

# **UPSIDE Ohio Project**

## **Using Plants for Science Instruction and Diverse Education**

### **Impact Findings**

**May 2008**

**David C. Crawford  
&  
UPSIDE Ohio Team**

# Using Plants for Science Instruction and Diverse Education

## UPSIDE Ohio Project

### Impact Findings

#### Background:

The UPSIDE Program was a collaborative of The Botanical Garden Association, Inc. (BGA), and the Stark County Educational Service Center (SCESC), which consists of seventeen school districts. Other partners included the Ohio State University Extension, Stark County, Malone College, and the Huston Brumbaugh Nature Center of Mount Union College. The BGA is a nonprofit organization based in Stark County, Ohio whose mission is to educate the public about plants, gardening and the environment. The BGA has been successfully involved in educational outreach since its inception in 1999.

Research has shown the positive impact garden based learning has on children's understanding of key life science concepts and their investigative skills. The National Gardening Association (NGA) conducted a 1992 study of third and fifth grade classrooms using *GrowLab* indoor gardens and the accompanying curriculum. *GrowLab* classrooms scored significantly higher than control classrooms in students understanding of key life science concepts and science inquiry skills. Students in fifth grade classrooms in the same study scored significantly higher than control classes on attitude scales measuring "concern for the environment" and "confidence in ability to do science".

Ohio Academic Content Standards require knowledge of native Ohio plants in grades two and three. Little if any teaching material exists that enables teachers to cover this topic in a comprehensive manner. Teachers in our area (Stark County) have expressed the need for help in the life science and science inquiry areas and specifically in plant science and native Ohio plants. A survey was conducted by the Stark County Educational Service Center (SCESC), a major collaborator on this project. Out of the fourteen school districts surveyed, 90% stated a need for help in teaching native Ohio plants and other plant related topics for second, third and fourth grade students.

Considering the various needs posed by science literacy objectives, academic standards, environmental concerns and teachers need for assistance the Botanical Garden Association, Inc. (BGA), has implemented this educational initiative to address these particular areas. Therefore, this project has attempted to provide educational training and tools for specific areas of environmental literacy, objectives as stated below:

- To recognize the value of native Ohio plants and the role they play in our local ecosystems.
- To understand the basic needs and interdependence of living things.
- To develop science inquiry skills.
- To build confidence in the ability to solve problems.
- To cultivate respect for the natural world around us.

Over the two year period, the UPSIDE Ohio Program targeted:

- 200 community members,
- 192 teachers,
- 7,200 students in Stark County, as well as many others statewide.

The specific objectives of the UPSIDE Program follows:

- To increase participants' knowledge, science inquiry skills, and decision making abilities related to plant and environmental science.
- To increase participants knowledge of native Ohio plants and the plants interdependency in the local environment.
- To assist participants in exploring and implementing measures that will address local environmental concerns and to make positive changes in their community.
- Author a Native Ohio Plants Resource Guide and distribute to more than 9000 individuals.

### **Activities:**

Through teacher training workshops, and the implementation of twenty seven (27) Grow Labs, teachers and students in Stark County have applied and practiced science skills while performing a variety of hands on investigations using plants that they cultivated. Two workshops were held for community members to explore, increase knowledge of and disseminate information on native Ohio plants and their value to the local ecosystem. A native Ohio plant guide was developed for educating the public statewide and plans for distribution to more than 9,000 citizens has begun.

The intent of this evaluative report will focus on the teachers' perceptions regarding content, relevance of materials, and improvement of future programs. Teachers' have also demonstrated an increase of number of ideas and thoughts regarding Native Ohio Plants as demonstrated in their pre & post workshop mapping activity. At the conclusion of the workshop, participants were asked to complete an evaluation in order to access the perceptions of participants, impact of the workshop and to secure suggestions to improve future UPSIDE training opportunities. Random classroom and anonymous students' knowledge gained will be presented from data collected from a pre & post project instrument facilitated by teachers and returned to Program Director.

In order to begin to meet the objectives, the UPSIDE Program implemented several teacher training workshops, classroom activities taught by the UPSIDE Project Director through the implementation of twenty seven (27) Grow Labs. More than one hundred and eight (180) GrowLab Curricula were purchased, teachers trained and distributed for classroom use.

