Comparison of Teacher Post-PD vs. Nonresponse Questionnaire Results

This document compares responses from teachers who responded to the post-PD questionnaire with the responses from teachers who responded to a follow-up non-response post-PD questionnaire. Chi square tests were conducted when the response choices were nominal (e.g., yes/no or categorical) and independent t-tests were conducted when response choices were ordinal (e.g., 1-5 point Likert-type) or interval (e.g., rating from A+ to F). P values are reported to indicate if initial (PD) and non-respondent (NR) teachers' responses were statistically significantly different (p<.05). Post hoc tests were completed when chi square tests showed statistical significant differences to determine where the differences occurred (Bonferroni method to compare column proportions).

Notes:
▪ The numbers in parentheses immediately following the response choices, such as (55), (1), (0), are the values assigned to each response.
▪ Respondents who did not participate in MWEE PD, were not teachers, or did not teach in a public or private school were excluded from these analyses [SPSS selection syntax PDQ6 ~= 55 & PDMQ3 = 1 & (PDMQ5rev = 1 | PDMQ5rev=2)]

PDQ6 How long ago did you complete a NOAA B-WET-funded professional development focused on watersheds (ocean, coastal, riverine, estuarine, Great Lakes) (also known as a Meaningful Watershed Education Experience professional development or MWEE PD)?
▪ I did not complete a MWEE PD (55) → Exit from survey, these respondents are not included in these analyses
▪ Less than 1 week ago (1)
▪ 1-2 weeks ago (2)
▪ 3-4 weeks ago (3)
▪ 5-8 weeks ago (4)
▪ 9-12 weeks ago (5)
▪ More than 12 weeks ago (6)

	Value	df	p
Pearson Chi-Square	62.663	5	.000

Crosstab					
			Group		Total
			NR	PD	
PDQ6	1	Count	1_a	26_b	27
		% within Group	**1%**	**5%**	4%
	2	Count	1_a	30_b	31
		% within Group	**1%**	**6%**	5%
	3	Count	4_a	98_b	102
		% within Group	**3%**	**19%**	16%
	4	Count	30_a	145_a	175
		% within Group	20%	28%	27%
	5	Count	39_a	65_b	104
		% within Group	**27%**	**13%**	16%
	6	Count	72_a	146_b	218

		% within Group	**49%**	**29%**	33%
Total		Count	147	510	657
		% within Group	100%	100%	100%
Each subscript letter denotes a subset of Group categories whose column proportions do not differ significantly from each other at the .05 level.					

PDMQ3   Are you currently a PreK-12 teacher or educator?
▪ No (0) → Exit from survey, not included in these analyses
▪ Yes (1)

No analysis.

PDMQ5rev   In what setting do you teach primarily? (select one)
▪ Public school (1)
▪ Private school (2)
▪ Non-formal education (e.g., environmental centers, zoos, museums, interpretive programs at local or state level parks, youth organizations, summer camps, after school programs) (3) → Exit from survey, these respondents are not included in these analyses
▪ Home-school (4) → Exit from survey, these respondents are not included in these analyses
▪ Other (88) → Exit from survey, these respondents are not included in these analyses

Chi-Square Tests			
	Value	df	p
Pearson Chi-Square	.363	1	.547

PDGMQ1 In which region did you teach this past year? (check one)
▪ California (1)
▪ Chesapeake Bay watershed (Maryland, Virginia, Delaware, West Virginia, Pennsylvania, New York, and the District of Columbia) (2)
▪ Great Lakes (Ohio, Michigan, Indiana, Illinois, Minnesota, Wisconsin, New York, and Pennsylvania) (3)
▪ Gulf of Mexico (Texas, Louisiana, Mississippi, Alabama, and Florida) (4)
▪ Hawaii (5)
▪ New England (Maine, New Hampshire, Vermont, Massachusetts, Connecticut, and Rhode Island) (6)
▪ Pacific Northwest (Oregon and Washington) (7)

Chi-Square Tests			
	Value	df	p
Pearson Chi-Square	17.925	6	.006

PDGMQ1 * Group Crosstabulation					
			Group		Total
			NR	PD	
PDGMQ1	1	Count	3_a	32_b	35
		% within Group	2%	7%	6%

