

The Nature Museum at Grafton

Nature Journaling and Nature Writing Teacher Training Institutes

2011 Survey Data Summary

and

TNM Evaluation Toolkit Matrix

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Introduction

Since the summer of 2006, the Nature Museum at Grafton (TNM) has been offering three day intensive courses in Nature Writing and Nature Journaling. In 2006-07, TNM worked with PEER Associates to develop and analyze a survey which teachers complete on the last day of their course. TNM has continued to use that evaluation method, and, in December 2008 and February 2010, asked past participants to answer follow up questions about their future interest in programming options,

According to its mission, the Nature Museum is *"a regional resource for nature, science, and environmental education in the Vermont and New Hampshire communities of the Connecticut River Valley. The Museum provides information and experiences which engage and enlighten its audiences and inspire stewardship of the natural world."*

experiences with the institutes, and their implementation of course content in their own classrooms. In late 2010, TNM contacted PEER Associates again to assist with formalizing the participant follow up survey strategy, and to examine their suite of program evaluation activities for these courses.

Together, PEER and TNM outlined the overarching evaluation questions that would frame this process and identified the uses and stakeholders in this process. Please see Appendix C. A survey and administration strategy were developed by PEER Associates in collaboration with TNM staff members, and the survey was posted on SurveyMonkey.com where it is housed for TNM's future use, revision, and analysis. In January 2011, TNM sent an email invitation to 73 course participants (87% of the 84 total participants), hailing from all years of the two courses. The mailing list was comprised of all of the known email addresses TNM possesses. 42 surveys were completed, representing a 58% response rate (representing exactly 50% of the total population of course participants). Two follow up email reminders were sent one and two weeks after the initial invitation.

This report provides a summary of the data gathered in the January 2011 survey in order to help TNM staff further understand program impacts and inform decisions about future course formats, content, and marketing strategies. TNM staff also intended that the process and findings from this evaluation would contribute to the broader field

of professional development providers working on similar endeavors. The report should not be considered an exhaustive analysis of all the data, but rather a tool to engage dialogue among program staff, and between program staff and the evaluation team. During this process, the evaluator and TNM staff also discussed deepening their ongoing evaluation strategies. The resulting matrix of evaluation tools is found in Appendix A.

Please note: For many questions, respondents had the option to skip questions that were not relevant to them. And, in many cases, respondents were able to choose more than one option. For these reasons, response totals are not always consistent with the total number of respondents, and do not necessarily add to 100%. The report purposefully includes blank spaces in a number of places in order to keep tables from lapping pages.

Survey Analysis

Survey items are presented individually or in groups, as appropriate. In some cases, we advise the user to review elements of the raw data for best insight into the responses.

Demographics

Four questions were asked of respondents to determine their participation in TNM Writing courses and their professions.

- 74% (n=31) of respondents hailed from the Nature Journals Across the Curriculum Course.
- 48% (n=20) of respondents hailed from the Nature Writing in the Classroom Course. Note that some participants took both courses, and a few took a single course more than one time.

As seen in the table below, the number of respondents increased with more recent participation dates. This is, at least in part, attributable to having lost contact with some participants from the further past. It should be noted, however, that in the summer of 2006, only one of the institutes was offered while the other years had one session of each institute.

Please indicate which year(s) you participated: (check all that apply)		
Answer Options	Response Percent	Response Count
Summer 2006	11.9%	5
Summer 2007	14.3%	6
Summer 2008	23.8%	10
Summer 2009	31.0%	13
Summer 2010	40.5%	17

The following two tables offer a specific breakdown of respondents' professional roles.

With what age group(s) are you most likely to use nature writing/journaling? (check all that apply)		
Answer Options	Response Percent	Response Count
Elementary school students	71%	30
Middle school students	31%	13
High school students	7%	3

What is your role as an educator? (please choose ONE that best describes your job)		
Answer Options	Response Percent	Response Count
Classroom teacher	45%	19
Science teacher	12%	5
Special educator	10%	4
English teacher	7%	3
Literacy specialist	7%	3
Library/media specialist	7%	3
None of the above	7%	3
Homeschool teacher/parent	2%	1
Non formal educator (e.g. work in environmental education center)	2%	1
Afterschool educator	0%	0
Art teacher	0%	0

Teacher Practice Change

Respondents were asked several questions about the ways in which they had made use of the course concepts and how their professional and personal practice may have changed as a result of their TNM course participation.

Question 5 asked respondents to compare the frequency with which they did various institute-related activities with students now compared to what they had done before they attended the course(s). In all categories offered, teachers reported a clear change in their instructional practices since their TNM course(s).

- 78% of teachers indicated that they lead drawing and sketching activities with students slightly or far more frequently than they did prior to participating in a TNM institute.
- 73% of teachers indicated that they engage students in science and nature observation slightly or far more often since their TNM course.
- 68% indicated taking students outside into the school yard for writing activities slightly or far more often since their course.
- 68% indicated leading nature poetry writing with students slightly or far more often since TNM.

In the first three cases bulleted above, more people reported doing the activities *far* more often, and in the latter category, equal numbers of teachers reported doing the activity *far* and *slightly* more often since the TNM course.

Since this question is a self report and does not ask teachers to specify whether their change in practice was *because* of their TNM course, it does not indicate causality. However, the clear trend in the data was that, following a TNM course, teachers changed their practice in *all* of the categories indicated.