## **Methodology**

All participants will remain anonymous. No comparison of students or records of individual students will be kept by the UPSIDE Program. Classroom instructors may utilize the pre & post test results at their own discretion for student assessment. Workshop attendance, journals, participant records and other information have been kept strictly confidential by educators and UPSIDE Team. Observation and instruction by UPSIDE Program staff will occur throughout the program. This observation will assist in formative collection of information to enhance and improve both current and future program efforts.

No pictures will be taken UPSIDE Program Team without prior approval by participant or parent/guardian.

## **Data Analysis**

### **Teacher Workshops:**

In order to begin to meet the objectives, the UPSIDE Program implemented several teacher training workshops, classroom activities taught by the UPSIDE Project Director through the implementation of twenty seven (27) Grow Labs. More than one hundred and eighty (180) GrowLab Curricula were purchased and distributed for classroom use, while more than one hundred forty two (142) teachers were trained through hands out.

One hundred percent (100%) of teachers who completed a pre post mapping exercise demonstrated new ideas and knowledge gained as suggested by an increase in number of names of Native Ohio Plants, new methods to use materials in the classroom and sharing of ideas.

### **Students:**

Observations by Program Director, student attendance and participation were collected for classroom evaluation by teachers and will not be part of this report. All students participated in journaling activities as required by classroom teachers. Table 1 reports UPSIDE Project participation through funding Cycle.

**Table 1**  
**Participant Summary of UPSIDE Ohio Grow Lab Sites Supported by OEEF Grant Dollars**

| <b>Semester</b>    | <b>Districts</b> | <b>Schools</b> | <b>Teachers</b> | <b>Classes</b> | <b>K</b> | <b>1</b> | <b>2</b> | <b>3</b> | <b>4</b> | <b>Gr 6 12</b> | <b>Students</b> |
|--------------------|------------------|----------------|-----------------|----------------|----------|----------|----------|----------|----------|----------------|-----------------|
| <b>Fall 2005</b>   | 7                | 16             | 41              | 48             | 0        | 0        | 12       | 2        | 34       | 0              | 1270            |
| <b>Spring 2006</b> | 9                | 13             | 32              | 44             | 5        | 4        | 18       | 2        | 12       | 3              | 1100            |
| <b>Fall 2006</b>   | 7                | 17             | 37              | 51             | 0        | 0        | 10       | 2        | 39       | 0              | 1166            |
| <b>Spring 2007</b> | 8                | 14             | 32              | 37             | 0        | 0        | 9        | 0        | 28       | 0              | 828             |
| <b>Sub Total</b>   | 31               | 60             | 142             | 180            | 5        | 4        | 49       | 6        | 113      | 3              | 4364            |

Table 2 reports UPSIDE Project participation beyond funding Cycle, suggesting success and positive sustainability. This may suggest a “need” and “want” for further educational programming efforts of this type.

**Table 2**  
**Participant Summary of UPSIDE Ohio Grow Lab Sites Beyond OEEF Grant Dollars**  
**Demonstrates Sustainability**

| Semester         | Districts | Schools | Teachers | Classes | K | 1 | 2  | 3 | 4  | Gr 6 12 | Students |
|------------------|-----------|---------|----------|---------|---|---|----|---|----|---------|----------|
| Fall 2007        | 4         | 9       | 21       | 26      | 0 | 0 | 7  | 0 | 19 | 0       | 675      |
| Spring 2008      | 6         | 8       | 18       | 29      | 0 | 0 | 15 | 0 | 40 | 0       | 785      |
| <b>Sub Total</b> | 10        | 17      | 39       | 55      | 0 | 0 | 15 | 0 | 40 | 0       | 1460     |

Table 3 represents the total participation of the UPSIDE Project through funding cycle and beyond as of Spring 2008.