2	Count	74_a	198_b	272
	% within Group	**51%**	**41%**	43%
3	Count	12_a	26_a	38
	% within Group	8%	5%	6%
4	Count	5_a	51_b	56
	% within Group	**3%**	**11%**	9%
5	Count	23_a	89_a	112
	% within Group	16%	18%	18%
6	Count	11_a	48_a	59
	% within Group	8%	10%	9%
7	Count	18_a	39_a	57
	% within Group	12%	8%	9%
Total	Count	146	483	629
	% within Group	100%	100%	100%

Each subscript letter denotes a subset of Group categories whose column proportions do not differ significantly from each other at the .05 level.

**PDQ10rev	In which grade level(s) do you teach primarily? (select one)**
- PreK (1)
- Elementary (2)
- Middle (3)
- High (4)
- Other (88)

Chi-Square Tests

	Value	df	p
Pearson Chi-Square	2.638	4	.620

**PDGQ2rev	What subject(s) do you teach primarily? (select one)**
- Science (1)
- Technology (8)
- Engineering (9)
- Math (2)
- English Language Arts (3)
- Social studies (4)
- Music (10)
- Fine arts (5)
- Multiple disciplines, including science (6)
- Multiple disciplines, not including science (7)
- Other (please describe) (88) _____

Chi-Square Tests

	Value	df	p
Pearson Chi-Square	11.815	1	.298

PDQ50 How many years have you been an educator? (select one)
- 0 to 5 years (1)
- 6 to 10 years (2)
- 11 to 20 years (3)
- More than 20 years (4)

Chi-Square Tests

	Value	df	p
Pearson Chi-Square	4.922	3	.178

PDQ19   What was your PRIMARY reason for participating in the MWEE professional development? (check one)
- To obtain information and resources for teaching (1)
- Personal interest in the topic of the professional development (2)
- To obtain continuing education, recertification, or graduate credit (3)
- I was required to attend (4)
- I was asked to attend (5)
- Other, please describe: (88) _____

Chi-Square Tests

	Value	df	p
Pearson Chi-Square	4.196	5	.522

PDGQ4   Which type(s) of MWEE professional development did you participate in or receive? (please select yes or no for each type)

	Pearson Chi-Square		
	Value	df	p
One day workshops (usually less than 8 hours) (PDGQ4_1)	3.048	1	.081
Teacher institute (usually on consecutive days that cumulatively consist of 40 hours of more) (PDGQ4_2)	.000	1	.996
Multi-day workshops (events that last at least 6 hours, but are less than 40 hours, e.g., a three-day workshop on a specific topic or a series of five Saturday sessions) (PDGQ4_3)	.424	1	.515
A college-level course (PDGQ4_4)	.468	1	.494
Professional development provider training (training for individuals who provide teacher professional development) (PDGQ4_5)	.622	1	.430
Individual teacher coaching and support (e.g., curriculum planning, shared teaching, demonstrations and/or other forms of in-school or in-field support (PDGQ4_6)	.404	1	.525
On-line professional development support (e.g., courses, webinars, discussion forums) (PDGQ4_7)	1.124	1	.289

PDGQ23rev   About how many hours of MWEE professional development and/or support did you receive over the past 12 months?
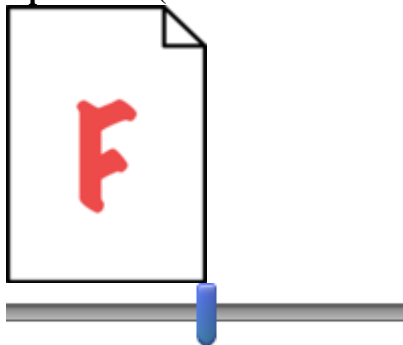- 1-10 hours (9) (note the order)
- 11-20 hours (4)
- 21-40 hours (5)
- 41-60 hours (6)
- More than 60 hours (10)

Chi-Square Tests			
	Value	df	p
Pearson Chi-Square	11.067	4	0.026

Crosstab					
			Group		Total
			NR	PD	
PDGQ23rev	9	Count	38_a	100_a	138
		% within Group	27%	21%	23%
	4	Count	34_a	76_b	110
		% within Group	**24%**	**16%**	18%
	5	Count	33_a	164_b	197
		% within Group	**23%**	**35%**	32%
	6	Count	23_a	90_a	113
		% within Group	16%	19%	19%
	10	Count	15_a	37_a	52
		% within Group	11%	8%	9%
Total		Count	143	467	610
		% within Group	100%	100%	100%
Each subscript letter denotes a subset of Group categories whose column proportions do not differ significantly from each other at the .05 level.					

