

# **Evaluation of the Future Problem Solving Program International (FPSPI)<sup>1</sup>**

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The Future Problem Solving Program has served thousands of students worldwide for nearly four decades. Torrance, Bruch, and Torrance (1976, p. 119) described their early efforts as creating “interscholastic creative problem-solving,” or “creative problem-solving bowls” (see also: Millar, 1995, pp. 134-139). Torrance and Torrance (1978a, 1978b) described the foundations for FPSPI this way: “In 1977-78, the Future Problem-Solving Program, initiated in 1974, emerged as a national program of interscholastic competition and as a curriculum project in creative problem-solving and future studies (1978b, p. 87).”

The program now offers three principal competitive components intended to address these goals. (There is also a non-competitive, classroom based component that was not included in the scope of this evaluation.) For competition purposes, there are three divisions: Junior (generally, U.S. grades 4-6), Middle (grades 7-9), and Senior (grades 10-12). Students can participate at the local (school) level, and based on competitive evaluation, may have the opportunity to advance to a regional level (within “affiliates” which are based on geographic units such as states, regions, or countries), in some cases to a national competition, and eventually to the annual International Conference.

The program was originally intended to provide creative opportunities for high-ability students. In some settings today, the program is offered in a school setting as a component of a Gifted/Talented program, and students may be required to participate in one or more

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components. In other cases, the program is offered as an after-school or optional enrichment activity and may be open to a broader student population. The cost of participation varies among affiliates, and there will be additional costs (including travel) for participants whose involvement extends beyond the local school level. Most costs come from registration fees charged per individual or team and generally range from \$25 to \$100 for the year, including materials and all evaluations. The three competitive components are:

*Global Issues Problem Solving (GIPS)*. This component is available to individuals or to teams of four students, who are provided opportunities to apply their research, analytical and writing skills. Participants complete two practice problems and one qualifying problem which are scored by trained evaluators. Evaluations are returned with feedback that includes suggestions for improvement. Top scoring teams on the qualifying problem are invited to advance to higher levels of competition. Specific topics are selected each year for the two practice problems, the qualifying problem, the affiliate competition (or “bowl”), and for the International competition. For example, the 2010-11 topics were: Healthy Living, Air Transport, Genetic Testing, Water Quality, and Emergency Planning.

*Community Problem Solving (CmPS)*. This component is also offered for teams or individual participants. CmPS teams may exceed four members based on the challenges that they adopt and local realities. Community problem solvers apply their academic and problem solving skills to real problems in their school or community, tackling a problem or challenge that exists within the school, local community, region, state or nation. CmPS provides students with action-oriented opportunities to link creative problem solving directly to community service and to follow their efforts from their initial ideas into action and results. Both individual and team CmPS participants also have the opportunity to advance through several levels of competition.

*Scenario Writing (SW)*. In this individual component, each year students choose from the year's selected topics (the same topics as for the GIPS component) to compose a futuristic short story. In order to meet this challenge, students research the topic and current trends to project a solution twenty years in the future. Participants in SW can also advance through several levels of competition from local to international.

From the program's origins, interest and participation spread to 26 states, and states began conducting bowls and selecting winners to compete nationally. During the 1970's Affiliates were created to manage expanding student participation within states or regions, the National Bowl expanded in size, scope, and time with a team competition, scenario writing contest, individual competitions, and presentations of solutions. Twenty-six states were involved, but there were formal state programs only in Georgia, Iowa, and Louisiana. In the next decade, program participation expanded greatly, and by 1989, 38 states and Australia were running affiliate programs. Over the next two decades, the program continued to expand, both in the United States and internationally. Japan, Korea, and Singapore joined Australia, New Zealand, and 41 states within the U.S. as Affiliate programs, and five additional countries or regions were preparing for full participation through a mentoring process (see Treffinger & Jackson, 2009, for an historical summary). In 2006, in recognition of the international expansion of the program and the global impact of creative problem solving on future problems, the name of the program was officially changed to the Future Problem Solving Program International, Inc. (Volk, 2007). In this report, we present the rationale, design, and results of an international program evaluation study of the Future Problem Solving Program International (FPSPI).

## **Evaluation Goals and Design**

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The project addressed three major purposes. These were to survey key stakeholders in the program to ascertain their views of: (a.) the extent to which FPSPI meets its stated goals (i.e., does what it purports to do); (b.) the strengths of the program and areas in which improvement may be needed; and, (c.) the impact of the program on its participants. The evaluation plan took into account several key factors, including the program's goals, the identification of key stakeholders and sources of data, the program's guiding assumptions and values regarding research and evaluation, and the resources committed to the plan.

*FPSPI's Goals.* The program's stated goals guided us in framing the major questions of concern for the evaluation. The stated educational purposes of FPSPI are to "motivate and assist participants to:"

- develop and use creative thinking skills
- learn about complex issues which will shape the future
- develop an active interest in the future
- develop and use written and verbal communication skills
- learn and utilize problem-solving strategies
- develop and use teamwork skills
- develop and use research skills
- develop and use critical and analytical thinking skills.

*Identification of Key Stakeholders and Sources of Data.* The key stakeholders identified as the focus for this evaluation were: participating students in the program (and their parents), coaches, and Affiliate Directors. In addition, the opportunity for access to a small sample of "alumni" (former student participants in the program) added an additional stakeholder group to the scope of the project.

*Guiding Values and Assumptions.* We were guided by the values of data-driven evaluation and responses provided directly by key stakeholders to the evaluation team. We also proceeded on the assumption that, throughout the program today, Internet access (using a web-based survey provider) would not create an obstacle to unbiased response opportunities, and that the anonymity of responses made possible by that survey approach would contribute to confidentiality (which we also valued as a matter of responsible evaluation practice). Program evaluation using survey research always involves a challenging balance between comprehensiveness of questions and convenience of response; as surveys increase in length, the risk of lower response rates is heightened. In consultation with FPSPI's administrative leaders and research committee, and consistent with our past experience with other programs, we made the decision to use a comprehensive set of survey questions. We assumed that we could still strike a successful balance of richness of data and an adequate response pool upon which to formulate conclusions and recommendations.