**Table 3**  
**Overall Participant Summary of UPSIDE Ohio Grow Lab Sites**

| Fall 2005<br>Spring 2008 | Districts | Schools | Teachers | Classes | K | 1 | 2  | 3 | 4   | Gr 6<br>12 | Student<br>s |
|--------------------------|-----------|---------|----------|---------|---|---|----|---|-----|------------|--------------|
| <b>Total</b>             | 41        | 77      | 181      | 235     | 5 | 4 | 64 | 6 | 153 | 3          | 5824         |

A pre post activity test was administered by teachers to students and returned to Program Director for summary. The pre/post instrument was designed by evaluator to measure knowledge of history of Native Ohio Plants, ability to select Native Ohio Plants and knowledge of basic plant parts. Volunteers tabulated the pre and post figures of random elementary classrooms from across Stark County. Due to the large number of classrooms, students, limited staff and volunteers, twenty classroom results were submitted for review. Please refer to following Table 4 and Table 5 for findings of suggested knowledge gained, in part due, to participation in the UPSIDE Program.

**Table 4 Students Demonstrating Knowledge Gained**  
**Second Grade Students/ Pre Post Test**

| Grade              | Number of Students In Classroom | Number Demonstrated Knowledge Gained |
|--------------------|---------------------------------|--------------------------------------|
| 1. 2nd             | 21                              | 21                                   |
| 2. 2nd             | 17                              | 13                                   |
| 3. 2nd             | 20                              | 18                                   |
| 4. 2nd             | 21                              | 16                                   |
| 5. 2nd             | 19                              | 19                                   |
| 6. 2nd             | 18                              | 15                                   |
| 7. 2 <sup>nd</sup> | 17                              | 13                                   |
| Totals             | 133                             | 115                                  |

Eighty six percent (86%) of second grade students, from random classrooms, exhibited an increase of knowledge gained.

**Table 5 Students Demonstrating Knowledge Gained  
Fourth Grade Students/ Pre Post Test**

| Grade   | Number of Students<br>In Classroom | Number Demonstrated<br>Knowledge Gained |
|---------|------------------------------------|---|
| 1. 4th  | 43                                 | 42                                      |
| 2. 4th  | 42                                 | 36                                      |
| 3. 4th  | 15                                 | 12                                      |
| 4. 4th  | 22                                 | 18                                      |
| 5. 4th  | 13                                 | 7                                       |
| 6. 4th  | 47                                 | 36                                      |
| 7. 4th  | 26                                 | 18                                      |
| 8. 4th  | 19                                 | 12                                      |
| 9. 4th  | 23                                 | 16                                      |
| 10. 4th | 20                                 | 13                                      |
| 11. 4th | 23                                 | 16                                      |
| 12. 4th | 21                                 | 13                                      |
| 13. 4th | 20                                 | 11                                      |
| 14. 4th | 16                                 | 14                                      |
| 15. 4th | 18                                 | 16                                      |
| 16. 4th | 16                                 | 9                                       |
| Total   | 384                                | 289                                     |

Seventy five percent (75%) of fourth grade students, from random classrooms, exhibited an increase of knowledge gained. No demographic information was collected; therefore no comparisons can be suggested.

**UPSIDE Project Teacher Post Program Feedback:**

At the end of each program session, teachers were asked to complete an anonymous, one page evaluation to be returned to the facilitator. The evaluation instrument was designed and utilized by the SAMM Program at RG Drage Educational Center for similar teaching trainings. This instrument attempted to measure participants' perceptions regarding the usefulness of the UPSIDE Program and materials, how new knowledge may be utilized and collection of suggestions to improve future UPSIDE programs. Twenty five surveys were returned.

This post activity evaluation has limitations. The data were collected utilizing a post project measurement questionnaire that focused on students' participation, increase of knowledge and UPSIDE/GowLab materials. Evaluations may be hastily completed, participants may be exhausted from their classroom responsibilities and the rush to return home is present. Nevertheless, the post activity survey is an effective, inexpensive method of gathering feedback and participant recommendations to improve future programs. Descriptive statistics such as percentages and means were used to summarize data. Responses to open ended questions were entered into the Microsoft Office Word 2003 program and analyzed using qualitative techniques. No demographic data were collected; therefore, no comparisons or assumptions can be made.

Please refer to Table 6 for summation of UPSIDE Ohio Teacher (GrowLab): Teacher Feedback Survey findings.