It is worth noting that the categories in which the greatest number of teachers indicated that they operated at “about the same frequency as before TNM” included: taking students outside to someplace other than the school yard for writing activities (33%), leading nature poetry reading with my students (29%), and leading nature journaling about specific habitats (27%). The reader will note, however, that even in these categories where we see the least self-reported change, the majority of teachers did indicate doing those three activities with more frequency than before.

Another way to look at the relative magnitude of different program outcomes is to rank the items by their response averages, as shown in the table below. An average *above* 2 means that, on the whole, a change in teacher practice is taking place.

<p>Compared to what you did BEFORE taking the Nature Museum’s (TNM) nature journaling/nature writing course, about how often do you do the following things NOW?</p> <p><small>(scale: 1=less frequently since TNM; 2=about the same frequency as before TNM; 3=slightly more often since TNM; 4=far more often since TNM)</small></p>	<p>Rating Average</p>
I lead drawing and sketching activities with my students...	3.7
I lead nature poetry writing with my students...	3.1
I engage students in science and nature observation (indoors or outdoors)...	3.1
I take students outside to the school yard for writing activities...	3.1
I lead nature journaling about specific habitats...	3.0
I engage in nature journaling for personal purposes...	3.0
I lead nature poetry reading with my students...	2.9
I take students outside to someplace other than the school yard for writing activities...	2.7

When asked if participation in their TNM teacher training institute had had “a positive, lasting influence” on respondents’ use of nature journaling or nature writing with students, all respondents but one agreed. 88% of those said “Yes, definitely,” while 10% said “Somewhat, but not a lot.” Here and elsewhere in the survey, respondents described barriers to increased use of the pedagogies promoted by TNM’s courses.

Impediments to the lasting influence of the courses included the following:

- five individuals indicated recent job switches or existing job parameters such as working with a population with which they found it more challenging to adapt the material (e.g. working with visually impaired students, moving from elementary to Junior High, acting as a paraprofessional without the “authority” to implement classroom practices). One person summarized their own challenge with making TNM-related changes: “I teach math in a departmentalized situation. It has been very difficult to integrate nature writing into my curriculum. If I was self-contained, I would be using these activities and resources on a continual basis.”
- two people mentioned time barriers (and many echoed this often heard lament later in the survey); and
- two respondents noted having “always” taught the institute’s themes (nature, writing, science, outdoors) with students so while the course may have deepened or varied what they do, it did not greatly increase the frequency.

Linking Outcomes to Process

Those who responded “Yes, definitely” or “Somewhat, but not a lot” were then asked, “Which THREE aspects of your nature writing/nature journaling course(s) were the most meaningful/influential aspects?”

Which THREE aspects of your nature writing/nature journaling course(s) were the most meaningful/influential aspects?		
Answer Options	Percent of Respondents Choosing this Option	Response Count
Experiencing specific activities to do with my students	71%	29
Time and space for personal/professional reflection during the course	56%	24
The quality of instruction	56%	23
Experiencing the outdoors as a learning environment	32%	13
Learning new skills	32%	13
Connecting with a new network of colleagues	12%	5
Having time during the course to work on lesson plans	12%	5
Follow up contact with Nature Museum staff	12%	5
Completing additional assignments for graduate credit	10%	4
Learning new content/subject areas	5%	2

Since respondents were forced to select only their top three, the response offers a prioritization of course aspects that were deemed most meaningful. Three top tier “ingredients” stood out: TNM’s way of modeling activities in an experiential, hands-on way; making time and space for participants to reflect personally and professionally during the course; and providing high quality instructors. There was not a particularly strong showing for networking with colleagues, having planning time during the

course, and follow up contact with TNM staff. It is not clear, however, whether the follow up contact was not used, or was used but not viewed as an essential, top three ingredients for change. The additional assignments for graduate credit did not stand out as providing a large source of added value, though it should be noted that only a portion of respondents completed that item on the list.

One respondent cited the following three specific areas of instruction as particularly “effectively taught”: “outdoor classroom management techniques, pace of and variety in activities taught in Outdoor Classroom session, and material organization for outdoor use.”

“I loved the setting, the ability to be outdoors and [the instructor] did an amazing job of making it fun...which is exactly what I hope to do for my students. It was by far one of the best institutes I have attended in all my years of teaching science. Thank you!”

*--Nature Journals 2010 institute participant,
middle school teacher*

Only one respondent, a middle school instructor, had answered “No” to the question of whether the course had a lasting impact. That individual explained that the institute had been a positive experience, but that s/he had taken the course to support her school team and does not use journaling in class.

Spread of Effect

Many teachers reported sharing what they learned during their TNM course with other adults, indicating that TNM courses may impact teachers beyond those who participate directly:

- 98% of respondents had talked to colleagues about their experience
- 53% had noticed other teachers in their school doing journaling or nature writing with their students
- 48% reported having had teachers approach them for materials or information related to nature writing or journaling
- 38% reported having trained other adults in nature writing or journaling
- 38% reported presenting their TNM related work at a staff meeting or conference.

Co-teaching nature journaling/ writing with colleagues was not highly ranked, though one respondent offered a concrete example of collaborating with the school art teacher to focus students on nature observation. Additional comments revealed other types of spread that were happening. One teacher conducted “staff development presentations,” another reported doing “professional networking and staff presentations on field investigations,” and a third reported having “encouraged others to do work under other grants, involving nature journaling and writing!” The following table shows the full response set.

Teacher Perceptions of Student Outcomes

TNM was interested in quantifying the number of students who have been affected by participants' enrollment in TNM writing/journaling courses. While it is difficult to measure this with precision, respondents were asked to "...estimate the number of students with whom you have shared nature journaling and/or nature writing techniques THIS year?"