*Resource Commitments.* The final factor that influenced planning and project design involved resource commitments. Despite the importance and value of evaluation data to guide the program, as a not-for-profit organization with a primary commitment to conducting programs to serve young people, FPSPI did not bring unlimited resources to a project of this kind. It was important, therefore, to be realistic about the nature and scope of evaluation activities that could be conducted within the budget constraints of the project. For example, resources did not permit stipends of any kind to be offered to survey respondents, and we were not able to incorporate an international sample of structured personal interviews into the evaluation design. Given the resources available, in collaboration with the FPSPI leadership, we concluded that the scope of

the present project would be limited to survey data (which was consistent with common practices in evaluations of other non-profit programs).

## **Evaluation Sample**

Our original plan was to define a stratified sampling plan to ensure a broad, representative sample of teams, coaches, and parents (including both U. S. and international participants). Through our initial consultations with the FPSPI leaders, we obtained data regarding 2009-10 teams registered by Affiliate. However, it became evident that there were unanticipated drawbacks to the original intent of drawing a stratified random sample of teams. First, we learned that there is no universal, standard, centralized team registration mechanism across the program, and that policies and procedures also vary among Affiliates. Second, we learned that “team” is widely treated as a dynamic and fluid construct throughout the program. In some places, and at some times, intact teams may be formed and remain together over a program year (or longer). However, in other places, at other times, participation in the program may include many more young people (often as part of school classes or enrichment programs), and teams may be formed (and re-formed) at varying times throughout the year. Thus, the “teams” that existed at one point during the year may change to a varying degree throughout the year. It was clearly not feasible to treat “team” as a consistent, stable sampling unit for the evaluation. Third, we learned that not all Affiliates offer all three basic program components (Global Issues Problem Solving [GIPS], Community Problem Solving [CmPS], and Scenario Writing [SW]) at all levels, every year, or in any year. Fourth, coaches are not “attached” to a specific team (given the dynamic nature of team formulation), nor do they work with only one component of the program in a consistent strategy throughout the program. Finally, young people may participate in one or more core components of the program in any year.

Given the realities of program participation, we decided that the best strategy would be to invite *all* coaches throughout the program to participate in the survey, along with the young people with whom they worked in the program and their parents. In the event of an unusually large response, we could decide whether to use all responses received, or formulate a stratified sample by selecting subsets of responses according to a systematic design from among the entire pool of respondents.

Table 1, on the following page, summarizes the number of respondents and their Affiliates for the coach, student, and parent surveys. We received 220 complete responses from coaches in 33 Affiliates, 633 students from 27 Affiliates, and 195 parents representing 23 Affiliates. For brevity, any Affiliate that is not named in Table 1 is one from which we did not receive responses from any of these three stakeholder groups (coaches, students, or parents).

The samples included representation from both the United States and international participants. Among coaches, 81.8% of the responses were from the U. S., and 18.2% were international. Student responses were 77.6% from the U.S. and 22.4% international, and parent

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responses were 67.7% from the U.S. and 32.3% international. Although it was not the case that the largest Affiliates (based on reported data from 2009-10) contributed the largest number of responses, nor even responses in proportion to their size, the eight largest Affiliates all had *some* responses, and 14 of the largest 15 ( $\geq 100$  teams) had *some* representation. Another concern at the outset of the project was that responses from the largest Affiliates would overwhelm respondents from the smaller Affiliates; clearly, that was not the case. We received responses

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from 17 of the 27 smallest Affiliates (< 100 teams). Given the total distribution of Affiliates across all three stakeholder groups, we decided that it was appropriate to proceed with the data analysis based on all responses we received, and so no complete responses were excluded from any of the groups for analysis purposes.

*Affiliate Directors.* We received responses from 34 Affiliate Directors (AD). Since we did not specify that only one “primary” AD should respond, it is possible that some Affiliates in which there might be co-directors or associate directors, more than one person from the same Affiliate responded. Therefore, one should not conclude that 34 different Affiliates are represented. In order to assure respondents of confidentiality, we did not request data that would have identified the respondent or his or her Affiliate or location. Responses were received from five male ADs (15%) and 29 females (85%). The group was diverse in its range of experience in the AD role. Four (11.7%) reported being in their first year as ADs. Nine (26.5%) reported having one to four years of experience, 10 (29.4%) reported five to nine years of experience, and 11 (32.4%) reported having ten years or more of experience. The AD group also reported participating (now or previously) in a wide range of other roles in FPSPI. These included 29 (85%) as coaches, 27 (79%) as evaluators, 13 (35%) as Board of Trustee members, seven (21%) as Future Scene writers, and nine (26%) in a variety of other roles. Three (9%) of the ADs indicated that they had participated in FPS themselves as students.

*Coaches.* Of 220 coaches who responded 27 (12%) were male and 193 (88%) were female. Only 16 (7%) reported having participated themselves in FPS as students, and 204 (93%) had not. In relation to their FPSPI experience, 36 (16%) were first year coaches, 74 (34%) reported one to four years of experience, and 110 (50%) reported having five years or more of experience.

*Students.* For the student sample of 633, at the time at which they responded, the average age was 13.6 (SD= 1.9), ranging from ages 9 to 18; the median and mode were both 14. The respondents included 257 males (40.6%) and 374 females (59.1%); two students declined to state their gender. They reported that, counting the current year in which they responded (the 2010-11 program year), 248 (39%) were in their first year of participation; 320 (51%) indicated two to four years of participation, and 63 (10%) said they had participated for five years or longer (two students did not respond to this item).