**Table 6**

**UPSIDE Ohio Teacher (GrowLab): Teacher Feedback Survey  
(Variables 1 10)**

| <b>N= 25</b> | <b>Variables</b>   | <b>Mean</b> |  |  |
|--------------|--|-------------|--|--|
|              | <b>1. Quality of Workshop</b>  | <b>4.7</b>  |  |  |
|              | <b>2. Ability to Network with colleagues</b>                         | <b>4.1</b>  |  |  |
|              | <b>3. Ability to integrate project into multiple areas</b>           | <b>4.2</b>  |  |  |
|              | <b>4. Quality &amp; usefulness of classroom visits</b>               | <b>4.9</b>  |  |  |
|              | <b>5. Quality &amp; usefulness of GrowLab curriculum, activities</b> | <b>4.8</b>  |  |  |
|              | <b>6. Quality &amp; usefulness of GrowLab equipment/supplies</b>     | <b>4.6</b>  |  |  |
|              | <b>7. Level of student excitement about activities</b>               | <b>4.6</b>  |  |  |
|              | <b>8. Gains in student content knowledge about plant science</b>     | <b>4.5</b>  |  |  |
|              | <b>9. Gains in student content knowledge about Ohio plants</b>       | <b>4.5</b>  |  |  |
|              | <b>10. Growth of student inquiry skills</b>                          | <b>4.6</b>  |  |  |

**Scale: 1 Low, 2, 3, 4, 5 High; N/A (Not Applicable)**

Assuming that a ranking of “3” is average, then the impact of the project upon participants and quality of materials ranked above average in all areas. Findings shown in Table 1 demonstrate that teachers perceived the content of materials to be rated “High”. The two lowest scored statements, yet above the average mark of 3, “2. Ability to Network with colleagues and 3. Ability to integrate project into multiple areas” received several suggestions to improve, while still receiving a rating of above “4”. Regarding ability to network, participants stated, “Within our building yes”, “I did not realize I could network with other teachers who were doing the Grow Lab at the same time”, “Just our school staff” and “We met at Grade Level Meetings.” In regards to ability to integrate project into multiple areas, a participant positively stated, “We did a great job with this.”

Quality and usefulness of materials were rated at a nearly “High” score. Potential for student gains in knowledge and growth of inquiry skills also demonstrated rather high rankings near the top “High” rating.

## **UPSIDE Ohio Teacher Workshop (GrowLab): Teacher Feedback Survey (Open ended Variables 11 13)**

A summary of written statements, with several examples of each follows. All positive statements will not be shared; all negatives will be included for use for future improvement of project.

### **11. What part of the UPSIDE project worked best in your classroom?**

- The children loved the hands on activities and the songs. Mr. Carmichael works wonderfully with the children.
- The students loved having the Grow Lab in our room. They took pride in sharing with any visitor what they were learning.
- Lessons were very well laid out, very hands on & students were engaged throughout. They looked forward to Mr. Carmichael's lessons.
- All the hands on activities were great. The stations worked well with 2<sup>nd</sup> graders. Whole group introduction, then break. Smaller groups were successful in getting students involved & learning.
- Everything there is not one thing I would change.

### **12. What part of the UPSIDE Project did not go so well in your classroom?**

- The kids did not get to water & care for their plants. Our custodian did it since the plants were kept in the library.
- Everything went well.
- Some of the experiments failed (Root Loops).
- 1<sup>st</sup> lesson, sorting cards activity.
- We didn't have enough time to complete activities. I was doing upside Ohio along with our science kit environments. They complimented each other, but things got a little too busy trying to complete all activities.
- The journal (recording the plant progress & observations) were difficult with which to keep up. It was too much writing for 2<sup>nd</sup> graders. Perhaps a K 2; 3 5 version would work out better.
- We were departmentalized which put time constraints on the lessons, especially when Mr. Carmichael was teaching.
- Some lessons were rushed.
- Handouts that went along with the lessons were difficult to 2<sup>nd</sup> graders to read/work on their own.
- Nothing.
- The root loops they spoiled & I could not seem to get new ones to sprout! My fungus did not do well either. I wanted it to rot and it didn't.
- Small group activities some didn't keep students attention. Teacher couldn't be at all centers.
- Students loved planting & doing things but aren't always listening. Would be better if we have a science lab instead of lessons in hall.

- Meeting every other week & the teachers having to fill in.
- Nothing, I just wish he could have been here for every class & not just some of them.
- None wish it could be longer.
- We had a space limitation in our building which made it inconvenient for Mr. Carmichael. However, it did not inhibit the quality of his instruction.
- It would have been great to have the presentations in a separate room ours were in the hall.
- Spring Break plant deaths due to not getting enough care even though we tried to accommodate this.
- I would have liked to have been better prepared for Paul's visits. Sometimes it was difficult to get all the activities done.