PDQ37   Overall, what grade would you give your MWEE professional development experience? (slide the scale between F and A+)

1 (1)   2 (2)   3 (3)   4 (4)   5 (5)   6 (6)   7 (7)   8 (8)   9 (9)   10 (10)   11 (11)   12 (12)
13 (13)

	Group	N	Mean	Std. Deviation	Std. Error Mean	t-test (p)
PDQ37	NR	78	11.17	1.671	.186	.176
	PD	296	11.48	1.834	.107	

PDGQ84   For each statement, select one response for BEFORE and one response for AFTER the MWEE professional development.

	BEFORE the MWEE professional development, how confident <u>were</u> you in your ability to: (#1)							AFTER the MWEE professional development, how confident <u>are</u> you in your ability to: (#2)						
	Not at all confident 1 (1)	2 (2)	3 (3)	4 (4)	5 (5)	6 (6)	Extremely confident 7 (7)	Not at all confident 1 (1)	2 (2)	3 (3)	4 (4)	5 (5)	6 (6)	Extremely confident 7 (7)
Teach my students about local watersheds (ocean, coastal, riverine, estuarine, Great Lakes) (PDGQ84_1)														
Incorporate MWEEs into my curriculum (PDGQ84_2)														

	Group	N	Mean	Std. Deviation	Std. Error Mean	t-test (p)	Difference in means
PDGQ84#1_PDGQ84_1	NR	142	3.83	1.726	.143	.087	
	PD	438	4.12	1.767	.084		
PDGQ84#2_PDGQ84_1	NR	136	**5.90**	1.030	.087	**.003**	0.28
	PD	438	**6.18**	1.000	.047		
PDGQ84#1_PDGQ84_2	NR	141	3.16	1.667	.138	.290	
	PD	438	3.34	1.779	.084		
PDGQ84#2_PDGQ84_2	NR	134	**5.52**	1.210	.103	**.001**	0.40
	PD	43	**5.92**	1.155	.055		

		7					

PDGQ84_int Select one response for each statement.

	During the next school year, I intend to:						
	Strongly disagree 1 (1)	2 (2)	3 (3)	4 (4)	5 (5)	6 (6)	Strongly agree7 (7)
Teach my students about local watersheds (ocean, coastal, riverine, estuarine, Great Lakes) (1)							
Incorporate MWEEs into my curriculum (2)							

	Group	N	Mean	Std. Deviation	Std. Error Mean	t-test (p)	Difference in means
PDGQ84_int#1_1	NR	133	**5.86**	1.298	.111	**.005**	0.34
	PD	443	**6.20**	1.226	.058		
PDGQ84_int#1_2	NR	131	**5.63**	1.313	.113	**.012**	0.33
	PD	442	**5.96**	1.276	.060		

Summary of Results

	NR (n)	PD (n)	Statistical significant difference	Meaningful difference
How long ago PD	147	510	yes	no
PreK-12 Teacher or educator	147	510	NA	NA
Setting	147	510	no	no
Region	146	483	yes	no
Grade level	141	476	no	no
Subject	147	484	no	no
Years teaching	147	482	no	no
Reason for PD	146	482	no	no
Types of PD (7 types)	100-122	361-409	no	no
Hours of PD	143	467	yes	yes
Rating of PD	78	296	no	no
Confidence teaching watersheds – before	142	438	no	no
Confidence teaching watersheds - after	136	438	no	no
Confidence using MWEEs – before	141	438	yes	no
Confidence using MWEEs – after	134	437	yes	no
Intention to teach watersheds	133	443	yes	no
Intention to use MWEEs	131	442	yes	no