Responses ranged from 0-400 students, underscoring the fact that teachers return from the course to many different settings and many different uses, from homeschooling, to one class within a small schools, to multiple classes within a large school. The average number of students per respondent was 42. It is unclear whether TNM could use this average to estimate the number of students reached annually by course participants, but by including a question of this nature in an annual survey, TNM could test this assumption for future estimation.

When asked their perceptions of student outcomes in the realms of writing, drawing, natural science, and connection to place, respondents were notably enthusiastic. Agreement was extremely high in all categories in which respondents were asked to think about the impact of their TNM related teaching on their students. 89%, for instance, felt that their students' observation skills (e.g., using their senses, noticing details) had grown "as a result of the nature journaling/writing experiences". 88% indicated that their students developed a stronger sense of connection to the environment around them for this reason. 81% indicated that their students' interest in science and nature had increased, and 80% saw an increase in their students' "enjoyment of and/or confidence in writing."

The table below shows the average ratings for each of these items. As with the scale above, any rating over 2.5 demonstrates agreement and given that every response is above 3.0, teachers reported a high level of confidence in the impact of nature journaling and writing experiences on their students.

(See next page.)

Please think about the students to whom you have taught nature journaling or nature writing since your Nature Museum course as you rate your level of agreement with the following statements. "I believe that as a result of nature journaling/writing experiences...

(Scale: 1=Strongly disagree; 2=Tend to disagree; 3=Tend to agree; 4=Strongly agree)

Answer Options	Rating Average
...my students' observation skills (for instance, using their senses, noticing details) have grown."	3.7
...my students developed a stronger sense of connection to the environment around them."	3.6
...I have seen an increase in my students' enjoyment of drawing."	3.6
...my students' interest in science and nature has increased."	3.6
...my students are more creative in their writing."	3.5
...I have seen an increase in my students' technical abilities in drawing."	3.5
...I have seen an increase in my students' enjoyment of and/or confidence in writing."	3.4
...I have seen an increase in my students' technical abilities in writing."	3.1

There were no "Strongly disagree" responses for any of these questions. The only items in which there was more than one individual who reported "tend to disagree" (n=2) were for the two items asking about students' *technical* abilities in drawing and *technical* abilities in writing. In general teachers seemed to be more confident in the science outcomes than the writing outcomes.

One teacher, in a later open-ended question about nature journaling/writing, commented, "I love it when a student says to me, 'I guess I *can* write,' or 'I guess I can draw better than I thought.'" Another highlighted the impact of nature writing on her students this way,

We are currently using a field notebook for both formal and creative writings. The students are now understanding that science is also about discovery and not just cookie cutter labs. They seem more engaged and much more free-thinking than they used to be. Thank you for assisting me in these efforts!

Program Development and Marketing

The final section of this survey asked respondents to reflect on ways in which they might change the TNM nature journaling/writing courses, and to provide suggestions for reaching out to alumni and new participants in the future. Question 12 asked what aspects of the course's structure, content, or reputation motivated participants to register:

Question 12: What attracted you to take a Nature Museum nature writing/nature journaling course in the first place? (please choose your top THREE influences)

Answer Options	Response Percent	Response Count
Location/Setting	59.5%	25
Reputation of instructors	35.7%	15
Connections with learning standards	33.3%	14
Availability of the Wellborn Upper Valley discount	33.3%	14
Receiving graduate credit	31.0%	13
Recommendation of a colleague/friend	28.6%	12
Marketing materials (e.g. program fliers, newsletters, online contact)	26.2%	11
Reputation of the Nature Museum	19.0%	8
Fulfilling Professional Development requirements	14.3%	6

Question 13 asked participants to share specific contacts to help TNM advertise these courses to a wider audience. Please see the raw data in Appendix B for this information.

Participants were asked whether they had visited the Nature Journaling Blog on TNM’s website. 19 had visited the site, 23 had not.

Those who responded that they had visited the Nature Journaling Blog were asked the open ended question, “What did you like best about the Nature Journaling Blog and/or what would you improve?” Respondents liked the Blog’s: accessibility, activities to try with students, motivation to engage in new practices, links to other nature writing sites, doing some of the personal prompts provided, the photos, resources, and fresh ideas. Two quotes captured the spirit of many of the comments:

“I like the blog mostly because it provides ongoing inspiration to continue with the work, to review the materials I have, and to rethink my work with nature journaling.”

“What I like about the Nature Journal Blog is that it keeps me thinking about journaling with my students and how to connect them with the outdoors. My only wish is that it would be posted more frequently.”

Those who had responded that they had never visited the TNM Blog were asked the open-ended question, “Is there any particular reason that you have not visited the Nature Journaling Blog?” 21 people offered comments. 11 indicated a lack of time, 6 indicated that they had forgotten about this option, and 2 reported not knowing about it. Many of these respondents expressed interest in it despite never having visited the Blog. One respondent who had visited the TNM Blog made this comment: “I am also looking for new activities, lessons, or ideas to share with my students in either drawing or writing in order for them to feel encouraged and successful.”

Question 17 asked participants to specify the kinds of interactions they might like to have with the Museum in the future. The following table summarizes participants’ interests and could be useful in prioritizing future programming:

Question 17. What kinds of future contact with the Nature Museum would be most appealing to you, if anything? (please choose up to THREE)

Answer Options	Response Percent	Response Count
Attending multi-day (overnight) workshops	59.5%	25
Attending one-day alumni workshops	57.1%	24
Reading Nature Museum nature journaling blog	45.2%	19
Team teaching with Nature Museum staff	16.7%	7
Ongoing, in-class coaching from Nature Museum staff	16.7%	7
Nature Museum staff assistance on a field trip	16.7%	7
Participating in an online networking forum	9.5%	4
I am not likely to seek ongoing contact with TNM	7.1%	3

It is notable that people overwhelming would like to engage in more coursework, and that interaction with the TNM Blog was also highly ranked.