**13. What suggestions do you have for the UPSIDE programmed to improve?**

- None great program!
- More direction as to what students should include in plant journal. Maybe changing the assessment to be more specific.
- For 4<sup>th</sup> grade maybe could use more activities or Ohio plants. Also pictures with names of Ohio plants.
- I loved the idea of every week visit, but I understand the time restraint.
- In order for the students to get the full benefit of the lessons taught by Mr. Carmichael, teachers need to make
- Adjustments in length of class time for those days.
- Make handouts more grade appropriate for each grade the program is used with. (Match reading level better & size of
- Print)
- Keep the program going. It would be wonderful to have a grow lab all year!
- Great program!
- I would use it at just one grade level so that the students do not grow tired of it because they have done it in a previous grade. The excitement is great if it is something they haven't done before.
- All lessons done by Grow lab person. Videos to go with program.
- Have all 12 weeks taught by Mr. C if possible.
- Keep to a weekly schedule.
- Get more Prof. Culpeppers if possible.
- Each class to have their own grow lab if possible.
- Please continue. This is a very worth while project.
- Keep the program in the schools. I work with very difficult students; the plant program finally reached several students that all other attempts failed.
- Clone Paul Carmichael & keep this program going!

## **Sustainability**

The UPSIDE Ohio Project is currently being utilized in Stark County school districts, beyond funding of the OEEP Grant. More than nine thousand copies of Native Ohio Plant Booklets have been printed and are being distributed at no cost.

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## **Data Analysis**

### **Teacher Workshops:**

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Table 2 reports UPSIDE Project participation beyond funding Cycle, suggesting success and positive sustainability. This may suggest a “need” and “want” for further educational programming efforts of this type.

**Table 2**  
**Participant Summary of UPSIDE Ohio Grow Lab Sites Beyond OEEF Grant Dollars**  
**Demonstrates Sustainability**

| Semester         | Districts | Schools | Teachers | Classes | K | 1 | 2  | 3 | 4  | Gr 6 12 | Students |
|------------------|-----------|---------|----------|---------|---|---|----|---|----|---------|----------|
| Fall 2007        | 4         | 9       | 21       | 26      | 0 | 0 | 7  | 0 | 19 | 0       | 675      |
| Spring 2008      | 6         | 8       | 18       | 29      | 0 | 0 | 15 | 0 | 40 | 0       | 785      |
| <b>Sub Total</b> | 10        | 17      | 39       | 55      | 0 | 0 | 15 | 0 | 40 | 0       | 1460     |

Table 3 represents the total participation of the UPSIDE Project through funding cycle and beyond as of Spring 2008.

**Table 3**  
**Overall Participant Summary of UPSIDE Ohio Grow Lab Sites**

| Fall 2005<br>Spring 2008 | Districts | Schools | Teachers | Classes | K | 1 | 2  | 3 | 4   | Gr 6<br>12 | Student<br>s |
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| <b>Total</b>             | 41        | 77      | 181      | 235     | 5 | 4 | 64 | 6 | 153 | 3          | 5824         |

A pre post activity test was administered by teachers to students and returned to Program Director for summary. The pre/post instrument was designed by evaluator to measure knowledge of history of Native Ohio Plants, ability to select Native Ohio Plants and knowledge of basic plant parts. Volunteers tabulated the pre and post figures of random elementary classrooms from across Stark County. Due to the large number of classrooms, students, limited staff and volunteers, twenty classroom results were submitted for review. Please refer to following Table 4 and Table 5 for findings of suggested knowledge gained, in part due, to participation in the UPSIDE Program.

**Table 4 Students Demonstrating Knowledge Gained**  
**Second Grade Students/ Pre Post Test**

| Grade              | Number of Students In Classroom | Number Demonstrated Knowledge Gained |
|--------------------|---------------------------------|--------------------------------------|
| 1. 2nd             | 21                              | 21                                   |
| 2. 2nd             | 17                              | 13                                   |
| 3. 2nd             | 20                              | 18                                   |
| 4. 2nd             | 21                              | 16                                   |
| 5. 2nd             | 19                              | 19                                   |
| 6. 2nd             | 18                              | 15                                   |
| 7. 2 <sup>nd</sup> | 17                              | 13                                   |
| Totals             | 133                             | 115                                  |

Eighty six percent (86%) of second grade students, from random classrooms, exhibited an increase of knowledge gained.