*Parents.* The 195 parental respondents were primarily females (161, or 83%, compared with 34 males, or 17%). Only a small number (six, or 3%) had ever participated in FPS themselves as students, and 84% of them (163) indicated that they had not been involved in FPSPI this year in any role other than as a parent. Six (3%) reported having been coaches, nine (5%) were evaluators, and 24 (12%) described a variety of other roles, including: fund raising, serving as a chaperone, providing transportation, assisting a coach, giving a science demonstration, serving as a hall monitor, emceeing, assisting with finding a guest speaker, or other short-term volunteer tasks. The average age of the children reported by the parents was 12.6, with a range from 6 to 22 years of age. A majority of parents (113) indicated that they had other children who had not participated in FPS this year. Of these, 51 (45%) checked “too old,” 29 (26%) said the program was not available at the child’s school, and 28 (25%) indicated that the other child or children were not interested in participating. “Other” responses included not being selected by teachers to participate, not being in honors classes (and therefore not “eligible” to participate), or the program being available only to “selected” students; other commitments and activities (academic, athletic, or work, for example); or a perceived “lack of fit” between the program and a child’s special needs (e.g., “autism spectrum disorder”).

*Alumni.* In the alumni sample, we received responses from 33 female respondents (69%) and 15 male respondents (31%). At the time of response, their ages ranged from 17 to 41 (Mean = 26.3; Standard Deviation = 6.4). One alumnus had only participated for one year, seven (14.6%) for two to four years, and 40 (83.3%) had participated for five or more years. In relation to the school years during which they had participated, 22 (46%) participated during Elementary School, 42 (88%) during Middle or Junior High School, and 46 (96%) participated during their High School years. Several of the alumni participated in more than one area of the program. Forty-five indicated that they participated on Global Issues Problem Solving teams, and one as an Individual. Twelve indicated that they had participated on a Community Problem Solving team. One participated in CmPS individually. Fifteen (15) participated in Scenario Writing.

## **Survey Instruments**

We designed surveys for each stakeholder group. We reviewed the survey forms with the FPSPI research committee and staff and conducted a small preliminary pilot study in order to verify completeness and accuracy. The surveys included both short-answer open-ended questions and items involving ratings on a four- or five-point Likert scale. The content of the survey asked respondents the number of years they have participated in FPSPI, and the program component or components (GIPS, CmPs, and/or SW; some students and coaches may be involved in more than one component) in which they participated during the current program year. We asked specific demographic questions appropriate to each stakeholder group (e.g., grade in school for students; various program roles in which Affiliate Directors, coaches, and parents may be involved in the program). Then, the surveys asked about overall program satisfaction and program strengths and areas needing improvement, and intent to continue future participation. Following the overall program evaluation, respondents in the student and coach survey groups were also asked specific

questions regarding each of the three program components (GIPS, CmPS, and/or SW, depending on which ones they participated in during the current year). These questions dealt with the extent to which the program was successful in addressing its stated goals, and the component's strength and areas needing improvement. Depending on the number of components in which a respondent was involved, the surveys required from 10 to approximately 25 minutes to complete.

## **Data Collection**

In survey research, a broadly representative sample of key program units (in this case, Affiliates) is more important to the project than sheer number of responses in itself. In addition, in the absence of a centralized program-wide participant registration process, it was evident that we would need to work with and through the Affiliates to issue invitations to participate in the surveys. Among the Affiliates, we found different responses, for a variety of reasons, in willingness and/or ability to provide us with databases of coaches' names and email addresses. Although we would have preferred to distribute the invitations to participate directly from our office, the final decision was that the International Office would request that Affiliate Directors distribute the appropriate information and survey invitations to their own lists of coaches. We completed the invitation and survey response instructions and sent them to the International Office for distribution through the Affiliate Directors on January 26, 2011. The online surveys were open for responses through February 20, 2011. So, depending on the dissemination of the invitation letters by the Affiliate Directors to the participants in their Affiliates, coaches, students, and parents had a "window" of approximately three weeks in which to respond. We followed the initial contact with Affiliate Directors with multiple reminders from the International Office, and an email from our office to Affiliate Directors in locations from whom we observed few or no responses having been received prior to the survey closing

dates. For the alumni sample, the International Office provided us with a list of names and email addresses, and we sent direct email invitations and instructions to each person on that list, followed by two reminder emails, with the same survey opening and closing dates.

The end result of the sampling procedure's dependence on a dispersed approach to survey invitations, however, is that we are unable to verify independently whether all Affiliates disseminated the information to all coaches, included all the appropriate details, or carried out the invitations in a timely and encouraging manner (while we did keep in mind that each Affiliate Director had many other concurrent responsibilities beyond this project). Given the potential importance and value of evaluation evidence to the program, we can only assume that these tasks were carried out in an efficient and effective manner among all the Affiliates.

## **Evaluation Survey Results**

In this section, we present the evaluation survey results for several key areas: overall evaluations of program satisfaction, accomplishment of program goals, specific issues addressed by each subset of the overall sample, and evidence of program impact.

### **Overall Program Satisfaction**

We begin by comparing each of the sample groups in relation to *overall satisfaction with the FPSPI program* this year. Table 2 presents the distribution and mean scores for each group, based on a 1-4 scale (1 = low, 2 = Limited, 3 = Moderate and 4 = high), and also converted to a percentage of overall satisfaction (based on dividing each average by 4 and expressing as a percent). Note that the means for all samples are greater than 3.0, and the overall satisfaction percentages range from 82.8% to 94.0%, indicating a moderate to high level of overall satisfaction with the program among all response groups.

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The AD sample had the highest rating of overall satisfaction with the program, followed by the coaches. While still very positive, the parents' own overall satisfaction was lower than either the ADs or the coaches. The students' overall level of satisfaction (also still greater than 3 out of 4) was the lowest of all the samples (and the parents viewed their children's overall satisfaction very close to its actual rating). There was a small but statistically significant difference between the overall satisfaction ratings from female students (3.40) and from male students (3.25), and the overall satisfaction ratings by middle level (ages 12-15) students (mean = 3.27) were slightly lower than the ratings by senior (ages 16+) students (mean = 3.49) or junior (ages 9 -11) students (mean 3.48).