Questions 18 and 19 prompted participants to give open-ended feedback about the courses.

19 people responded to Question 18 which was phrased, “In retrospect, what could we have done differently during the course you took that would have better prepared you for teaching nature writing/journaling?” 16 expressed unequivocal satisfaction and gratitude, noting that the course(s) had met their expectations, was “awesome,” “excellent,” and well-organized. Typical comments included:

“It was the first time that I went away for a course and wasn’t ready to leave at the end.”

“You are amazing at what you do. I was completely inspired and continue to use the techniques to this day in my classroom.”

“The workshops were terrific. The agenda was clear. Expectations were met. Instructors were informative, open, shared many ideas, etc. Overall, great job (and good food and locations).”

Five people offered constructive suggestions. One person requested more teaching on the technical aspects of drawing, and another suggested that an open critique of participants’ past journaling efforts using actual student examples might help them to hone past practices and develop new strategies for deepening their approaches. Another participant thought that modeling or team teaching right in the classroom would help solidify on the ground what had been learned during the summer course, saying,

Now that school has begun, a visit in a classroom using nature journaling would be informative, and I was happy to see the blog was up, so I could get new ideas and feedback now that I have started and can see real problems/questions/successes as they unfold.

Still another requested ongoing contact:

Occasional email reminders would be neat. For example, each season you could send out an email that would remind folks of an activity we did--or introduce a simple new activity appropriate to the new season. For me, those reminders can get me back into the groove.

This particular request could be met with a seasonal email reminding folks to check TNM's Nature Journaling Blog.

Question 19 asked, "Is there anything else you'd like to share? We really value your personal reflections, constructive criticism, and questions." 26 people answered this question, many commenting on the quality of instruction. Their accolades included the instructor's ability to listen well, to tailor the program to different people's needs, to be engaging, knowledgeable, personable, prepared, and to bring positive energy. Others remarked appreciatively about the setting, the meals, and the accommodations. People appreciated the retreat-like aspect of the courses which allowed "teachers to interact at professional and personal levels," and individuals to find time for personal reflection. Amidst the abundance of positive feedback, the following four quotes seemed to capture the essence of respondents' remarks:

Both workshops were professionally and personally helpful and inspiring. Having the opportunity to learn new things, experience the activities as students might, having time to reflect on those experiences and to plan for future activities with my students during the weekend were especially helpful. As were the resources, networking, knowledge and enthusiasm of the workshop leaders and colleagues.

I was so inspired by the course. I've tried a lot of new activities and have been motivated to take students out to do more art-related tasks.

These two workshops have influenced my teaching more than any course/seminar I have taken in years. I hope there is another one I could sign up for soon. I would like to see one that is more content-based...i.e. botany, soil-science.

The time I spent in Grafton helped center me as a teacher. [The instructor] is a treasure, someone who can really listen to each participant and tailor the experience to the individual. I felt empowered after our time together, and still feel the desire to make nature journaling the '4th grade thing' at my school! Hopefully, I can inspire others to do the same.

Demographic Trends in the Data

Evaluators conducted a cursory review of the key data in cross tabulation¹ with two key participant descriptors: TNM course and grade level. The key data reported here include: participant reports of changes to their own teaching practice; reports of participants sharing their learnings with other adults, and reports of changes in their students.

Cross Tab: TNM Course

Survey responses for the Nature Writing participants were very similar to the responses of Nature Journaling participants. While no tests for statistical significance² were conducted, the following trends in the data suggest potential differences between the groups:

- Nature Journaling participants indicated a greater change in practice than Nature Writing participants with respect to taking students outside in the school yard for writing activities.
- Nature Journaling participants indicated doing more journaling with students about specific habitats than Nature Writing participants.
- Nature Journaling participants were more likely than Nature Writing participants to share their course work with colleagues at a staff meeting or conference. (41% of Nature Journaling participants reported doing this vs. 25% of Nature Writing participants.)
- Nature Journaling participants also reported a higher rate of training other adults in the course subject matter (45% vs. 30% of Nature Writing participants).
- Nature Writing participants indicated that they had observed their students being “more creative in their writing”. On this measure, Nature Journaling participants expressed a good deal less certainty about their observations, with 26% choosing NA/Not Sure compared to 5% of Nature Writing participants who selected NA/Not Sure.
- Nature Writing participants were more likely to report an increase in students’ “technical abilities in drawing”. Again, Nature Journaling participants were less sure with 23% marking NA/Not Sure, while 11% of Nature Writing participants chose this category.
- More Nature Writing respondents indicated the availability of WEF discount as a key factor in their decision to attend the course.
- When asked about future offerings, results were very similar across all categories with the exception that more Nature Writing participants indicated an interest in attending a future one-day alumni workshop. 75% of Nature Writing participants expressed interest vs. 51% of Nature Journaling participants.

¹ Cross tabs show a side by side comparison of two or more survey questions to determine how they are interrelated.

² If a difference is statistically significant it means that it is unlikely to have occurred by chance, i.e. there is a real difference.