**Table 5 Students Demonstrating Knowledge Gained  
Fourth Grade Students/ Pre Post Test**

| Grade   | Number of Students<br>In Classroom | Number Demonstrated<br>Knowledge Gained |
|---------|------------------------------------|---|
| 1. 4th  | 43                                 | 42                                      |
| 2. 4th  | 42                                 | 36                                      |
| 3. 4th  | 15                                 | 12                                      |
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| Total   | 384                                | 289                                     |

Seventy five percent (75%) of fourth grade students, from random classrooms, exhibited an increase of knowledge gained. No demographic information was collected; therefore no comparisons can be suggested.

**UPSIDE Project Teacher Post Program Feedback:**

At the end of each program session, teachers were asked to complete an anonymous, one page evaluation to be returned to the facilitator. The evaluation instrument was designed and utilized by the SAMM Program at RG Drage Educational Center for similar teaching trainings. This instrument attempted to measure participants' perceptions regarding the usefulness of the UPSIDE Program and materials, how new knowledge may be utilized and collection of suggestions to improve future UPSIDE programs. Twenty five surveys were returned.

This post activity evaluation has limitations. The data were collected utilizing a post project measurement questionnaire that focused on students' participation, increase of knowledge and UPSIDE/GowLab materials. Evaluations may be hastily completed, participants may be exhausted from their classroom responsibilities and the rush to return home is present. Nevertheless, the post activity survey is an effective, inexpensive method of gathering feedback and participant recommendations to improve future programs. Descriptive statistics such as percentages and means were used to summarize data. Responses to open ended questions were entered into the Microsoft Office Word 2003 program and analyzed using qualitative techniques. No demographic data were collected; therefore, no comparisons or assumptions can be made.

Please refer to Table 6 for summation of UPSIDE Ohio Teacher (GrowLab): Teacher Feedback Survey findings.

**Table 6**

**UPSIDE Ohio Teacher (GrowLab): Teacher Feedback Survey  
(Variables 1 10)**

| <b>N= 25</b> | <b>Variables</b>   | <b>Mean</b> |  |  |
|--------------|--|-------------|--|--|
|              | <b>1. Quality of Workshop</b>  | <b>4.7</b>  |  |  |
|              | <b>2. Ability to Network with colleagues</b>                         | <b>4.1</b>  |  |  |
|              | <b>3. Ability to integrate project into multiple areas</b>           | <b>4.2</b>  |  |  |
|              | <b>4. Quality &amp; usefulness of classroom visits</b>               | <b>4.9</b>  |  |  |
|              | <b>5. Quality &amp; usefulness of GrowLab curriculum, activities</b> | <b>4.8</b>  |  |  |
|              | <b>6. Quality &amp; usefulness of GrowLab equipment/supplies</b>     | <b>4.6</b>  |  |  |
|              | <b>7. Level of student excitement about activities</b>               | <b>4.6</b>  |  |  |
|              | <b>8. Gains in student content knowledge about plant science</b>     | <b>4.5</b>  |  |  |
|              | <b>9. Gains in student content knowledge about Ohio plants</b>       | <b>4.5</b>  |  |  |
|              | <b>10. Growth of student inquiry skills</b>                          | <b>4.6</b>  |  |  |

**Scale: 1 Low, 2, 3, 4, 5 High; N/A (Not Applicable)**

Assuming that a ranking of “3” is average, then the impact of the project upon participants and quality of materials ranked above average in all areas. Findings shown in Table 1 demonstrate that teachers perceived the content of materials to be rated “High”. The two lowest scored statements, yet above the average mark of 3, “2. Ability to Network with colleagues and 3. Ability to integrate project into multiple areas” received several suggestions to improve, while still receiving a rating of above “4”. Regarding ability to network, participants stated, “Within our building yes”, “I did not realize I could network with other teachers who were doing the Grow Lab at the same time”, “Just our school staff” and “We met at Grade Level Meetings.” In regards to ability to integrate project into multiple areas, a participant positively stated, “We did a great job with this.”