Responses to an open-ended question regarding what respondents would tell other people about the program also indicated positive support for the value and benefits of the program. Comments describing the program as "excellent" or "great" and recommending it to others (or highly recommending it) were the most frequent responses to this question among ADs, coaches, and parents, and also rated highly by students (for whom *fun* was the most frequently given response). Comments regarding *teaching important life skills* were also given frequently by both ADs and coaches, along with *developing advanced thinking skills* and *developing problem-solving skills and creativity*. Students also emphasized that they would tell others that the program develops *problem-solving skills* and that it is *challenging and involves hard work*.

The small group of alumni respondents also rated their experience with the program positively. This was reflected both in the closed, and open-ended items. Respondents noted personal relationship, learning to think creatively and critically, learning how to choose the best

solution, learning a specific process for problem solving, and opportunities to improve their research and writing skills as important changes that program participation brought to their lives.

Both ADs and coaches reported a sense of personal satisfaction about their roles in the program, and reported that their participation was a valuable learning experience for themselves and the students. The adults involved in the program also reported a mostly positive experience working with other adults in the program. The majority of parents had positive feelings about the participation of their children in the program.

Clearly, then, respondents to the evaluation surveys perceived FPSPI as providing a positive and important set of experiences for students and adults. Their responses supported the conclusion that FPSPI is successfully doing what it purports to do and offers a variety of well-received services and activities to its participants.

## **Program Goals**

We asked ADs, coaches, and students 12 questions that dealt specifically with the program's goals in relation to the each of three component of FPSPI (Global Issues Problem Solving [GIPS], Community Problem Solving [CmPS], and Scenario Writing [SW]). The items included: developing teamwork and collaboration (working together, cooperating with each other); developing leadership skills; enhancing the skills of preparing and delivering materials and/or presentations that communicate ideas effectively; showing evidence that team members are able to apply FPS skills in other situations; developing the skills needed to manage time effectively; fostering creative thinking (the ability to generate many, varied, and unusual options); fostering critical thinking (the ability to sort and sift information or to focus one's thinking); developing research and inquiry skills (the ability to gather information from many and varied sources); using a deliberate process for Creative Problem Solving methods and tools;

developing skills in listening and following directions; learning about complex issues that will shape the future; and, developing an active interest in the future. The Scenario Writing component's questions varied slightly (including writing skills, for example, and omitting teamwork and collaboration). Responses to these items indicated that all three components of the FPSPI program were rated above average or higher in relation to all 12 goal and outcome statements.

The highest rated goals for GIPS were: *complex issues shaping the future, teamwork and collaboration, active interest in the future, learning a creative problem-solving process, and fostering creative thinking*. For CmPS, the highest rated items were: *teamwork and collaboration, leadership skills, presentation/communication of ideas, applying skills in other situations, making a difference in shaping the future, and fostering critical thinking*. For SW, the highest rated areas were: *active interest in the future, complex issues shaping the future, presentation/communication of ideas, expanding and enhancing writing skills, and, thinking and researching futuristically*.

We also compared ratings by the ADs, coaches, and students for several items relating to the extent to which each of the three main components of the program is meeting FPSPI's goals and purposes. These items included the primary FPSPI goals and purposes and several additional items deemed to be of potential importance when the evaluation surveys were constructed. For each component's comparisons, we included only the items that were rated by all three sample groups; these varied slightly among the three program components.

**Global Issues Problem Solving (GIPS).** For GIPS, we compared responses by ADs, coaches, and students on 12 items, using a five-point Likert scale (from 1-low to 5-high, with 3-average). The mean responses from all groups were above 3.00. The ratings by ADs ranged from

3.82 to 4.69 (on a five-point scale), by coaches from 3.68 to 4.39, and by students, from 3.48 to 4.14. All three groups agreed on the two highest rated items (“complex issues shaping the future” and “teamwork and collaboration”) and on the lowest two items (“applying FPS skills in other situations” and “listening and following directions”). The results are summarized in Table 3 and illustrated in Figure 1.

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**Community Problem Solving (CmPS).** For CmPS, we compared responses by ADs, coaches, and students on 12 items (except for students, for which there were 11 items); again, all mean ratings were above the “average” rating (>3 on a 1-5 scale): ratings by ADs ranged from 3.97 to 4.70, by coaches from 3.82 to 4.45, and by students from 3.70 to 4.33. All three groups agreed on the highest rated item (“teamwork and collaboration”), and rated “leadership skills” in the highest four. The results are summarized in Table 4 and illustrated in Figure 2.

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**Scenario Writing (SW).** For SW, we compared responses by ADs, coaches, and students on eight common items; again, all the mean ratings were above average (>3 on a 1-5 scale): ratings by ADs ranged from 3.30 to 4.27, by coaches from 3.55 to 4.02, and by students from 3.32 to 3.39. All three groups agreed on the highest rated item (“active interest in the future”, although tied for the coaches with “complex issues shaping the future”), and agreed in rating

“apply in other situations” lowest. These results are summarized in Table 5 and illustrated in Figure 3.

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Insert Table 5 and Figure 3 About Here

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### **Questions Specific To Sample Groups**

*Survey Responses from Affiliate Directors.* We asked ADs several questions specific to their role, in addition to questions that addressed topics we also addressed with coaches and students. We received responses from 34 ADs (including co- or associate ADs in some cases); they represented a broad range of experience and involvement in FPSPI in various other roles (and more than 60% reported five years or more of experience in the AD role. They reported that their work offered them a variety of personal benefits, most frequently: watching FPSers grow as creative individuals, learning to think more creatively themselves, applying their FPS experience in other settings, appreciating students’ ability to overcome difficulties, and discovering “the amazing things” that students can accomplish. Their personal satisfaction with the workload, time demands, and expectations of the AD role was moderately positive (3.09 out of 4). The most frequently cited things they liked best about being ADs were: interacting with students and coaches, working with positive adults, guiding process learning, and being part of a program that has great value for children and youth and makes a difference in students’ lives. The areas they found most challenging about the AD role were: recruitment and promotion of the program, dealing with time demands and management, the stress of multiple demands and deadlines, and funding for the program. Administratively, on a five-point scale, the ADs were positive about: communication among ADs (3.53), the International office and staff (4.41), and the Board of