Cross Tab: Grade Level Taught

Analyzing the results broken down by which general grade level TNM participants teach—elementary, middle, or high—similarly revealed few remarkable differences in the groups. The following observations should be considered bearing in mind that only 3 of the 42 survey responses came from high school level educators:

- An increase in the following three teaching practices was more common for teachers at the elementary and middle school levels than for high school: leading nature poetry reading; leading drawing and sketching activities; and taking students outside someplace other than the school yard for writing.
- Teachers at the middle and high school levels reported more of an increase in personal journaling practices than elementary level educators.
- The biggest noteworthy difference in the Spread of Effect questions was that a greater number of elementary teachers reported having presented their nature writing/journaling work at a staff meeting or conference. (None of the three high school respondents indicated having done this.)

Due to the small sample size it is not possible to determine the statistical significance of even pronounced differences between groups. In this case, we have reported on those questions where the differences between groups were of sufficient magnitude to suggest possible trends. No reportable variation with respect to grade level existed for questions not mentioned above.

That being said, the evaluators provided TNM staff with full data reports of these two particular cross tabs for further review, and suggested that, if the interest arises, the staff might conduct other cross tabs within the raw data hosted on their own Survey Monkey account. Trends apparent in the cross tabs may suggest areas for more in depth inquiry in future evaluation, as well as provide insight into program development in the near term.

Conclusions

This survey's findings point to overwhelmingly positive reports about the outcomes of TNM's Nature Journals Across the Curriculum and Nature Writing in the Classroom. The fact that the sample was not a complete census of participants leaves unanswered the question of what type of influence the institutes may have had on *all* participants, but the 58% of participants who did take time to complete the survey offered a plethora of insight into what worked, what is sticking, and how TNM might enhance its program and marketing endeavors.

The following bullets highlight four select findings that emerged from the outcomes portion of the data set:

- In all categories offered, teachers reported a change in their instructional practices since their TNM course(s).

- When asked whether participation in their TNM course has had “a positive, lasting influence” on their use of nature journaling or nature writing with students, all respondents but one agreed.
- Respondents were remarkably positive in their reports about the changes they observed in their students, indicating that not only are teachers changing their practices, but that they are seeing results in their students’ writing, drawing, and connection to nature.
- An impressive number of teachers shared what they learned during their TNM course with other adults, formally and informally, indicating that TNM courses are having an impact on teachers beyond those who participate directly.

“I learned so much about myself; I was amazed. I thought I knew it all. It was so wonderful to take time to write and reflect with colleagues. I totally recommend it to everyone.”
 --Nature Journals institute 2007 participant,
 elementary level teacher

With respect to implementation feedback, respondents provided many examples of the institutes’ strengths and offered constructive comments for helping define, refine, and prioritize program elements as TNM moves forward. Some specific suggestions hailing from these process data are found in the recommendations section of this report.

Recommendations

The recommendations that follow hail directly from survey responses and from the evaluators’ interpretation of the data and surrounding context, and are organized around the primary themes emergent from the survey findings. The latter recommendations resulted from the process of working with TNM to conduct this evaluation and to create an evaluation toolkit matrix that is broader than this particular survey.

Ongoing institute refinement

Continue to emphasize the intensive, experiential nature of the institutes and the personal/professional reflection component, and explore further why participants placed less value on post course follow up endeavors.

Consider how best to extend the institute experience

While survey respondents placed less emphasis on alumni experiences in terms of what they believed had thus far caused changes in teaching practice, respondents strongly indicated that additional coursework opportunities (both one-day and multi-day overnight programs) were appealing. It is worth determining whether to expand, enhance, or hone the current offerings available to alumni of the nature journaling and nature writing institutes. Research on “what works” in program implementation makes clear that ongoing follow up support, including mentoring and coaching, are important for creating lasting impact. (See Appendix D for one example of these broader research findings, and Appendix E for a current Review Promising Practices for Professional Development.) And this sort of coaching and/or a more advanced alumni course could

help participants move deeper into bringing the student writing and drawing outcomes on par with the strong science and nature outcomes that participants reported observing in their students.

Gather more detailed data on student impacts

Devise a case study of students within one or more participants' classes in order to better understand the true impacts of the course on students. For instance, teachers could have students do a nature journaling activity and a more traditional classroom-based writing assignment, then have the students critically reflect on the differences between those two experiences in terms of their engagement, feelings of creativity, perceptions of themselves as writers, etc. By engaging with teachers on their home turf, TNM could provide follow up support while gaining insight into how course principles and skills may or may not filter down into the hands and minds of students. This could be good fodder for future program refinement, as well as documentation of program outcomes.

Plan for a more magnified spread of effect

If a spread of effect to other teachers is a goal of the institutes, collaborate with teachers during and after the institutes on strategies for spreading the resources and information they have acquired. Given that TNM institutes do not directly "train" teachers to collaborate with other non-participants, the degree to which participants are spreading the information to other teachers was impressive. However, to capitalize on this, TNM staff could build into the institutes some explicit discussion of how to collaborate with other teachers, and how to otherwise share their new knowledge, skills and resources.

Facilitate teacher access to the TNM Blog

TNM could offer teachers the option of signing up to receive an email notification when the blog is updated, or perhaps seasonally. The Blog can help to create some degree of community and networking if it inspires an active comments section.

