helping you network outside of the classroom	1	2	3	4	____

61] Do you think that the question and answer session format is an effective way to share information with students about the topic? Yes ____ No ____

62] Check any statement you agree with in regard to the live broadcast you watched.

- a) ____ The broadcast was too long.
- b) ____ The topics were difficult to understand.
- c) ____ The coverage of the topics lacked depth.
- d) ____ The image quality was poor.
- e) ____ The demonstrations were helpful.
- f) ____ The question and answer sessions were informative.

63] How important is it to you, on a scale of 1 to 4, with 1 being "not important" and 4 being "extremely important", that the JASON expedition be broadcast live?

Not important	Extremely Important			N/A
1	2	3	4	____

64] Do you use past years' live expedition videos? Yes ____ No ____

65] Would you take part in the JASON live broadcast if it took place every two years instead of every year? Yes _____ No _____

66] If the JASON Project multimedia curricular materials no longer existed, what would you use in its

place?

- a) ___ Commercially produced science kit
- b) ___ An online science education program
- c) ___ An electronic field trip
- d) ___ Videotapes
- e) ___ Textbook, another printed curriculum
- f) ___ Other _____

FOLLOW-UP SURVEY

Dear JASON Educator,

First we thank you very much for having filled out the first survey that the JASON Foundation for Education and EDC's Center for Children and Technology (CCT) mailed to you in the winter. Now you are part of a select group that CCT is asking to respond to the enclosed follow-up paper survey. Your response to this short survey will help us greatly in our long-term evaluation of the impact of the JASON Project on teachers and students.

The survey should take about 5 minutes to complete. All information obtained in this evaluation will remain strictly confidential. We will not identify you by name or describe you in such a way that you can be identified.

Please complete the survey by May 10, 2002.

Thanks so much for your time and commitment!

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THE JASON PROJECT FOLLOW-UP TEACHER SURVEY

First and last name _____

School name _____

1) Which of the following best describes the community in which this school is located? Check only one answer

a) _____ A rural or farming community

b) _____ A suburban community

c) _____ An urban community

d) _____ A military base or station

e) _____ An Indian reservation

f) _____ Other _____

2) How often are you told in detail what to teach at given times and what materials must be covered? Check only one answer.

___ Never

___ Sometimes

___ Often

___ Very often

3) How often are you solicited for input into how to teach these materials in your classroom? Check only one answer.

___ Never

___ Sometimes

___ Often

___ Very often

4) Do you have structured time to ...? Check all that apply.

a) Meet with colleagues Yes _____ No _____

b) Observe colleagues teaching and provide feedback to them Yes _____ No _____

c) Work in teams Yes _____ No _____

5) How often have you done the following in your classroom? Check all that apply.

Never (1) Sometimes (2) Often (3) Very often (4) Non-applicable(N/A)

a) Used a textbook as a primary guide through units 1 2 3 4 NA

b) Used non-JASON project-based or teacher-developed curricula 1 2 3 4 N/A

c) Had many learning activities going on at the same time 1 2 3 4 N/A

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