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Trustees (3.56); the helpfulness of support material for them and for teams (4.41 and 4.21); and, the value of Governing Council meetings (4.00). They considered the cost of participating in FPSPI to be reasonable and appropriate (4.35). Their evaluations of Practice Problems, Qualifying Problems, Affiliate Bowl Problems, and the IC Problem were all very positive (ranging from 4.21 to 4.41). The ADs identified a variety of strengths of the IC program, including: its specific events and activities; opportunities for international experience and networking; the organizational and staff commitment and effort invested; and the opportunities for participants to travel and experience new places. The most frequently noted areas for improvement in IC were: choices of site and location (including some interest in a “truly international” experience outside the USA); more help for staff to manage the workload and variety of activities at IC; addressing challenges relating to tours; and, obtaining sponsorships or scholarships.

*Survey Responses from Coaches.* Coaches reported that they derive great satisfaction from watching their students learn and grow creatively and academically. Coaches expressed high expectations for their students and faith in their potential. They also reported benefitting personally. Overall, the coaches responding to this survey felt that the FPSPI program does what it purports to do, with the majority reporting that the program does a good or great job on the areas that were measured by this assessment. This was true across all three program components. Challenges reported by coaches included the amount of time involved, problems connected with funding, and keeping students prepared and motivated. Coaches also offered suggestions to improve the program, including the use of technology across several program areas and the need for improved training, especially for new coaches.

*Survey Responses from Students.* The students who responded reported positive feedback regarding the program. The survey results confirmed that each of the program components met the program's stated goals. In addition to meeting the program's goals, the students indicated that they had gained other important lifetime skills. Several students pointed out that the program met their need to be intellectually challenged. While the students noted the program's overall strengths, they also cited a number of areas where the program could be improved. Although a strength of the program is its structure, for example, the data suggested that the effectiveness of the program often hinged on competent, well-trained, committed coaches (which was not universally present).

*Survey Responses from Parents.* We also asked parents some questions that were unique to their role and perspectives regarding their children's participation in FPSPI. The parents who responded were moderately positive in their view of the FPSPI program, as well as in their perceptions of their youngsters' satisfaction with the program. Instances in which parents reported that their children would not (or probably would not) continue their involvement in FPS, if they had the opportunity to do so, were typically the result of an issue or concern unique to their specific setting, rather than to a general or programmatic issue. The parents generally recognized the same areas of strength in the program as were identified by ADs, coaches, and students. While many parents reported no major areas needing improvement, several important opportunities and areas of concern did arise, including: parent communication and opportunities for involvement, expanding publicity and awareness of the program (and program expansion), training and effectiveness of teachers and coaches, role in the school curriculum, and some concerns for topic appropriateness and relevance (particularly for younger students).

*Survey Responses from Alumni.* While their overall experience was positive, several of the alumni saw areas for possible improvement. The major areas of concern had to do with improving the quality and helpfulness of evaluation feedback, and ways to improve the website and the program's use of technology. Although this was a small, non-random sample, these alumni reported that program participation had value over the long term, and that the program's goals have been met. They established lasting friendships, acquired important life-long skills, and have been able to apply those skills with confidence in both academic and work settings.

### **Program Strengths, Impact, and Recommendations**

Finally, the evaluation addressed the overall strengths of the program, evidence for its impact, and several recommendations for continuous improvement and strengthening the program.

*Strengths.* Taken together, the data from our surveys document that there is broad and strong overall satisfaction with the FPSPI program. It is widely perceived that FPSPI serves important purposes effectively for its participants. Respondents reported that the program's goals, rules, and procedures are clear, easy to understand, and fair. The feedback and evaluation participants received at Affiliate Bowls and IC, as well as those events themselves, received praise as program strengths. Affiliate Directors, coaches, students, and alumni offered comments as to the value in traveling to and competing in these events, as well as the overall organization of the events themselves. Several students and coaches also noted that FPS is fun! Overall evaluations of practice problems, qualifying problems, and Bowl problems were all positive (although open-ended responses raised some questions regarding topics and specific age group relevance). In relation to technology, the responses of all groups acknowledged that the program has begun taking action to expand and enhance applications of technology in a variety of ways,

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and emphasized the importance and value of future efforts in those areas. Each of the program's major components, Global Issues Problem Solving (GIPS), Community Problem Solving (CmPS), and Scenario Writing (SW), was also viewed positively by all respondent groups.

*Program Impact.* The ADs, coaches, parents, and alumni all provided evidence indicating positive impact of FPSPI in a variety of ways. Many adults wrote about the value and personal satisfaction of observing students' growth and accomplishments and their pride in the outstanding efforts of the participating students; they often described the program's impact on students with high praise, and commented also on their participation's impact on them as adults as well. Respondents appreciated the varied ways that FPSPI responds to student strengths and talents, the importance and value of providing international or cross-cultural experiences for students and travel experiences, the opportunities the program provides for young people to learn and apply a structured process for problem solving, and challenging young people to develop a futuristic outlook and to be forward-looking in addressing global challenges and issues. Based on the open-ended comments offered by each of the groups surveyed, we noted wide agreement that the program's benefits extend well beyond the stated program goals. Among the extended benefits, respondents emphasized a variety of life skills including: time management, self-direction, self-management, leadership, socialization skills, the use of technology, a broader academic experience that is both challenging and interesting, and (particularly among those involved in Community Problem Solving) community service. We conclude, therefore, that the respondents provided evidence (albeit informal, anecdotal evidence) that participation in FPSPI has had positive impact on young people— in personal relationships, in subsequent academic experiences, and in their work or career experiences.