Survey revisions

- It is worth exploring further how to enumerate student participation, if this is felt to be useful information to track. For instance, it may make sense to ask respondents to "estimate the number of students with whom you share nature journaling, *on average, in a normal year* since your TNM course."
- If TNM wishes to track the effects of the course on Wellborn Ecology Fund sponsored participants in contrast to others, consider inserting a question asking respondents a simple Yes/No reply: "Did you receive a WEF Upper Valley discount to help pay for your participation in the TNM institute?"
- In order to delineate more clearly whether participants attribute changes to TNM (as opposed to changes in their job, for instance) change the scale on Question 5 to read:
 - 1=with less frequency or depth as a result of TNM

- 2=unchanged due to participation in TNM
 - 3=slightly more often or in more depth as a result of TNM
 - 4=far more often or in more depth as a result of TNM
- Since it was not simple to secure the 58% response rate for this survey, it is worth discussing whether repeatedly asking past participants for their participation in evaluation endeavors will be successful. It may be worth mapping out an evaluation strategy that includes sampling past participants every few years, with a shorter survey, and conducting this longer follow up survey with just current year participants.
 - Break out the location/setting choice in Question 12 to get a better sense of what aspect of the location/setting is most appealing (i.e. is it the convenient location? The natural beauty?)
 - Given the interest in future courses seen in Question 17, it may be worth probing more specifically to see what would be of most interest to participants.

Ongoing program development and evaluation work

Consider taking time to step back from TNM programming and take stock of how each program factors into the big picture of accomplishing your mission.

- **Map out the path to your mission**
Creating a logic model (a map of your intended path toward change) for each distinct program or program type (e.g. three-day intensive institutes, one-hour evening programs, etc.) will help all stakeholders involved make decisions about which types of programming are the best fit, where to target funding, and how to best focus evaluation efforts.
- **Be systematic and thorough in your data collection**
Develop and refine evaluation instruments outlined in the Toolkit provided in Appendix A. Perhaps the biggest change being suggested there is to develop the practice of ongoing, internal reflection that is systematized.
- **Use the data to inform decision making**
Build in an annual review of program data, to be compared against logic model activities, outputs, and outcomes. This can be done with the support of an external evaluator, or internally. Use this data as the basis for making sound decisions about program continuation, modification, or cessation. These data can also be used to refine your logic model as the program evolves.

Appendix A: Nature Museum Evaluation Toolkit Contents

Part of this year's Evaluation Plan was to "develop brief recommendations" for a TNM Toolkit to be used in ongoing evaluation of TNM educational programs, particularly the Nature Journaling and Nature Writing institutes.

February 15, 2011

Prepared by Amy Powers, PEER Associates, Inc.

Notes:

- The purpose of having an Evaluation Toolkit is to encourage staff to systematically reflect on programs and record observations on a regular, ongoing basis. Program decisions, then, are made based on sound data sources rather than limited to instincts and experience (which are important, of course, but more reliable when considered in conjunction with systematically collected data.) These data are then useful sources when applying for funding, reporting to donors, justifying programs, or making the case for modifying or discontinuing programming.
- All of the tools are noted as "Used by" program staff to monitor the program over time. Further, the tools as a set would be useful to share when doing periodic external program review by an evaluator or another impartial third party.
- Perhaps the most important consideration in undertaking any evaluation effort is its use. It may be worth fleshing out the Used by and Purpose columns here to include specific stakeholders such as board members, principals, specific funders, etc. This would help you assure that you tailor tools and questions within them to the needs of your audiences.
- *Creation of program logic models (maps of the program's theory of change) is recommended in order to best target program evaluation efforts (and therefore tools) and guide program development and implementation.*
- NJ/NW = Nature Journaling, Nature Writing Summer Courses
- Tools may be added or removed over time to reflect program and staff evolution.
- All tools are for use by TNM Program Staff, and by external evaluators as needed/desired.

Tool	Completed by	Purpose	Description	Samples Provided
A. Participant Course Evaluation Form	All NJ/NW course participants	Workshop improvement, program planning, marketing, participant follow up, gathering evidence for applying for funding	*Covers course structure, logistics; participant intentions, feedback, reflections; marketing suggestions *Paper copy administered on site on the last day of the course (Currently using Castleton's Form)	TNM already has this; additional PEER Samples if considering updating....

Tool	Completed by	Purpose	Description	Samples Provided
<p>B. Staff Course Observation and Reflection Form</p>	<p>All staff, interns, assistants present during trainings</p>	<p>Ongoing , systematic record of staff observations re: workshops</p>	<p>*Contains prompts to assist staff in observing, reflecting upon, and documenting program improvement ideas, what’s going well, quotes from teachers as they’re immersed, etc.</p> <p>*Could be housed on Survey Monkey or as an e-or paper copy</p>	<p>MS Word sample provided.</p> <p>See http://www.surveymonkey.com/s.aspx?PREVIEW_MODE=DO_NOT_USE_THIS_LINK_FOR_COLLECTION&sm=j19%2bazbx81HQwkdtlP61fcHOSthQvK6WFxfGrUIZwE%3d for a Survey monkey format example</p>
<p>C. Retrospective Participant Survey (Comprehensive version, First Time Respondent)</p>	<p>All NJ/NW participants who have not completed a retrospective survey yet</p>	<p>*Understanding course outcomes, fundraising for the course, marketing, planning subsequent trainings, tailoring follow up with participants</p> <p>*See PEER/TNM 2011 Eval Plan Questions</p>	<p>*Survey Monkey survey, administered every January. Within this survey participants are asked whether they have completed the survey before. If <u>No</u>, they continue with this Comprehensive/First Time Respondent Questions.</p> <p>*NOTE: Tools C and D are the same survey with a skip logic question leading first time and repeat respondents to different sets of questions.</p>	<p>PEER/TNM created January 2011; PEER provides suggestions for revisions when survey process is complete for 2011.</p>
<p>D. Retrospective Participant Survey (Repeat Respondent)</p>	<p>All NJ/NW participants who have completed a retrospective survey one or more times in the past</p>	<p>*See Purposes in C, above, and...</p> <p>*Understanding program sustainability or staying power, tracking outcomes over time</p>	<p>Survey Monkey survey, administered every January. Within this survey participants are asked whether they have completed the survey before. If <u>Yes</u>, they continue with this Repeat Respondent Questions, an abbreviated version.</p>	<p>PEER provides suggestions for adapting Tool C to use as Tool D in the future.</p>