Quality and usefulness of materials were rated at a nearly “High” score. Potential for student gains in knowledge and growth of inquiry skills also demonstrated rather high rankings near the top “High” rating.

## **UPSIDE Ohio Teacher Workshop (GrowLab): Teacher Feedback Survey (Open ended Variables 11 13)**

A summary of written statements, with several examples of each follows. All positive statements will not be shared; all negatives will be included for use for future improvement of project.

### **11. What part of the UPSIDE project worked best in your classroom?**

- The children loved the hands on activities and the songs. Mr. Carmichael works wonderfully with the children.
- The students loved having the Grow Lab in our room. They took pride in sharing with any visitor what they were learning.
- Lessons were very well laid out, very hands on & students were engaged throughout. They looked forward to Mr. Carmichael's lessons.
- All the hands on activities were great. The stations worked well with 2<sup>nd</sup> graders. Whole group introduction, then break. Smaller groups were successful in getting students involved & learning.
- Everything there is not one thing I would change.

### **12. What part of the UPSIDE Project did not go so well in your classroom?**

- The kids did not get to water & care for their plants. Our custodian did it since the plants were kept in the library.
- Everything went well.
- Some of the experiments failed (Root Loops).
- 1<sup>st</sup> lesson, sorting cards activity.
- We didn't have enough time to complete activities. I was doing upside Ohio along with our science kit environments. They complimented each other, but things got a little too busy trying to complete all activities.
- The journal (recording the plant progress & observations) were difficult with which to keep up. It was too much writing for 2<sup>nd</sup> graders. Perhaps a K 2; 3 5 version would work out better.
- We were departmentalized which put time constraints on the lessons, especially when Mr. Carmichael was teaching.
- Some lessons were rushed.
- Handouts that went along with the lessons were difficult to 2<sup>nd</sup> graders to read/work on their own.
- Nothing.
- The root loops they spoiled & I could not seem to get new ones to sprout! My fungus did not do well either. I wanted it to rot and it didn't.
- Small group activities some didn't keep students attention. Teacher couldn't be at all centers.
- Students loved planting & doing things but aren't always listening. Would be better if we have a science lab instead of lessons in hall.

- Meeting every other week & the teachers having to fill in.
- Nothing, I just wish he could have been here for every class & not just some of them.
- None wish it could be longer.
- We had a space limitation in our building which made it inconvenient for Mr. Carmichael. However, it did not inhibit the quality of his instruction.
- It would have been great to have the presentations in a separate room ours were in the hall.
- Spring Break plant deaths due to not getting enough care even though we tried to accommodate this.
- I would have liked to have been better prepared for Paul's visits. Sometimes it was difficult to get all the activities done.

**13. What suggestions do you have for the UPSIDE programmed to improve?**

- None great program!
- More direction as to what students should include in plant journal. Maybe changing the assessment to be more specific.
- For 4<sup>th</sup> grade maybe could use more activities or Ohio plants. Also pictures with names of Ohio plants.
- I loved the idea of every week visit, but I understand the time restraint.
- In order for the students to get the full benefit of the lessons taught by Mr. Carmichael, teachers need to make
- Adjustments in length of class time for those days.
- Make handouts more grade appropriate for each grade the program is used with. (Match reading level better & size of
- Print)
- Keep the program going. It would be wonderful to have a grow lab all year!
- Great program!
- I would use it at just one grade level so that the students do not grow tired of it because they have done it in a previous grade. The excitement is great if it is something they haven't done before.
- All lessons done by Grow lab person. Videos to go with program.
- Have all 12 weeks taught by Mr. C if possible.
- Keep to a weekly schedule.
- Get more Prof. Culpeppers if possible.
- Each class to have their own grow lab if possible.
- Please continue. This is a very worth while project.
- Keep the program in the schools. I work with very difficult students; the plant program finally reached several students that all other attempts failed.
- Clone Paul Carmichael & keep this program going!

## **Sustainability**

The UPSIDE Ohio Project is currently being utilized in Stark County school districts, beyond funding of the OEEP Grant. More than nine thousand copies of Native Ohio Plant Booklets have been printed and are being distributed at no cost.