*Recommendations.* Even a strong, positive program has areas that can continue to be strengthened. Therefore, the evaluation offered a number of recommendations for continuous improvement. Some concerns, such as time demands, for example, vary widely in relation to both the actual time commitments by individuals and their personal response to that investment. As a result of this study, future efforts may be warranted to document and analyze these factors in greater depth, particularly for Affiliate Directors and coaches. Additional inquiry may also be warranted to examine the factors influencing differential responses to the program's main components and their implications for participants. The recommendations from the present study involved nine general themes and also included several specific suggestions that were intended for internal prioritization and use within the program (and thus are outside the scope of this report). The nine themes were: expanding the view and presentation of the program's goals and the unique elements and contributions of each program component; strengthening or expanding funding, marketing, publicity, and scholarship support; addressing potential tensions between required and voluntary student participation in the program; expanding training and mentoring opportunities for coaches and other program volunteers; examining and strengthening the role and uses of technology; examining the strengths, concerns, and opportunities relating to program-wide administrative and management systems; continuously reviewing and reassessing program rules, evaluation, and feedback; developing a systematic approach to build and maintain relationships with parents; and, building and maintaining effective ongoing contact and relationships with past student participants ("alumni"). All of these themes are currently being addressed through the FPSPI Strategic Plan.

In summary, FPSPI is a strong, constructive, expanding international program that provides engaging and challenging opportunities for children and youth to learn and apply

creative thinking, critical thinking, and problem-solving skills. This evaluation affirmed the program's strengths and benefits as perceived by program leaders, coaches, participating students, and parents, and also identified several areas for the ongoing improvement that is essential for all successful educational programs.

## **References**

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**Table 1: Distribution of Respondents By Affiliate**

Coaches			Students			Parents		
Affiliate	Count	Percent	Affiliate	Count	Percent	Affiliate	Count	Percent
AK	2	0.9%	AK			AK		
AL	2	0.9%	AL	11	1.7%	AL		
AU	13	5.9%	AU	40	6.3%	AU	9	4.6%
AZ	9	4.1%	AZ	30	4.7%	AZ	11	5.6%
CA	4	1.8%	CA	15	2.4%	CA	8	4.1%
CT	5	2.3%	CT	67	10.5%	CT	10	5.1%
FL	14	6.4%	FL	57	8.9%	FL	5	2.6%
GA	9	4.1%	GA	22	3.5%	GA	15	7.7%
IA	13	5.9%	IA	20	3.1%	IA	2	1.0%
ID	5	2.3%	ID	7	1.1%	ID	1	0.5%
IN	6	2.7%	IN	15	2.4%	IN	4	2.1%
JP	1	0.5%	JP			JP		
KR	2	0.9%	KR	4	0.6%	KR		
KY	41	18.6%	KY	8	1.3%	KY	4	2.1%
MA	1	0.5%	MA			MA		
ME	2	0.9%	ME			ME		
MI	5	2.3%	MI	7	1.1%	MI	2	1.0%
MN	7	3.2%	MN	6	0.9%	MN	20	10.3%
MO	1	0.5%	MO	23	3.6%	MO	1	0.5%
MS	1	0.5%	MS	10	1.6%	MS	1	0.5%
MT	1	0.5%	MT			MT		
NC	4	1.8%	NC	5	0.8%	NC	4	2.1%
NJ	2	0.9%	NJ	37	5.8%	NJ	9	4.6%
NZ	4	1.8%	NZ	4	0.6%	NZ		
OH	5	2.3%	OH	18	2.8%	OH		
PA	2	0.9%	PA	4	0.6%	PA		
SG	20	9.1%	SG	93	14.6%	SG	51	26.2%
TX	7	3.2%	TX	7	1.1%	TX	7	3.6%
UT	6	2.7%	UT			UT		
VA	2	0.9%	VA	8	1.3%	VA	1	0.5%
WA	6	2.7%	WA	37	5.8%	WA	4	2.1%
WI	14	6.4%	WI	51	8.0%	WI	19	9.7%
WV	3	1.4%	WV	21	3.3%	WV	1	0.5%
			MY	1	0.2%	MY	3	1.5%
None	1	0.5%	None	5	0.8%	None	3	1.5%
N and # of affiliate:	220		33	633		27	195	23

**Table 2: Overall Satisfaction Ratings For All Respondent Groups**

Group	Low	Limited	Moderate	High	Average	As % of 4
ADs	0	0	8	26	3.76	94.0
Coaches	2	15	82	121	3.46	86.5
Parents (Self)	5	20	79	91	3.31	82.8
Parents (Student)	5	12	87	118	3.43	85.8
Students	21	43	267	300	3.34	83.5

**Table 3: Ratings of Goal Items for the GIPS Program Component**

<b>Item</b>	<b>AD</b>	<b>Coach</b>	<b>Student</b>
A. Creative Thinking	4.29	4.12	3.99
B. Critical Thinking	4.50	4.23	3.87
C. Problem Solving Process	4.38	4.24	3.86
D. Teamwork and Collaboration	4.59	4.34	4.13
E. Leadership	4.15	3.94	3.90
F. Research and Inquiry	4.21	3.86	3.71
G. Communication & Presentation	4.09	3.85	3.81
H. Apply in other situations	3.91	3.70	3.48
I. Listening & Following Directions	3.82	3.68	3.54
J. Manage Time Effectively	4.21	3.94	3.74
K. Complex Issues Shaping Future	4.68	4.39	3.79
L. Active Interest in Future	4.53	4.20	4.14

**Table 4: Ratings of Goal Items for the CmPS Program Component**

<b>Item</b>	<b>AD</b>	<b>Coach</b>	<b>Student</b>
A. Creative Thinking	4.33	4.00	3.96
B. Critical Thinking	4.33	4.15	4.07
C. Problem Solving Process	4.10	3.82	3.90
D. Teamwork and Collaboration	4.70	4.44	4.33
E. Leadership	4.63	4.45	3.97
F. Research and Inquiry	4.23	4.00	3.92
G. Communication & Presentation	4.57	4.39	3.90
H. Apply in other situations	4.57	4.06	3.70
I. Listening & Following Directions	4.07	4.15	3.80
J. Manage Time Effectively	4.37	4.18	3.74
K. Complex Issues Shaping Future	4.03	4.27	4.13
L. Active Interest in Future	3.97	4.27	---