Tool	Completed by	Purpose	Description	Samples Provided
E. Staff Ongoing Observation Form	TNM Staff	<p>*Record reflections, conversations, quotes, interactions, communications with participants</p> <p>*Understanding course outcomes, fundraising for the course, marketing, planning subsequent trainings, tailoring follow up with participants</p>	<p>*Could be housed on paper, staff computer, or on Survey Monkey survey</p> <p>*Completed by program staff on a predetermined basis—i.e. as needed, first of the month, etc.)</p>	See notes samples for Tool B above.
F. Public Program Participant Survey	All attendees of public programs	<p>*Understanding motivations for attending, intentions to act based on program. Homing in on potential marketing strategies, strategies for planning new or follow up programs.</p>	<p>Brief (i.e. half sheet of colored paper) survey placed on each chair or passed around at the end of a program.</p> <p>Questions may include: basic demographics, something new learned (knowledge acquisition), intention to share this knowledge or to act in some way (behavior change), interest in future programming like this one or different topics (program planning), how you found out about this program (marketing).</p>	Examples provided.

Appendix B: Additional Data

Question 13. Do you have any specific contacts you would like to share to help us to advertise these courses to a wider audience? If so, please provide names and email or postal addresses.

- Linda Wellings at Shelburne Farms lwellings@ShelburneFarms.org
- Colleen Hickey at the ECHO Center CHickey@lcbp.org
- The Good Hope School of the USVI
- Country Day School of the USVI
- Montshire Museum in Norwich may be interested in cooperating in this venture.
- hendryj@sau25.net
- Jim McCracken: jcmcc211@gmail.com
- Sarah Curtis, Asst. Principal, Ray School
- Niki Stanley
4th grade teacher
Rocky Hill School
530 Ives Rd
E. Greenwich, RI 02818.
- Rye Elementary School, Rye, NH
Rye Junior High, Rye, NH
- Emily Wrubel, ewrubel@conval.edu
Upper Valley Waldorf School
Bluff Rd.
Quechee, VT 05059
- I have access to a Wellborn Alumni mailing list, but would need permission to pass it on.

Appendix C: Evaluation Plan

	Evaluation Questions and/or Descriptions	Evaluation Strategy/Activity
1. Participant Survey	<p><i>What outcomes occur as a result of teacher participation in TNM's Nature Writing and Nature Journaling professional development institutes?</i></p> <ul style="list-style-type: none"> • Which lessons and activities are TNM alumni teachers using in their classrooms? In what ways and with what frequency? • To what extent are changes in teaching practice sustained over time? In what ways, if any, do TNM participants continue applying what they learned in the second year following their TNM course and beyond? • Are teachers taking students into the school yard or other outdoor locations more frequently since their participation in the TNM program? In what ways are they using the outdoors? What specific parts of their TMG program influenced this change, if any? • What kind of "spread of effect" might the TNM courses be having beyond the practice of direct participants? Do TNM alumni introduce what they have learned during a TNM course to other teachers in their school? (e.g. are they training other teachers? noticing others journaling? sharing physical resources? co-teaching with others?) 	<p>a) Develop educator survey for current and future use and post to survey monkey. (Use existing TNM surveys as springboard.)</p>
	<p><i>Teacher Perspectives on Student Outcomes</i></p> <ul style="list-style-type: none"> • How many students are experiencing nature journaling because of teachers' participation in TNM courses? • Do teachers believe that their students' writing has been affected as a result of nature journaling? (e.g. their enjoyment of writing? their technical ability? confidence in their writing? creativity in writing?) • Do teachers believe that their students' interest in natural and environmental science and nature is changing as a result of exposure to nature journaling experiences? • Have teachers noticed their students' observation skills (e.g. using senses, noticing details) changing as a result of nature journaling activities? 	<p>b) Develop cover letter/invitation to complete survey and offer incentive for survey completion. Administer survey to current and past participants.</p>
	<p><i>Process Improvements</i></p> <ul style="list-style-type: none"> • How can TNM improve its nature journaling courses and/or its marketing practices to attract and best satisfy teachers? • What has attracted teachers to take the courses in the first place? (e.g. standards, location, reputation, PD requirements, Wellborn Upper Valley discount, etc.) • What course modifications would make the journaling course even more appealing to participants? • Would journaling alumni take advantage of ongoing contact with TNM staff? What kinds of contact would be most utilized? (e.g. team teaching; coaching; assistance on a field trip; blog/other online forum, etc.) 	<p>c) Analyze survey data. Provide informal summary report.</p>
	<p><i>Reflection prompt</i></p> <ul style="list-style-type: none"> • TBD (i.e. questions from the Castleton survey such as ways in which the course will affect professional practice) 	<p>d) Phone meeting to discuss findings, assist with utilization of data, and discuss next steps.</p>

2. Program Staff Support	<i>* What "next steps" would help TNM refine their evaluation system for ongoing use?</i>	e) Based on conversations with TNM staff, review of evaluation materials currently in use, develop brief recommendations for TNM Evaluation Toolkit (e.g. Table of Contents, ideas for ongoing development and use). Included in report above.
	<i>* What are realistic expectations and plans for generating useful evaluation results within existing resource constraints?</i>	f) Revise current & develop future evaluation plans.
	<i>* Meetings, email, conversations with staff to maximize value from evaluation activities.</i>	g) General, on-going support for utilization of evaluation results and program documentation.
	<i>* Integrating plans with budgets, accounting.</i>	h) Administrative, financial management support.