**Table 5: Ratings of Goal Items for the SW Program Component**

<b>Item</b>	<b>AD</b>	<b>Coach</b>	<b>Student</b>
Creative Thinking	4.00	3.96	3.92
Critical Thinking	3.93	3.96	3.55
Problem Solving Process	3.33	3.61	3.50
Research and Inquiry	3.70	3.67	3.69
Apply in other situations	3.30	3.55	3.32
Manage Time Effectively	3.43	3.86	3.45
Complex Issues Shaping Future	4.23	4.02	3.57
Active Interest in Future	4.27	4.02	3.99

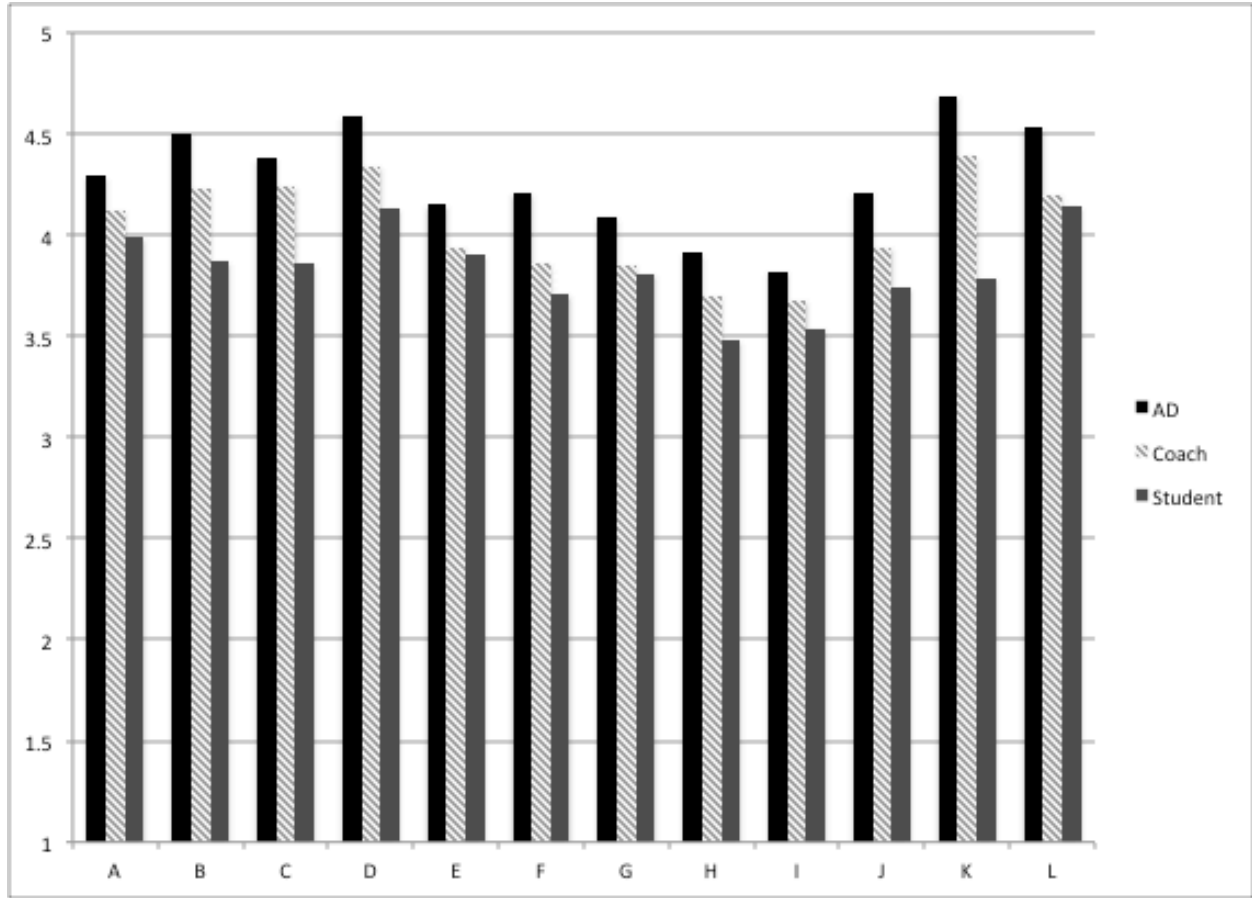


Figure 1. Ratings of Goal Items for the GIPS Program Component

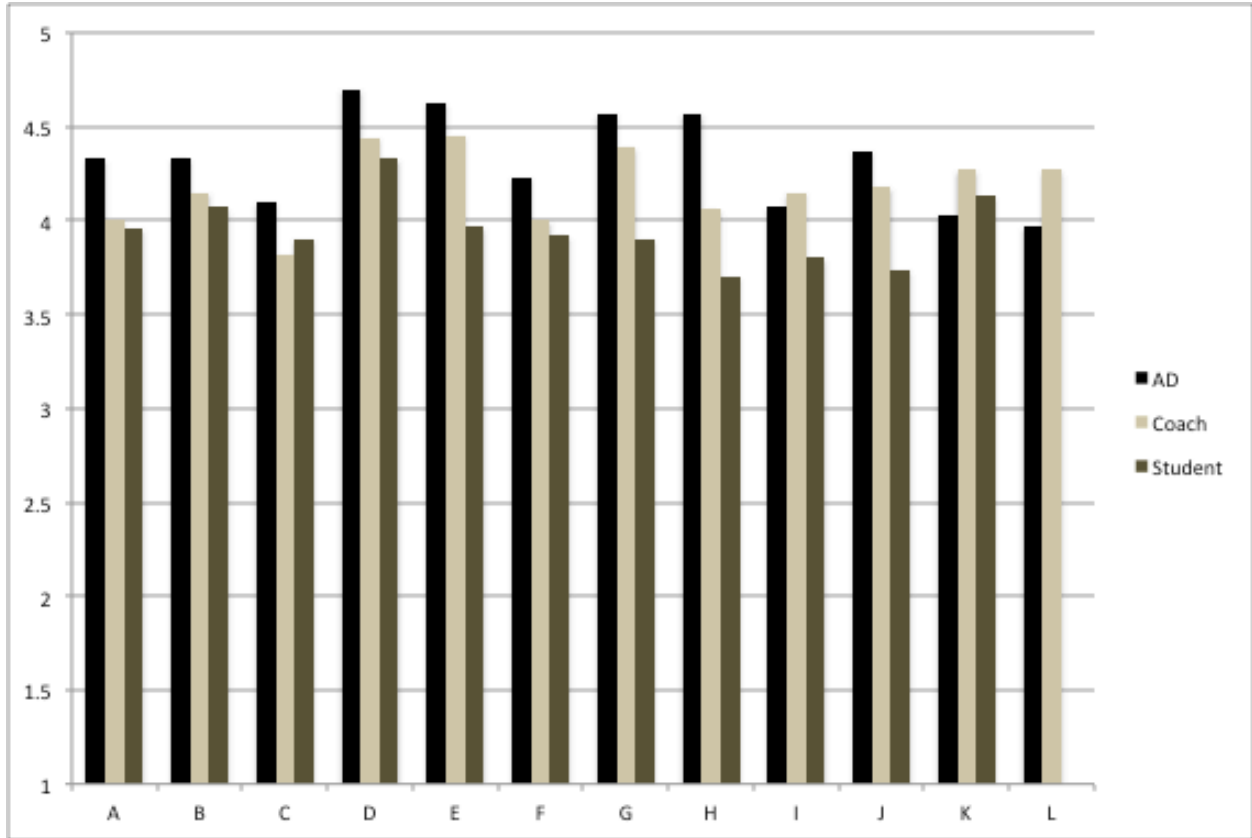


Figure 2. Ratings of Goal Items for the CmPS Program Component

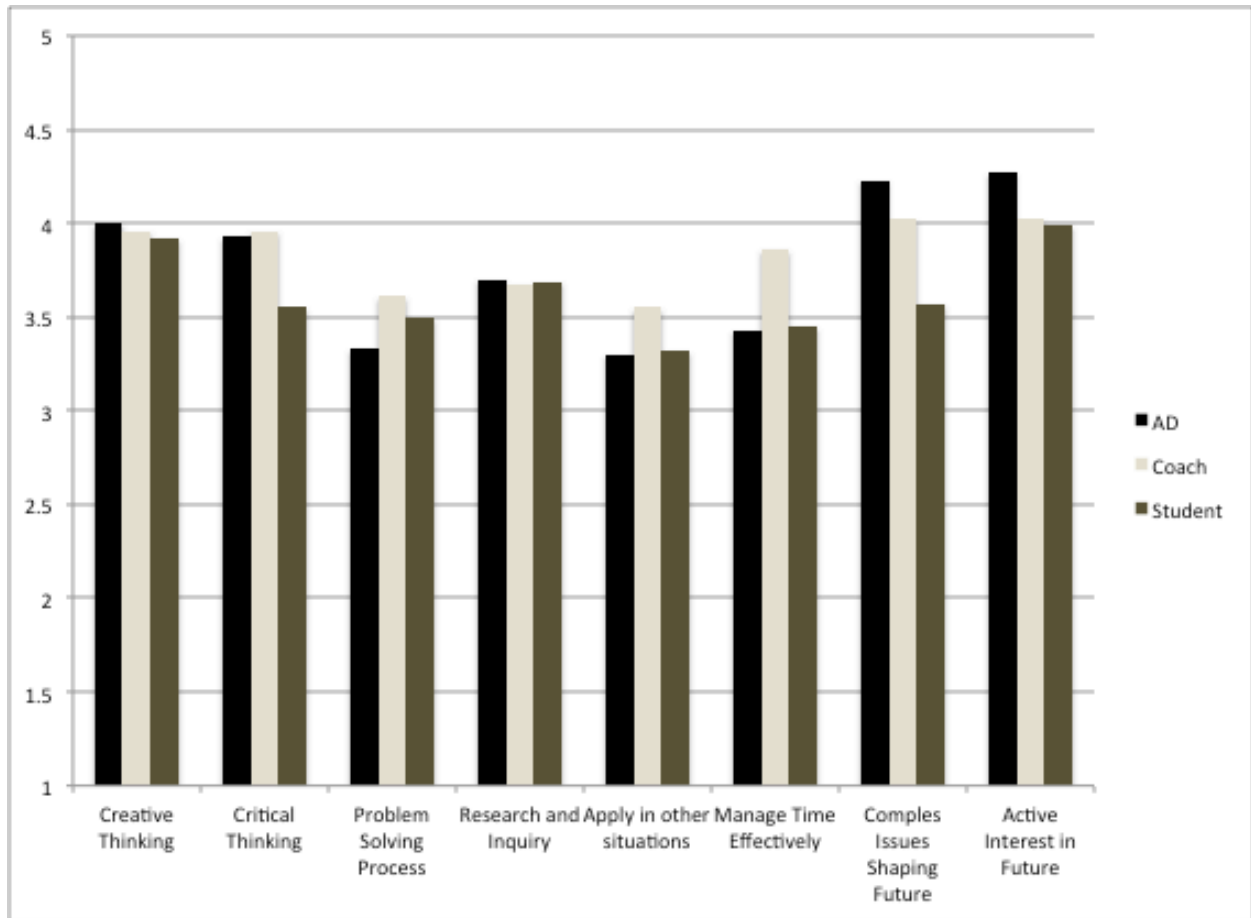


Figure 3. Ratings of Goal Items for the SW Program Component