Appendix D: “What Works” in Professional Development Program

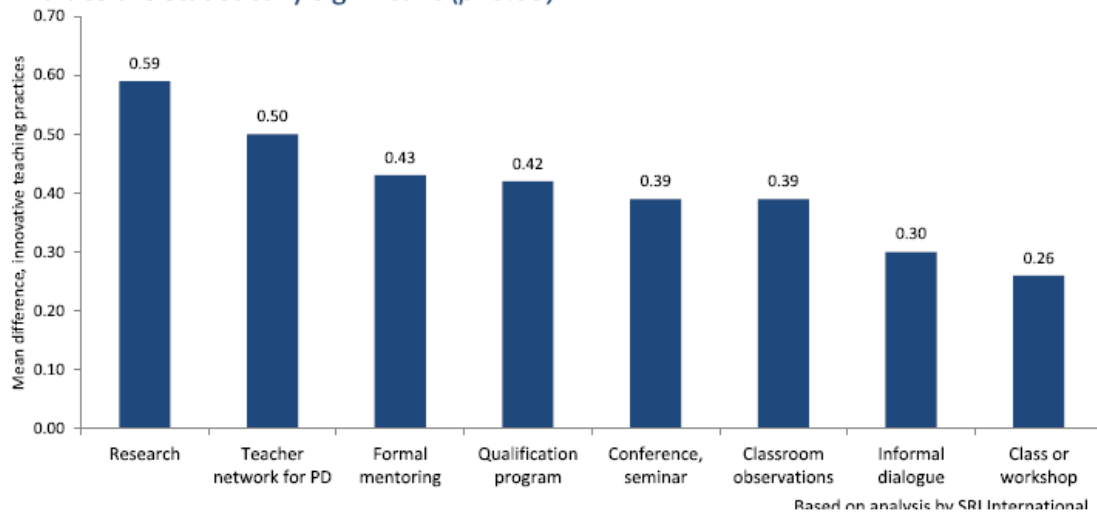
Extracted from *Innovative Teaching and Learning Research*, Executive Summary, October 2010. PDF can be found at:

<http://www.elb2011.org/docs/ITL%20Research%20Executive%20Summary.pdf>

Professional development: Types

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This chart shows the average difference in innovative teaching scores between teachers who participated in particular types of professional development and those who did not. All values are statistically significant ($p > 0.05$)*



The forms of professional development that associate most strongly with reported innovative teaching practices are those that are ‘high-touch’ and ongoing.

Implementation Appendix E:

Promising Practices in Teacher Professional Development in Place-based Education

Excerpted with permission from a working document of the Wellborn Ecology Fund/New Hampshire Charitable Foundation titled: “**Coordinating Place-based Education Professional Development in the Upper Valley; Task Force Report – Draft 9-29-10**”

Note: This preliminary informal draft of promising practices of PBE PD includes ideas harvested from the WEF 2/22/10 gathering of PBE PD providers in Woodstock VT, from PEEC findings, and through a brief literature review. It is included here by way of example of the kinds of things that might be included in a formal WEF list. Next steps might include vetting the list, amplifying and condensing it as needed, and structuring it in cohesive categories.

Professional development programs that successfully change teacher practice in place-based education often share some of the following attributes:

- Extended, multi-season duration (ex: not just a summer workshop)
- Encouraging schools to attend the PD offering in teams, including multi-disciplinary faculty, school administrators and staff, and community partners
- Collaborative learning experiences and opportunities for peer-to-peer sharing and mentoring, developing a sense of collegiality
- Adherence to a philosophy of continuous reflection and learning, and training in how to bring this philosophy to the classroom
- Multiple contacts that allow for trial of and feedback on new techniques
- A content that is responsive to and tailored to teachers’ concerns and requests rather than one that is dictated to them, demonstrating that this approach is not an “add-on”
- Demonstration of how PBE can support district curriculum requirements and standards and/or national science Common Core Standards
- Showcase of successes from other schools with similar programs
- Training in working with community partners, including training in community outreach and publicity
- Training in out-of classroom class management
- Training in applying content at the correct developmental level for their students
- Support for collaborative teacher planning time, both substitutes during the year and budgeted time over the summer
- Direct contact with content experts such as foresters, biologists, journalists, etc.
- Information on accessing content experts who are local or willing to travel to schools
- Program elements that include school administrators and build their support for implementation of PBE initiatives
- Including experiential learning out of the classroom to model approaches and local opportunities – giving adults what they need as learners
- On-the-ground support for teachers as they implement PBE initiatives in their particular settings, ongoing access to resource people for questions and modeling
- Creative scheduling to allow for PD opportunities that fit the needs of the teachers, ex: partial-day workshops spread more frequently throughout the year
- Assistance with locating other appropriate PBE PD opportunities in addition to those offered by one’s own organization
- Clear definition of and support for integration of the emerging promising practices of place-based education (ex: p.11 of *Learning to Make Choices for the Future*)
- Celebration of each step along the path.